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INITIATION OF COVERAGE

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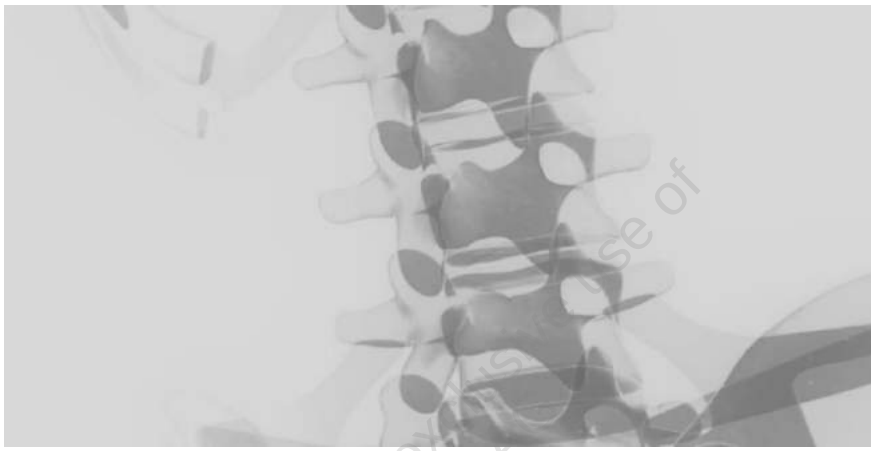
KUROS BIOSCIENCES BUY – PT CHF 7.0



Bloomberg	KURN SW
Market Cap.	37m
Share Price	CHF 2.46
Price Target	CHF 7
Rating	BUY

Repairing Bone

We initiate with a BUY and PT of CHF 7

We initiate coverage on Kuros Biosciences with a BUY rating and price target of CHF 7, based on our risk-adjusted NPV model. Kuros Biosciences focuses on the development and commercialization of innovative products for bone repair and regeneration. The two key products are (1) MagnetOs, a marketed synthetic bone graft substitute, and (2) KUR-113, a novel orthobiologics product candidate for use in spinal fusion scheduled to enter Phase II development in 2019E. Moreover, Kuros owns a CE-marked dural sealant (Neuroseal) which is non-strategic and will likely be divested. The company strives to become a leader in the field of orthobiologics and intends to build-up a small dedicated sales force in the US.

Marketed synthetic bone graft substitute with differentiated surface technology

Near-term revenues driven by the synthetic bone graft MagnetOs: MagnetOs has a patent-protected surface technology that was shown to promote and direct bone formation in preclinical studies. MagnetOs is CE marked and 510(k) approved and available in two formulations. Commercial launch was initiated in June 2018 in the US and in UK. We expect a gradual pick-up of product sales to CHF 0.6m (2018E), CHF 3.1m (2019E), and CHF 7.4m (2020E). The company will further invest into the commercial infrastructure and clinical studies to support market uptake. If clinical performance will prove to be superior to other synthetics or equivalent to gold standard autograft, we project peak sales of CHF 100m (2033E).

Innovative growth-factor based orthobiologics; initiation of pilot/Phase II study in spinal fusion in Q2-19E

KUR-113 is an innovative growth-factor based orthobiologics with the potential for CHF 0.5bn peak sales: KUR-113 is based on the patented fibrin-PTH technology and could potentially become an alternative to Medtronic's bone growth promoter InFuse/rhBMP-2 in spinal fusion. Kuros is in preparation for an accelerated Phase II/III program; the pilot/Phase II study is targeted to be initiated in Q2-19E, with an anticipated interim readout by H2-19E and market launch in 2025E. The technology is de-risked with two Phase II programs completed in trauma indications (~400 patients). If successfully developed, we see a sizeable market opportunity for KUR-113 in spinal fusion with global peak sales of CHF 500m (2033E).

Recently completed capital increase of CHF 16m to fund R&D and commercial activities into 2020E

Financed up to next value inflection point: the company recently raised CHF 16m of new capital to fund the Phase II development of KUR-113 and support the roll-out of MagnetOs in US and selected EU markets into 2020E. According to our estimates, Kuros will require cash injections (capital increases and/or other income) of CHF 25-30m over the next years to fully fund the development of KUR-113 and reach break-even (2023E).

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1 Investment Case

1.1 Investment Triggers

Focused portfolio of innovative and complementary bone graft substitutes: MagnetOs (commercial-stage) and fibrin-PTH orthobiologics product candidate KUR-113 (entering pilot/Phase II development)

- **Transition from clinical-stage into early commercial-stage, focused product portfolio:** Kuros concentrates on two products for bone repair: (1) MagnetOs, a synthetic bone graft substitute (medical device), which was recently launched in the US & EU, and (2) KUR-113, an innovative growth-factor based orthobiologics product candidate, that is ready to enter into Phase II in spinal fusion (Q2-19E). Moreover, Kuros owns a CE-marked dural sealant (Neuroseal), which is non-core and will preferably be divested.
- **MagnetOs is in early launch phase and will drive near-term revenue streams:** the roll-out of MagnetOs was initiated in the US and in selected EU countries (UK) in June 2018. In the initial phase, we project a gradual ramp-up of product sales to CHF 0.6m (2018E), growing to CHF 3.1m (2019E) and CHF 7.4m (2020E). Kuros pursues an evidence-based commercial strategy with own sales reps focusing on KOLs (key opinion leaders), supported by selected distributors. The geographic focus is on the large US market; the largest market segment in terms of indication is in spinal surgery (accounting for >50% of bone graft procedures).
- **Differentiated surface technology could propel market uptake, we project peak sales of CHF 100m:** MagnetOs has a patent-protected sub-micron surface topography that has shown equivalence to gold standard (autograft) in preclinical models. Assuming a positive outcome of ongoing clinical marketing and label extension studies, we anticipate that MagnetOs could achieve a market share of up to 12% in the synthetics market (US & EU) and generate peak sales of CHF 100m p.a. If no clinical equivalence to autograft can be established, we assume a lower peak sales potential (in the range of CHF 50-75m p.a.). In our opinion, MagnetOs could generate positive cash flows as of 2021E/2022E.
- **KUR-113 is an innovative growth-factor based orthobiologics with peak sales potential of CHF 500m:** KUR-113 a novel orthobiologics in development for use in lumbar interbody spinal fusion (in combination with a cage). The product is based on Kuros' patented fibrin-PTH technology and, if approved, could potentially become an alternative to Medtronic's bone growth promoter Infuse/rhBMP-2. If successfully developed, we forecast global peak sales of CHF 500m (2033E) for KUR-113. The technology is de-risked with two Phase II programs of fibrin-PTH previously completed in trauma indications (~400 patients).
- **Key development milestones for KUR-113:** near-term milestones include the IDE submission for the pilot/Phase II study and the 510(k) approval of the spinal cage (component of KUR-113 development plan), both expected for Q1-19E. The initiation of the pilot/Phase II trial (40-60 patients) is targeted for Q2-19E, with an interim read-out planned in mid 2020E (on 50% of enrolled patients); in parallel, a Phase III program will be prepared for initiation in 2021E, enrolling an estimated 300-400 patients, in line with other programs seen for orthobiologics bone graft substitutes (growth- factor based). Potential market launch is targeted for 2025E.
- **Cash injections to fund KUR-113 development:** the company raised in December 2018 CHF 16.1m in equity (gross proceeds) to advance the Phase II development of KUR-113 and support the roll-out of MagnetOs. According to our estimates, Kuros will require further cash injections (capital increases and/or other income) totaling CHF 25-30m - excluding the recent CHF 16m funding round - to fully fund the development of KUR-113 (OctE: CHF 38m R&D cost for Phase II and Phase III) and reach a break-even result (OctE: in 2023E). Accordingly, we include

in our model a CHF 29m funding round (for modelling purposes we assume a capital increase) in 2020E.

- **Upside potential from Neuroseal:** we understand that Kuros does not intend to commercially launch its CE marked synthetic dural sealant Neuroseal given the lack of synergies. Instead, the company is exploring strategic options; in our view a complete disposal is a likely scenario. We forecast peak sales of Neuroseal of CHF 30m (EU & US). Given Neuroseal is not approved in the US yet and market success has not been proven in EU, we believe the selling price could be capped (we note, companies with similar US-approved products were purchased by large medtech players for >USD 200m). Still, a disposal could provide additional funding to advance the fibrin-PTH pipeline. We emphasize that Neuroseal is not part of our valuation.

Growth

Structurally growing markets, potential to address medical needs in spinal surgery and bone grafting

- **Structurally growing market for bone graft substitutes:** the global market for bone graft substitutes and orthobiologics, which Kuros addresses with MagnetOs and KUR-113, is structurally growing; the market value is estimated to increase from USD 2.2bn (2016) to USD 3.4bn in 2030E (+3.2% CAGR), driven by an underlying volume growth of +1% p.a. (ageing population, active lifestyle). There is a clinical need for improved, safe and easy-to-use products at reasonable prices.
- **We expect an acceleration of MagnetOs sales after the completion of clinical marketing trials:** in the first three years of launch we project a moderate ramp-up of product sales (OctE: CHF 7.4m in 2020E); however, we expect a material sales acceleration after the completion of clinical trials to strengthen the product claims and extend the US label. We believe peak sales of CHF 100m (2033E) are feasible if clinical evidence (superiority over other synthetics, equivalence to autograft) can be demonstrated in randomized controlled trials.
- **KUR-113 addresses a large market segment (spinal fusion), strong growth expected:** if successfully developed, KUR-113 could start contributing to Kuros' topline as of 2025E and benefit from commercial synergies with MagnetOs (same physician base). The product will be positioned in the highest-value product category (growth factor-based bone graft substitutes) and address a large market (spinal fusion). Assuming non-inferiority to autograft and a clean safety profile, we project a market penetration of 10% and CHF 500m peak sales (2033E).

Competitive Position

Degree of product differentiation, clinical performance and positioning are key drivers for commercial success; distribution power of small companies vs. big medtech players is a major challenge

- **KUR-113 and MagnetOs will compete against established bone graft substitute products:** we believe that there is strong competition in the bone graft substitute market. Many competitors are large medical device players with an established distribution network to physicians and hospitals and a full range of products and devices ("product bundling" is common). Hence, the distribution power of a small company versus big medical technology companies can be a major challenge.
- **MagnetOs is competing primarily against second-generation synthetic bone graft substitutes**: some of them (e.g. Vitoss) are marketed by large medical device companies with strong distribution power. Market success of MagnetOs will depend of (1) clinical efficacy data, (2) an efficient, evidence-based selling process, and (3) pricing considerations. As reflected in our forecasts, we expect a meaningful sales acceleration once positive clinical data will be available (beyond 2020E) to differentiate the product from peers. MagnetOs has patent-protection (granules: 2034E; putty: 2036E).

- **KUR-113 will compete against Medtronic's Infuse and other high-priced graft substitutes:** KUR-113 is based on a combination of a naturally-occurring growth factor (PTH analog) that is chemically-linked to a fibrin-matrix and will be used in combination with a medical device. To our knowledge there is no directly comparable product on the market, but other biologics products such as Infuse are well established. Assuming a positive outcome of clinical trials demonstrating non-inferiority to autograft and a clean safety profile, KUR-113 could be perceived as a better (safer) alternative to Infuse. Given the high barriers of entry with complex regulations for orthobiologics and the associated high R&D investments, we expect a limited number of competing products in this segment of the market. KUR-113 is patent-protected (until at least 2034E).
- **Limited number of approved synthetic dural sealants:** Neuroseal (technology licensed from ETH Zurich) is patent-protected until 2025E in EU and until 2030E in USA. The market for dural and spinal sealing comprises the approved and marketed synthetic products DuraSeal (Integra) and Adherus (Stryker), and other products that are used in clinical practice (e.g. collagen or fibrin sealants).

Valuation & Recommendation

We set a price target of CHF 7 (based on rNPV and initiate with a BUY rating

- We use a risk-adjusted NPV (sum-of-the parts) model with a WACC of 14.0% to derive our **price target of CHF 7.0** for Kuros Biosciences. Our standard DCF model (10-year forecasts plus TV, WACC 15.7%) yields a fair equity value of CHF 6.7, which broadly supports our PT of CHF 7.
- We note, our fair equity value calculation includes a CHF 29m capital increase in 2020E (calculated at current share price levels of CHF 2.50) which has a negative effect of ~CHF3.5 on the fair value. The legacy portfolio (Neuroseal, trauma products, out-licensed Cytos assets) is not part of our valuation. For details please refer to Chapter 7.
- **In conclusion, we initiate coverage on Kuros Biosciences with a BUY rating and a price target of CHF 7 (+185% upside potential).**

rNPV (CHF M)	NPV (100%)	RISK ADJUSTMENT	rNPV	PER SHARE (CHF)	
CONTINUING PROJECTS					
KUR-113 - USA SPINE	214	30%	64	2.4	34%
KUR-113 - EUROPE SPINE	34	30%	10	0.4	5%
TOTAL KUR-113 SPINE	248	**30%**	**74**	**2.8**	40%
MAGNETOS - USA	72	80%	58	2.2	31%
MAGNETOS - EU	12	80%	10	0.4	5%
TOTAL MAGNETOS	85	**80%**	**68**	**2.5**	36%
OTHER INCOME/COST	-15	100%	**-15**	**-0.6**	-8%
OTHER PIPELINE ASSETS/MILESTONE PAYMENTS	0		0	0.0	
TOTAL PRODUCTS/COST	317		**127**	**4.8**	68%
NET CASH (END OF 2017)	17		17	0.6	9%
+ CASH FROM CAPITAL INCREASE (Dec 2018)	16		16	0.6	8%
+ CASH FROM CAPITAL INCREASE (2020E)	28		28	1.1	15%
EQUITY FAIR VALUE	711		**187**	**7.0**	**100%**
NO. OF SHARES (M) *15.1*					
NEW SHARES CAP. INCREASE 2020E *11.6*					
TOTAL NO. OF SHARES (M) *26.7*					WACC: 14.0%

For illustrative purposes/not included in rNPV:

rNPV (CHF M)	NPV (100%)	RISK ADJUSTMENT	rNPV	PER SHARE (CHF)
DISCONTNUED/FOR SALE				
NEUROSEAL - EUROPE	10	90%	9	0.3
NEUROSEAL - USA	11	80%	9	0.3
TOTAL NEUROSEAL	21	**85%**	**18**	**0.7**
(ASSUMES NO PREMIUM PAID BY STRATEGIC BUYER)				

SOURCE: OCTAVIAN

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1.2 Investment Case Risks

There are risks related to the Kuros investment case that investors should bear in mind. Note that this list represents key risk factors but is not meant to be comprehensive or exhaustive:

- Kuros Biosciences is an emerging medical technology/biotechnology company that is currently loss-making. The next 6 to 18 months are crucial for Kuros' future development and financial position and depend on (1) the sales ramp-up of MagnetOs, (2) the investment needed to build up the commercial infrastructure to support market launch of MagnetOs, (3) the initiation of the pilot/Phase II study for KUR-113 (to establish clinical proof-of-concept), and (4) the interim read-out of the pilot/Phase II trial by H2-20E. This bears risks or opportunities that might have been under- or overestimated in this report. Due to product-specific risks and the uncertain go-to market strategy, an investment in a company in this field should be considered as highly risky.
- **Financing risk:** at the end of September 2018, Kuros had a net cash position of CHF 6.6m. We estimate that in total, the company needs approximately CHF 45m of cash injections to develop KUR-113 until approval and reach break-even. Hence, we expect that – in addition to the recently completed capital increase of CHF 16.1m (gross proceeds) - another cash injection of ~CHF 29m is required by 2020E (via capital increases, debt funding, partnering activities, and/or the divestment of Neuroseal). Additional funding might be required or could result in higher than expected dilution.
- **Development & approval risk for KUR-113:** the orthobiologics product KUR-113 has higher hurdles for approval as it contains a drug-component. The company has never developed a drug until approval and has limited experience with the relevant regulators. The authorities may not accept to regulate KUR-113 as a medical device, possibly requiring a different approval pathway. Despite the positive Phase II data obtained in trauma, KUR-113 could fail in clinical trials. Hence, this key pipeline product might not be approved for marketing by the regulatory authorities in EU and/or US. Or, the regulatory process might take longer than forecasted by us, delaying commercialization of KUR-113.
- **Product sales risks, general sector risks:** assuming regulatory approval for KUR-113, the competitive situation, reimbursement policies or market adoption might be different than forecasted by us, which could result in lower sales and profitability compared to our projections. Also, there is the risk of stronger than anticipated competition in the market for synthetic bone graft substitutes, resulting in a slower market uptake of MagnetOs. General sector risks include enhanced competitive pressures, changes in reimbursement, pressure on drug and medical device prices, and product recalls.
- **Execution risk:** Kuros is an emerging orthobiologics company and the go-to-market strategy for KUR-113 is not certain at this stage. For commercialization of MagnetOs, and possibly also for KUR-113, we assume that Kuros will have a small dedicated sales force and in addition will enter into selected distribution agreements. Hence, the company will rely to a certain extent on its licensees and distributors. In case of a direct distribution in key markets, we see heightened execution risks as Kuros has no experience in running a commercial organization and has yet to hire key personnel. The departure of key members of the management team could negatively affect Kuros' ability to run operations and to sustain its innovation power.
- **Trading liquidity risk:** Kuros is a small-cap company with a limited free float (~70%) and limited stock liquidity (on average 10'200 shares traded per day in the past 3 months).

2 Company

2.1 Introduction & Strategy

Emerging player in tissue regeneration and repair

Innovative products for tissue repair and regeneration: Kuros Biosciences AG (ticker: KURN SW), headquartered in the Zurich area (Schlieren), was founded in the year 2000 as a spin-off of the ETH Zurich. The company owns exclusive rights to an innovative fibrin-PTH orthobiologics technology; its key product candidate KUR-113, a growth-factor based bone graft for spinal fusion, is currently in preparation for Phase II. In early 2017, Kuros acquired privately-held Xpand, based in Bilthoven/Netherlands, in an all share deal. The transaction added MagnetOs, a complementary CE marked bone graft substitute, to Kuros' product portfolio. Kuros has 28 FTEs. The fibrin-PTH orthobiology product development is in Schlieren. Medical device product development and the state-of-the-art GMP manufacturing facility for MagnetOs are in Bilthoven, as well as regulatory affairs, quality management and logistics functions. Moreover, a US subsidiary was set up in Boston in early 2018 for US product commercialization. Sourcing of components is secured from recognized third party suppliers.

9M-18 operating loss of CHF 9.1m; cash balance of CHF 6.6m (end Q3-18) bolstered by recent CHF 16m capital increase

In transition from development-stage into commercial-stage: the company recently transitioned into early commercial-stage (MagnetOs was launched in Q2-18) but is still cash flow negative and will remain so for the next few years. In 9M-18, Kuros reported revenues of CHF 0.3m (milestone payment) and an operating loss of CHF 9.1m. The cash balance amounted to CHF 6.6m at the end of September 2018. Through the CHF 16m capital injection conducted in December 2018, in our opinion the cash reach is extended into 2020E, up to the next value inflection point (interim readout of KUR-113 trial in mid 2020E).

Focus on MagnetOs and fibrin-PTH orthobiologics (KUR-113) in spine

Strategic focus on the spine market: over the course of 2018, the strategic focus was narrowed to allow for a more targeted investment of available funds. Hence, the company concentrates on (1) the roll-out of MagnetOs and (2) the development of KUR-113 in spine. As a background, following a management change in late 2017, the company set clear priorities for the fibrin-PTH development pipeline and decided to develop KUR-113 in combination with a spinal cage for use in lumbar spinal fusion. The strategic rationale is to focus on the largest commercial opportunity, which is seen in spinal indications that make up >50% of all bone graft procedures. Consequently, development activities for the two trauma product candidates KUR-111 (for tibial plateau fractures) and KUR-113 (for open tibial shaft fractures) were halted. We view this as a sensible strategy considering the high investments required for the simultaneous development of all products. Also, the CE marked dural sealant Neuroseal will not be further developed and will likely be divested.

Own dedicated sales force in US market; opportunity for a specialized orthobiologics company in a market dominated by hardware suppliers

Hybrid commercial strategy: Kuros aims to become a leading orthobiologics business built on clinically-proven technology, and own commercial infrastructure supported by local distributors. For the roll-out of MagnetOs in the US (started in June 2018), Kuros has established a first commercial footprint and currently employs 2 sales reps; this number is expected to grow to 4 in 2019E, and to 9 in 2020E. Further, Kuros is in negotiations with potential distributors in the US, with a focus on mid-sized and local distributors. It is evident that a direct strategy requires substantial investments; however, as the commercial infrastructure will be built up gradually, we do not expect a huge step-up in S&M cost in the short to medium-term. The selling efforts will focus on key opinion leaders (KOLs) and the attendance at scientific congresses. In EU, the focus is on selected markets in collaboration with local distributors. In the longer term, MagnetOs and the fibrin-PTH orthobiologics are synergistic as they address the same physician base (orthopedic surgeons and neurosurgeons doing spine surgery).

2.2 Product Portfolio & Key Value Drivers

Two complementary and innovative orthobiologics products

Focused portfolio of innovative products in bone regeneration: the product portfolio comprises two key products that drive the investment case and will be analyzed in more detail in the following chapters:

(1) **MagnetOs** (commercial-stage)
(2) **KUR-113 / fibrin-PTH bone graft** (moving into Phase II)

MagnetOs synthetic orthobiologics portfolio ("medtech"):

Surface Science Orthobiologics (CE Mark/510k)				
Product	Therapeutic Area	Preclinical	Regulatory Submission	Market Clearance
MagnetOs Granules (EU)	Orthopedics, Spine, Dental			
MagnetOs Granules (US)	Spinal Fusion (posterolateral)			
MagnetOs Putty (EU)	Orthopedics, Spine, Dental			
MagnetOs Putty (US)	Spinal Fusion (posterolateral)			

Fibrin-PTH orthobiologics pipeline ("biotech"):

Fibrin/PTH Growth Factor-based Orthobiologics					
Product	Therapeutic Area	Preclinical	Phase 1	Phase 2	Phase 3
KUR-113 (EU & US)	Spinal Interbody Fusion[1]				

Source: Kuros. [1]Anticipated phase II&III program utilizing safety data from KUR-113 tibial shaft fracture trial

MagnetOs is an approved synthetic bone graft substitute (US & EU)

MagnetOs is an approved synthetic bone graft substitute: MagnetOs has an enhanced sub-micron surface topography. MagnetOs granules were granted CE mark in July 2016 for use in orthopedics, spinal and dental application; the putty form was approved in May 2018. In the US, the company obtained 510(k) marketing clearance in February 2017 for the granules and in August 2018 for the putty for posterolateral spinal fusion (PLIF). Meanwhile, the US label of the putty was extended to include some orthopedic indications. Commercialization in the US (via a small direct sales force) and EU (launched to date in UK via a distributor) started in 2018. MagnetOs has an excellent efficacy and safety profile; clinical post-approval trials are underway to strengthen the marketing case. This includes an investigator-led randomized trial in 100 spinal fusion patients comparing MagnetOs to autograft. Also, Kuros aims to expand the label in the US to include additional indications. For full details on MagnetOs, please refer to Chapter 4.

KUR-113 is a growth factor-based orthobiologics product for use in spinal fusion

KUR-113 is a growth factor-based orthobiologics product to be developed for use in spinal fusion: the product candidate is based on Kuros' patented fibrin-PTH technology and will be developed for use in spinal fusion, in combination with a medical device (spinal cage). Of note, while the targeted end-market for KUR-113 is also in the medical device area (spine), the approval process is more complex compared to a standard bone graft substitute. A feasible path to approval could be via a PMA (pre-marketing application), which is the usual regulatory pathway for Class III medical devices and was used for similar products e.g. Medtronic's Infuse. The company plans for an accelerated Phase II/III development program, with the initiation of Phase II scheduled for Q2-19E. For full details on KUR-113, please refer to Chapter 5.

2.3 Upcoming Clinical Milestones

We expect several clinical milestones over the next 6-18 months

- IDE Submission for Phase II study KUR-113: Q1-19E
- 510(k) approval of spinal cage (component of KUR-113): Q1-19E
- Initiation of Phase II trial for KUR-113 (FPI): Q2-19E
- Interim read-out of Phase II trial: mid 2020E (key value inflection point)

2.4 Legacy Portfolio

The company's legacy portfolio comprises a CE marked medical device asset (Neuroseal) and two fibrin-PTH product candidates that have completed Phase II. We provide an analysis of **Neuroseal** (dural sealant), a CE marked medical device in a niche neuro-surgery market segment. Of note, Neuroseal and the other legacy products are not included in our valuation.

Biotech/medtech legacy portfolio:

Legacy portfolio					
Product	Therapeutic Area	Preclinical	Phase 1	Phase 2	Phase 3
KUR-111 (EU & US)	Tibial Plateau Fractures				
KUR-112 (EU & US)	Solitary Bone Cysts				
KUR-113 (EU & US)	Tibial Shaft Fractures				
Product	Therapeutic Area	Non-clinical	Pilot	Pivotal	Registration
KUR-023/Neuroseal (EU)	Dural sealant[2]				
KUR-023/Neuroseal (US)	Dural sealant				

Source: Kuros. [2]Discussion ongoing with EU regulatory body to obtain spinal claim without (pre)-clinical studies

Neuroseal potentially to be divested; not part of our company valuation & price target

Neuroseal is registered in EU, no own commercialization envisioned, likely to be divested: Neuroseal is a dural sealant ("glue") for use in brain surgery that provides a watertight seal around the membrane surrounding the brain. The product received CE mark approval in June 2017. In the US, the product is not registered; approval would likely require a timeline of 3 years and CHF 7-10m R&D investment (PMA approval pathway with an estimated 100-200 patient study). The market for dural sealants is a niche in neurosurgery, with a limited number of competing products. The market potential is estimated at ~CHF 200m p.a., with a CAGR of ~5%. We assume that Neuroseal, slightly differentiated from other sealants by enhanced ease-of-use, could gather a market share of up to 12% and generate peak annual sales of CHF 30m (EU & US). Kuros is in the process to extend the CE mark label (to include the use in spinal indications as well) and is currently in discussion with the EU regulators to obtain such claim without additional data. For full details see Chapter 8.

Fibrin-PTH development activities in trauma are on hold and not included in our valuation

KUR-111 & KUR-113 in trauma, KUR-112: the fibrin-PTH orthobiologics products KUR-111 and KUR-113 are designed to generate bone tissue during fracture healing and have met the primary endpoints in large Phase IIb studies in specific trauma indications. Until recently, Kuros intended to initiate Phase III trials in trauma and in parallel advance KUR-113 in spine; however, due to the high investments required to run three development programs simultaneously, the company decided to focus first on KUR-113 for spinal fusion and put the trauma programs on hold. KUR-112 for the treatment of solitary bone cysts has obtained orphan drug designation by the FDA and EMA and a Rare Pediatric Disease designation. As more preclinical data is required before moving into the clinic, the project is on hold.

Upside potential (milestones, royalties) from Cytos legacy products not reflected in our valuation

Former Cytos' activities out-licensed, potential for milestones (not included in our model): all former Cytos' activities have been terminated or were out-licensed and do not require any further investments by Kuros. In case of success, Kuros could be eligible for milestones or royalty payments (not included in our estimates). Checkmate Pharmaceuticals has licensed the immune modulator CMP-001 (formerly known as CYT003), a TLR-9 agonist encapsulated in a VLP (virus-like particle). Checkmate is conducting a Phase Ib trial in combination with the PD-1 inhibitor Keytruda (Merck & Co.) in melanoma patients; all development activities are fully financed by Checkmate. Deal terms include potential development milestones of up to USD 90m, and up to double-digit royalties. Also, antigen-specific rights to the VLP-technology have been granted to Pfizer, and to Novartis (in Alzheimer's).

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2.5 Company Organization

Most of the team members have been with the company for several years (see abbreviated CVs below). The members of the management team have experience in different fields and the necessary skills required for an emerging medical device/biotechnology player; many of them have shareholdings in the company and are incentivized with option plans. Three founders and shareholder of Xpand remain involved in the combined business. The current Board of Directors has nine members: Clemens van Blitterswijk (Chairman), Leanna Caron (Vice-Chairperson), Joost de Bruijn (CEO), Christian Itin, Gerhard Ries, Giacomo Di Nepi, Jason Hannon, Scott P. Bruder and Oliver Walker.

2.5.1 Management Team

Joost de Bruijn, PhD
Chief Executive Officer

Joost de Bruijn, PhD, is currently Chief Executive Officer of the Company. He is the founder and CEO of Xpand (since 2005). Professor of Biomaterials at Queen Mary University of London, UK (since 2004) and Professor of Regenerative Medicine and Entrepreneurship at Twente University, the Netherlands (since 2011). Prior at Progentix Orthobiology (founder), Scinus Cell Expansion (founder) and IsoTis Orthobiologics (Research Director Bone). PhD from Leiden University.

Michael Grau
Chief Financial Officer

Michael Grau is Chief Financial Officer of Kuros since February 2018. Mr. Grau has a track record of 25 years' experience in corporate finance, controlling, accounting and general management in diverse industries and, since 2000, with a focus on medtech, biotech and pharma. Before he joined Kuros, he served as CFO of Proteros Biostructures, Correvio and Endosense, starting his career in the life science industry working for MorphoSys AG. Prior, he was working for KPMG Pat Marwick. Mr. Grau holds a BA in European Finance and Accounting from Bremen University, Germany, and Leeds University, U.K., and an executive MBA from Henley Business School at the University of Reading.

Dr. Alistair Irvine
Chief Business Officer

Since 2006 at Kuros, previously technical and commercial consultant to the biotech industry, Deputy Director of Research and Research Operations Manager at Innovata, Head of Biology at ML Laboratories, several positions at Cobra Therapeutics Ltd and Senior Scientist with Therexsys. PhD in Molecular Biology from the University of Sheffield and a BSc in Biochemistry from the University of Edinburgh.

Pascal Longlade
Chief Medical Officer

Joined Kuros in September 2018 and has more than 24 years of experience in both pharmaceutical and medical device/biotech companies. His expertise spans Clinical Development, Medical Affairs, Pharmacovigilance/Drug Safety and Regulatory Affairs in various therapeutic areas. Dr. Longlade has also more than 10 years of clinical practice and worked in ER's, ICU's and CCU's in leading hospitals in Paris. In his last position, he served as Director of Medical Affairs, Head of Regulatory Affairs and Director of Pharmacovigilance at D&A Pharma, responsible for filing of the company lead product in EU through a decentralized procedure. Dr. Longlade holds a MD degree from the University of Paris Lariboisiere-St Louis, France.

Dr. Philippe Saudan
Chief Development Officer

Since August 2016; previously Chief Scientific Officer at Cytos. 19 years of experience in the pharmaceutical industry, different management roles in R&D. Dr. Saudan has considerable experience in R&D and international project management of multidisciplinary programs. PhD in biology from the University of Lausanne, Switzerland.

Frank-Jan van der Velden
Head of Business Affairs & Finance of Kuros Biosciences B.V.

Co-founder & executive Board member of Xpand; co-founded CellCoTec, Progentix Orthobiology and Materiomics. Prior partner at Krüger & Partners, director of Quote Media Holding. Board member of RiverDiagnostics, executive board member of Materiomics and chairman of the supervisory board of TIIN Techfund III BV. Graduate of Erasmus University Rotterdam School of Management.

3 Bone Graft Substitutes & Bone Repair Market

3.1 Market Overview

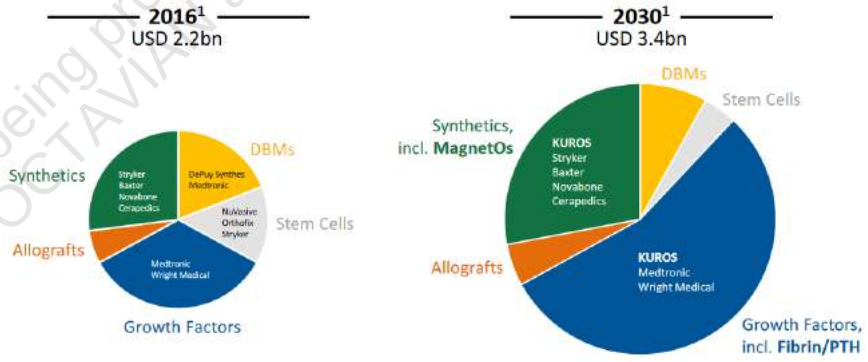
The market for bone graft substitutes has a size of USD 2.2bn and is expected to grow to USD 3.4bn by 2030E (CAGR of 3.2%)

USD 2.2bn market, growing ~3% p.a.: the market for bone graft substitutes in US & EU has an estimated size of USD 2.2bn (2016) and is projected to expand to USD 3.4bn by 2030E (+3.2% CAGR). The underlying drivers of volume growth are an ageing and increasingly active population (OctE: +1% CAGR). In the US, an estimated ~1.4m bone grafting procedures are performed p.a. In Europe the corresponding number ~1.3m (source: Kuros, Millenium Research Group). Many of these procedures use a graft from the patient's own bone that has been surgically removed from another site of body (autograft), which is used in an estimated 40% of procedures in the US, and 50% in Europe. The remaining procedures, i.e. the grafting procedures that do not use autograft (60% in the US, 50% in EU), represent the current bone graft substitute market. While autograft is the gold standard in terms of efficacy and safety, it has major drawbacks. Hence, the potential replacement of autograft could further increase the total market opportunity for bone graft substitutes.

Spinal fusion is the largest market segment (USD 1.4bn) for bone grafts

Spinal fusion represents the largest segment: out of the USD 2.2bn market size, spinal fusion is the largest segment (USD 1.4bn), while other indications (orthopedics, mostly trauma, cranio-maxillofacial) make up USD 0.8bn. The market for spinal fusion is forecasted to grow to USD 2.0bn by 2030E (+2.6% CAGR).

Bone graft substitute market by value share (excl. autograft):



Source: Kuros company presentation, company estimates

Replacing natural bone with a bone graft substitute

Natural missing bone can be replaced with a bone graft substitute: a bone graft is a material that is used by orthopedic or spinal surgeons to replace a missing piece of bone, or to fill a void and promote new bone ingrowth. In fracture repair (trauma), where there is bone loss or compression, or in fusion procedures, where there is a requirement to grow bone to bridge a gap, a bone graft substitute material can be used as an alternative to the patient's own bone (autograft). Applications for bone graft substitutes are diverse and include dental, orthopedic and spinal applications. In orthopedic trauma, the treatment of delayed unions, mal-unions, and non-unions requires restoration of alignment, stable fixation (hardware such as screws and plates), and in many cases adjunctive measures such as the use of bone-graft substitutes.

Autograft is the gold standard, but has several drawbacks

Gold standard in grafting is the use of the patient's own bone: autograft, also called autologous bone, is harvested in a separate surgical procedure, commonly from the iliac crest. Autologous bone graft is an excellent grafting material, but availability may be limited and the procedure to

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harvest the material might be associated with complications (pain and morbidity at the site of harvesting), besides the additional cost for the procedure. Major advantages of autograft include its excellent bio-compatibility and the fact that the naturally occurring bone growth substances contained within autograft promote new bone growth and fracture healing.

Alternatively, bone graft substitutes are being used

Synthetic and other materials can be used as an alternative to autograft: bone graft substitutes can either replace autologous bone graft completely or expand an existing amount of autologous bone graft. Bone substitutes provide for mechanical (structural) support and support osteoregeneration.

Bone graft substitutes usually have one or more components: (1) an osteoconductive matrix to support the in-growth of new bone; (2) eventually they include osteoinductive proteins to support mitogenesis of undifferentiated cells; and (3) possibly osteogenic cells (osteoblasts or osteoblast precursors) capable of forming bone in the proper environment. Various forms of bone-graft substitutes are available and include allograft bone preparations such as demineralized bone matrix and calcium-based materials. Allogeneic bone is bone originating from a foreign body such as cadaveric bone, or from animal bone. Generally, we understand that the choice of material is dependent on the clinical situation and on the surgeon's preference. There are various products available, differing with respect to efficacy, cost and patient morbidity as outlined below.

Overview bone graft materials:

Autograft	Gold standard, excellent product characteristics in terms of osteoconduction and osteoinduction. Iliac crest autograft considered as gold standard. Major drawback: cost of surgery, morbidity at harvest site, availability may be limited
Allograft	Low cost (ASP ~USD 200 per unit). Reduced osteoinductivity may lead to inferior healing as compared to autograft. Cadaver bone or xenograft, cancellous or cortical bone. Osteoamp (Bioventus): allograft-derived growth factor-rich bone graft
Demineralized bone matrix (DBM)	ASP up to USD 1'700/unit. Widely used, cost effective. Made of human cadaveric bone, variability of lots. Highly processed allograft derivative with >40% of the mineral content of the bone matrix removed by mild acid, while collagens, non-collagenous proteins and growth factors remain. Osteoconductive & osteoinductive. Key products: DBX (DePuy Synthes), Grafton DBM (Medtronic).
Synthetics	Calcium phosphate base, hydroxyl apatite. Cost per unit ranging from USD 1'000 for basic void fillers (first-generation) up to USD 4'000 for premium-priced second-generation products. Examples: Vitoss (Stryker, > USD 100m sales p.a.), Novabone (Novabone), ChronOs (DePuy Synthes), Nuvasive (AttraX), i-Factor (Cerapedics). Actifuse (Baxter) lost substantial market share
Autologous bone marrow, stem-cell based products	ASPs over USD 4'000, high costs and complex supply chain major drawbacks. Products: Trinity Elite (Orthofix), Osteocel (Nuvasive)
Biologics (bone growth factors)	Recombinant bone morphogenetic proteins (BMPs), other growth factors. ASP per unit up to USD 6'000. Drawbacks: high price point, safety concerns (Infuse). Product examples: Infuse/rhBMP-2 (Medtronic), Augment (Wright Medical)

Source: Octavian, Kuros, company websites, other

4 MagnetOs: Synthetic Bone Graft Substitute

4.1 Summary

MagnetOs: synthetic bone graft

Approved in the US & EU

Sales 2018E: CHF 0.6m

Peak sales: CHF 100m (2033E)

rNPV: CHF 68m (80% risk-adjustment)

Synthetic bone graft substitute differentiated by a patented advanced surface technology: MagnetOs, originally developed by Xpand Biotechnology B.V. (acquired by Kuros in January 2017), is a calcium-phosphate (HA/TCP)-based synthetic bone graft substitute. The product has an innovative and patented surface structure promoting progressive bone growth. In EU, the product has an osteoinductive claim in the label.

Launched in US & UK in Q2-18; strategic focus on the US spine market: MagnetOs granules and putty received CE mark approval for use as bone void filler in orthopedic, craniomaxillofacial and dental applications, and have so far been launched in UK via a distributor. MagnetOs (granules and putty) is 510(k) approved as an autograft extender in posterolateral spine; the US launch was initiated in Q2-18 with a small direct sales force (currently 2 reps, focusing on KOLs). Clinical marketing studies are ongoing and US label extension studies underway. Moreover, we assume that additional formulations (e.g. strips) are under development.

Our sales forecasts (12% peak market share) are based on equivalence to autograft

Premium-priced product in a crowded market, peak sales potential of CHF 100m: we estimate the global market for synthetic bone graft substitutes to have a size of ~CHF 600m, with a projected CAGR of +1-3%. The market is quite fragmented with a broad range of synthetic products available. Assuming a positive outcome of the envisioned clinical marketing trials, we anticipate that MagnetOs could achieve a market share of up to 12% (US & EU) and generate peak sales of CHF 100m p.a. This forecast is based on (1) a differentiated product profile with a high efficacy (innovative surface technology resulting in faster healing, comparable to autograft), and (2) an evidence-based distribution strategy with own sales reps, supported by selected distributors. If no equivalence to autograft will be established, we assume a lower peak sales potential (in the range of CHF 50-75m p.a.).

We project an initially moderate revenue contribution: we expect MagnetOs to generate sales of CHF 0.6m in 2018E, increasing to CHF 3.1m (2019E) and CHF 7.4m (2020E). We forecast a more substantial pick-up of product sales following the read-out of clinical studies beyond 2019E.

We calculate for MagnetOs a risk-adjusted NPV of CHF 68m (using an 80% probability-adjustment).

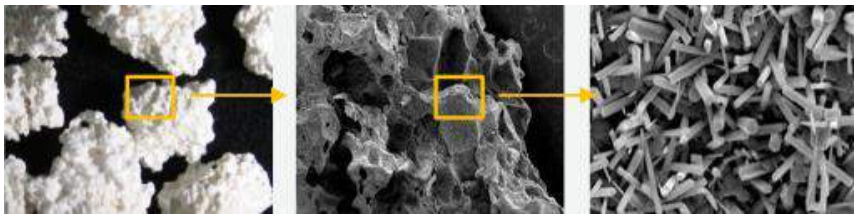
4.2 Product Description

Differentiation through a proprietary osteo-inductive surface science technology

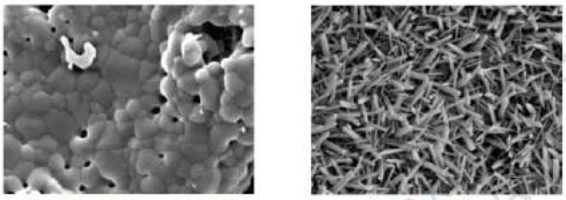
Proprietary synthetic bone graft with an advanced sub-micron surface topography: like other synthetic products, MagnetOs comprises the widely-used substance biphasic calcium phosphate, in the form of 1-2mm or 2-4mm porous granules. However, MagnetOs has a unique and well-differentiated surface structure compared to standard calcium phosphate (see pictures below). Using a patented process, a novel sub-micron surface structure is applied to MagnetOs during manufacturing.

MagnetOs resembles human bone: the osteo-conductive MagnetOs material has a porous trabecular structure that resembles the interconnected structure of human cancellous bone. MagnetOs has a porosity of 70%, matching the porosity of human cancellous bone at sites in the body where MagnetOs is indicated, e.g. over the facet joints in the spine (posterolateral fusion). After implantation in the body, new bone is deposited directly on the surface of MagnetOs.

MagnetOs has an advanced sub-micron surface topography:



Surface structure of MagnetOs vs. standard calcium phosphate:



Source: Kuros

MagnetOs putty:

Source: Kuros

Two formulations available including a moldable putty: MagnetOs is available in two formulations (granules and putty). In the putty formulation, the granules are premixed with a polymeric binder for application to bony defects in the spine. The surgeon can shape the putty to adapt to contours of the bone defect

Protected technology, ambition to strengthen clinical evidence: the company has been quite secretive with regards to the details on how the surface structure is produced; we understand that only a handful of people involved possess knowledge on the manufacturing process. Moreover, the technology has patent protection (granules: until 2034E; putty: until 2036E), for more details refer to chapter 4.4. In preclinical studies conducted so far (predictive animal models), the special surface structure of MagnetOs was shown to elicit safe and localized progressive bone formation, and a subsequent resorption of the implant like autograft, the current gold standard. The company aims to establish clinical evidence to claim the product's superiority to other synthetics and equivalence to autograft.

4.3 Development Status

Straightforward regulatory pathway as medical device; post marketing clinical studies underway to strengthen the product claims

Approved and regulated as medical devices: synthetic bone grafts such as MagnetOs are regulated as Class II medical devices, and do not require clinical data before gathering marketing approval in the US, and CE marking in EU, which enables a relatively short time to market. The granules form of MagnetOs obtained CE mark in July 2016 and was approved by the FDA (510k application) end of February 2017. The moldable MagnetOs putty (which we see as the more important product formulation) received 510(k) approval in August 2017 as an autograft extender in posterolateral spinal fusion. Finally, in May 2018 MagnetOs putty was approved in EU as an osteoconductive and osteoinductive bone void filler in the skeletal system (i.e. spine, extremities, pelvis, cranium, mandible and maxilla). With its unique surface topography, MagnetOs directs early wound healing toward the bone-forming pathway, resulting in an osteoinductive claim in the EU for both formulations. In December 2018, the FDA granted a label extension to MagnetOs putty as a stand-alone bone graft in extremities and pelvis. This paves the way for expansion into more indications in orthopedic surgery.

100-patient study underway to prove non-inferiority to gold standard autograft in spinal fusion; read-out in H2-19E

Clinical studies underway, completion in H2-19E: the good performance of MagnetOs has already been shown in several clinical case studies. To effectively market MagnetOs based on product differentiation (evidence-based selling), controlled clinical trials are underway. In May 2018, a 30-patient investigator-led trial of MagnetOs granules for maxillary sinus floor elevation was started, comparing MagnetOs to autograft. In spinal fusion, a larger investigator-led randomized clinical trial has been initiated in September 2018 in 5 centers in EU. 100 patients undergoing posterolateral spinal fusion in the thoracolumbar and lumbosacral region (T10-S2) will be enrolled in this study. Primary endpoint is posterior spinal fusion rate after one year based on CT-scans. Completion of enrollment is scheduled for H2-19E. If clinical studies can demonstrate equivalence to the current gold standard autograft (as was shown in preclinical/predictive models), this would clearly differentiate MagnetOs from other synthetics that most often have never been investigated in controlled, randomized clinical studies.

4.4 Intellectual Property

Extensive IP; exclusivity until at least 2034E (granules) and 2036E (putty)

Patent-protection until 2034E/2036E: Kuros has secured patent-protection for the MagnetOs technology in the US, EU and other major markets. Patent applications for MagnetOs granules were filed in 2014 giving an expiry of 2034E (20 years patent from filing). Kuros now has granted patents in this family in US, Europe and Australia. Patent applications for MagnetOs putty were filed in 2016 giving an expiry of 2036E. As different formulations of MagnetOs are being developed, there is the potential for further filings.

4.5 Competitive Environment

There is a medical need for value-added products

Shortcomings of current bone graft substitute products: all bone graft products have various shortcomings depending on their type (cost, clinical efficacy, risk of disease transmission, etc.). We believe that surgeons may like, or dislike a given product based on several factors such as (1) clinical performance and added value for the procedure, (2) user-friendliness and efficiency of the procedure, and (3) "commercial considerations", e.g. price, bundling with other products, relationship with sales reps, easy availability on the shelf etc. Hence, we believe that any new product must provide an advantage over current products to be commercially successful; for a not much differentiated product the distribution power is a key factor.

MagnetOs is competing in the synthetics bone graft market

We expect MagnetOs to compete mainly with second-generation synthetic bone graft substitutes: at least in the initial phase - in the absence of substantial clinical evidence - we believe the company might face headwinds given the oligopolistic market structures with established hardware players and the common practice of product bundling. From a pricing perspective, MagnetOs will be "competitively" positioned against the highest priced synthetics to promote rapid adoption amongst price sensitive users and capitalize on MagnetOs key differentiation, the sub-micron surface topography. Below we highlight two of the leading second-generation synthetics, Vitoss and Actifuse, which we believe are most comparable to MagnetOs. Best-selling synthetic bone substitute have annual sales of CHF 100m or more; still, these products mostly lack evidence from clinical data.

Vitoss (Stryker) is currently the leading synthetic bone graft

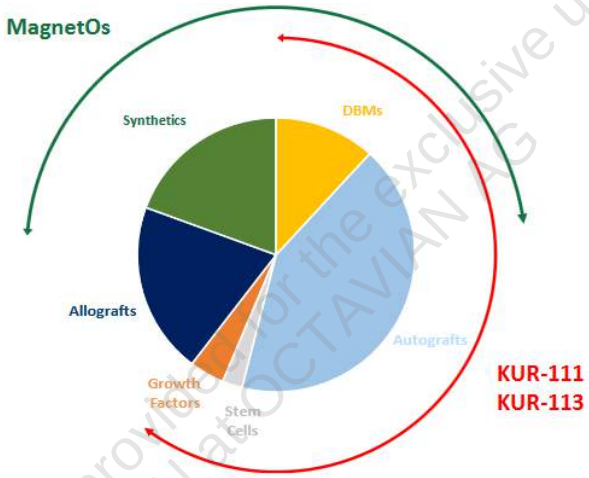
Stryker's Vitoss (developed by Orthovita, bought in 2011 by Stryker) is a highly porous beta tri-calcium phosphate bone graft, with clinical research demonstrating efficacy in a variety of anatomical locations. With over 375'000 implantations worldwide, Vitoss is well established as a leading synthetic bone graft. The product is available in a variety of forms, including moldable pack, malleable strip and morsels and containing bioactive glass. According to Stryker, Vitoss' open, interconnected structure designed to allow for 3D-bone regeneration; the product is up to 90% porous (cancellous bone ranges from 70-90%).

4.6 Complementary Product to KUR-113

MagnetOs will not directly compete with KUR-113 as they are positioned in different market segments

KUR-113 (Fibrin-PTH-orthobiologics) is complementary to MagnetOs: importantly, we expect the fibrin-PTH product to be positioned in different market segments than MagnetOs. KUR-113 will compete against other biologics bone growth products (e.g. Medtronic's Infuse, stem cell technologies), and might have some overlap with MagnetOs in the DBM market (demineralized bone matrix). For further details on KUR-113, please refer to chapter 5.

MagnetOs and KUR-113 are address different market segments:



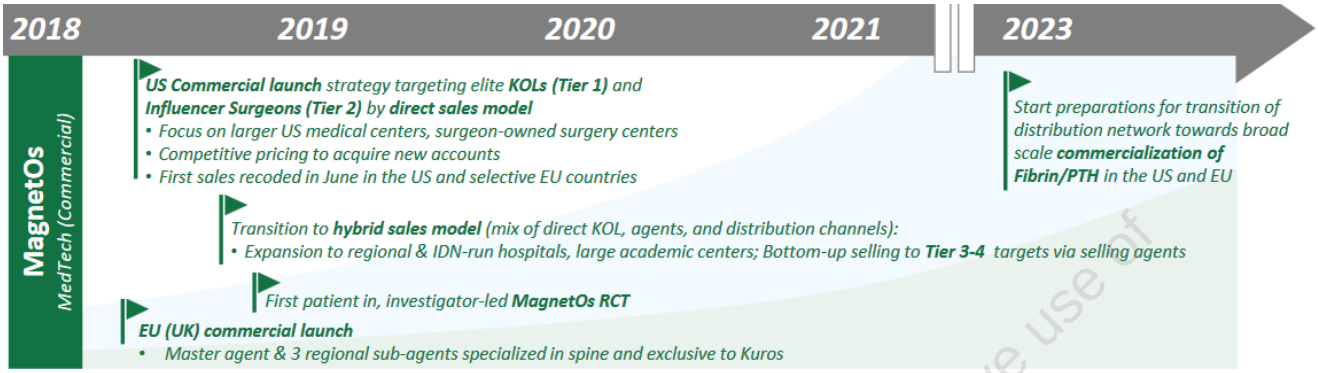
Source: Kuros

4.7 Commercial Potential

Product approval is based on preclinical data; clinical trials to show superiority to other substitutes and equivalence to autograft are underway

Launch into a crowded market, initial focus on the US market: as explained above, the degree of differentiation compared to other synthetic bone grafts has not been not shown yet in clinical studies. Still, on the back of strong product properties, Kuros has chosen a price positioning at a slight discount to the premium-priced second-generation synthetics. In Q2-18, commercial roll-out of MagnetOs was initiated, with an initial focus on the US, and a limited launch in key EU markets (so far launched in UK via distribution partner Axis Spine Ltd.). The sales approach builds on advocacy to KOL spine surgeons (key opinion leaders). Given the currently unproven level of differentiation against peers and Kuros' limited distribution power, we expect a moderate sales uptake over the next 2-3 years (OctE: CHF 0.6m (2018E), CHF 3.1m (2019E), CHF 7.4m (2020E).

Expected commercial milestones for MagnetOs:

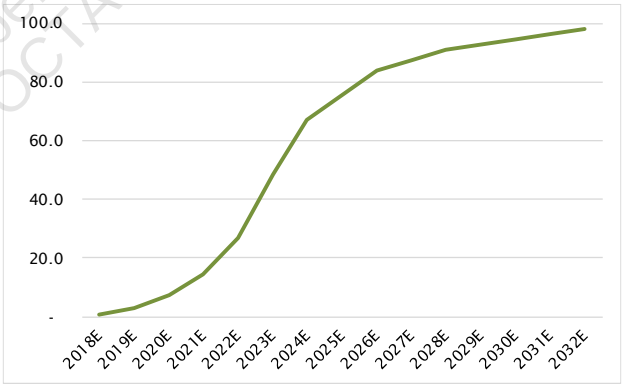


Source: Kuros company presentation, November 2018

We project global peak sales of CHF 100m for MagnetOs driven by strong product characteristics (comparable to autograft)

We expect sales growth to accelerate once benefit is proven in clinical trials: consequently, we believe that a substantial acceleration of sales could happen following (1) the completion of studies to prove the efficacy of MagnetOs in the clinical setting, and (2) the intended label expansion in the US (currently approved as a bone graft extender for posterolateral spinal fusion). A positive outcome is likely as MagnetOs has a unique bone-growth promoting surface and has shown equivalence to autograft in animal models. Assuming equivalence to autograft / superiority over other synthetics can be established in clinical trials and extension of the US label, we consider a market share of 12% in US and EU as reasonable in the longer term. This will result in **peak sales of CHF 100m, thereof ~80% in US, and ~20% in EU).** Otherwise, we see downside potential to our long-term sales forecasts (OctE: CHF 50-75m peak sales).

Projected MagnetOs sales development (US & EU/ROW), in CHF m:



Source: Octavian

We calculate a risk-adjusted NPV of CHF 68m for MagnetOs

Attractive margin potential; we project break-even in 2021E: we believe that the margin potential for MagnetOs is over 40% in the US assuming COGS of no more than 15% and operational synergies with KUR-113 in the longer run. In EU, we see a slightly lower margin potential (~30%).

We apply a probability adjustment in our NPV model: as our forecasts for MagnetOs are based on a positive outcome of the ongoing clinical trials (non-inferiority to autograft), we apply a probability-adjustment of 80% to our discounted cash flows (using a WACC of 14%).

The resulting rNPV is CHF 68m.

5 KUR-113: Orthobiologics Bone Graft Substitute

5.1 Summary

Biologics/device combination product

Est. launch date: 2025E

Peak sales: CHF 500m

rNPV: CHF 74m (30% risk-adjustment)

Innovative orthobiologics product with the potential for widespread use in spinal surgery: the fibrin-PTH product candidate KUR-113 is an innovative orthobiologics product for use in spinal fusion. The patent-protected technology incorporates an analog of the bone growth stimulator PTH (parathyroid hormone) into a fibrin matrix. The PTH analog contains the biologically active n-terminal fragment of the naturally occurring hormone also used in Eli Lilly's osteoporosis drug Forteo. KUR-113 is designed to promote bone healing in lumbar spinal fusion procedures and will be developed in combination with an intervertebral spacer (spinal cage).

Entering Phase II/pilot study in Q2-19E: the company plans to initiate a pilot/Phase II study (40-60 patients) in Q2-19E, with an interim read-out in mid 2020E. A larger-scale Phase III program (enrolling an estimated 300-400 patients) could be completed by 2024E, with market launch in 2025E.

CHF 500m peak sales potential: in our opinion, if KUR-113 can demonstrate clinical efficacy (equivalence to gold standard autograft) and a clean safety profile, it could become an alternative to other biologics such as Medtronic's InFuse/rhBMP-2, or a replacement of autograft. Hence, we believe there is a sizeable market opportunity for KUR-113 in the spine market, with peak sales of CHF 500m (2033E)

Technology base clinically validated: the fibrin-PTH formulation of KUR-113 and a similar, currently halted project (KUR-111), have previously completed phase II development in selected trauma indications (in total approximately 400 patients, in comparison to autograft, in tibial plateau and tibial shaft fractures, respectively). Hence, clinical proof-of-concept of the fibrin-PTH technology has been established in trauma.

Probability-adjusted NPV of CHF 74m

We calculate for KUR-113 a risk-adjusted NPV of CHF 74m (based on a success rate of 30%).

5.2 Lumbar Spinal Fusion

TLIF cage filled with KUR-113:

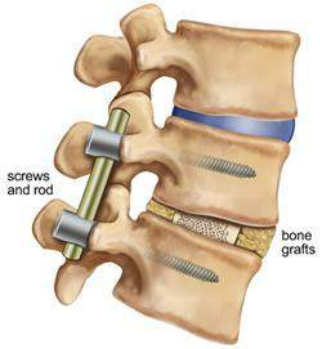
Source: Kuros

Bone grafting is required in spinal fusion procedures: the spine is a flexible structure composed of alternating blocks of bone (vertebrae) interspaced with blocks of cartilage-like tissue (discs). If the vertebrae or discs are causing pain, due to degeneration, trauma or instability, the surgeon can attempt to provide stability to the region by fusing two or more vertebrae, i.e. perform a spinal fusion. This surgical procedure includes the removal of the damaged disc, placement of an implant (often referred to as an inter-body cage) and promoting bone growth between the vertebrae using a bone graft or bone graft substitute. Options for bone grafts include using the patient's own bone (autograft), cadaver bone (allograft), a bone graft substitute or bone morphogenetic protein (BMP). Some may be used in combination with each other during the spine surgery.

The largest market for KUR-113 is in spinal surgery: 0.5m procedures p.a. in the US

Large market with 0.5m lumbar spinal fusions in US p.a.: in the US every year an estimated ~500'000 lumbar fusions are performed involving bone grafting; hence, we see a major commercial opportunity for a product such as KUR-113 assuming a clean safety profile and efficacy equivalent to gold standard autograft.

Schematic picture of TLIF:



There are different techniques for spinal fusion: a popular technique today is TLIF (transforaminal lumbar interbody fusion). Like PLIF (posterior lumbar interbody fusion), the approach is from the back but more from the side of the spinal canal and fuses adjacent vertebral bodies of the spine. A bone graft and interbody spacer stabilize the anterior portion while the posterior is locked in place with pedicle screws, rods and bone graft. The TLIF approach is generally less traumatic to the spine, safer for the nerves, and allows for minimal access and endoscopic techniques to be used for spinal fusion. Other approaches include ALIF (from the anterior side of the body, i.e. through the lower abdomen).

5.3 Product Description

Fibrin matrix containing a bone growth stimulator: KUR-113 consists of (1) a fibrin matrix to provide a structure and allow for the natural healing process to proceed, and (2) a covalently linked variant of PTH (TGplPTh1-34). During the healing process, as the patient's own cells penetrate the matrix, biologically active PTH1-34 is locally released. KUR-113 will be used in combination with a spinal cage (a hollow metal or polymer box-like structure) to be inserted between two vertebrae.

Easy-to-use formulation, well-suited for minimally-invasive techniques: KUR-113 is a gel-like formulation that is applied directly into and around an interbody spinal cage, where it polymerizes *in situ*. This approach is different to most products available today on the market, which are solids, granules or sponges. Preclinical studies with KUR-113 show that the combination of the natural healing matrix with the localized bone growth factor induces a response from the adjacent vertebrae, facilitating fusion through the cage. The product formulation makes KUR-113 well-suited for minimally-invasive surgical techniques.

Easy-to-use product formulation to address clinical needs in spinal fusion: strong efficacy and clean safety profile

Benefits versus current gold standard autograft and Infuse: KUR-113 is intended to be developed as an alternative to autograft or Medtronic's bone growth promoter Infuse (human recombinant BMP-2) by providing equivalent clinical efficacy with an improved safety profile. As we believe that the price of Infuse is perceived as (too) high by many surgeons, we believe KUR-113 will be positioned at a slightly lower price vs. Infuse (OctE: ASP of USD 6'000 per patient in the US). Other benefits include an easy-to-handle formulation (injectable, gel-like product) making KUR-113 well suited for minimally-invasive surgery.

5.4 Fibrin-PTH Technology

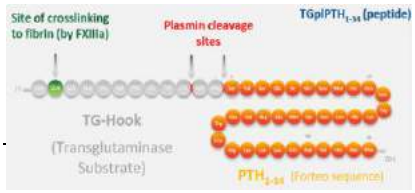
Controlled release of growth factor that is incorporated into a healing matrix

Technology de-risked and previously tested in randomized controlled trials in trauma: KUR-113 has been tested in a Phase II studies in open tibial shaft fractures. Moreover, KUR-111, which corresponds to KUR-113 mixed with HA/TCP (hydroxyapatite tri-calcium phosphate) granules as a structural ceramic component, has been extensively tested in Phase II in tibial plateau fractures. Both development projects in trauma are currently on hold due to the prioritization of KUR-113 in spine.

Fibrin sealant (delivery matrix):

Fibrin is a natural biomaterial used in clinical practice: fibrin is the main structural component of blood clots and is a key component in several approved medical device products (e.g. Baxter's Tisseel). Kuros has augmented fibrin's natural physical repair activity by covalently incorporating (i.e. chemically binding) the variants of the growth hormone PTH into the fibrin matrix. It is formulated in a syringe-type device and can easily applied as a gel that solidifies *in situ*.

TG hook technology:

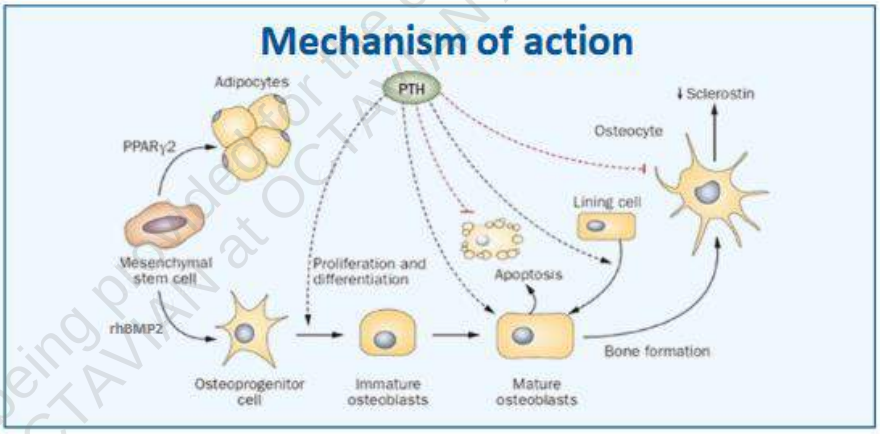


Source: Kuros

PTH is a biologic growth factors with an established safety profile as osteoporosis treatment: the biologic used in KUR-113 is a variant of naturally occurring PTH (parathyroid hormone). PTH is a growth factor that promotes tissue repair and helps to restore tissue function. PTH plays a key role in bone re-modelling and in the regulation of calcium-phosphate metabolism and has direct effects on osteoblasts; it enhances the number and the activation of osteoblasts through different pathways. The PTH signal cascade is distinct from other growth factors such as BMP (bone morphogenetic protein), TGF-β, etc.

Activation through gradual release, local action ensured through covalent linking to fibrin-matrix: the PTH variant is bound to the fibrin-matrix by a patented linker technology ("TG-Hook"). This linker is then cleaved at the site of implantation upon exposure to enzymes activated by the patient's cells which are involved in the natural healing process. The released biologics then stimulate cell proliferation to promote and/or accelerate healing.

PTH mechanism of action (activation of bone-forming cells):



Source: Kuros company presentation

PTH is the active ingredient of Eli Lilly's osteoporosis blockbuster Forteo

PTH is the active ingredient of Forteo: PTH was found to have osteoanabolic effects when administered intermittently. There is a large body of clinical data available on the use of a human PTH1-34 sequence (Teriparatide), which is active substance in Eli Lilly's approved injectable osteoporosis treatment Forteo. We note, Forteo carries a black box warning related to cases of osteosarcoma/bone cancer in rats; however, it is uncertain if Forteo is increasing the osteosarcoma risk in humans. The drug was approved in 2002 and generated blockbuster sales (USD 1.7bn) in 2017. We note, KUR-113 is a different product in a different application and will be applied locally (vs. systemic administration) with a controlled release over time.

5.5 Development Plan & Timelines

The company has prioritized the spinal fusion indication for KUR-113

Clinical development of fibrin-PTH for use in spinal fusion: after a strategic review and prioritization depending on an assessment of the commercial viability, the company has decided to focus its development efforts on the spinal fusion indication. KUR-113 must first show clinical proof-of-concept (Phase II/pilot study) in this indication. Of note, a large body of clinical data has already been established in trauma, however, as spine is a new indication and KUR-113 will be used in combination with a device, a separate program must be carried out.

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Initiation of Phase II pilot study in Q2-19E; interim read-out in mid 2020E

Phase II to start in Q2-19E, interim read-out in 2020E key value inflection point: preclinical testing is complete; the next step is a pilot/Phase II study in the US with an estimated 40-60 patients (first patient will be enrolled in Q2-19E) to establish efficacy data, before progressing into Phase III. The development will be done on a global basis (USA & EU); the company plans for an interim read-out of the Phase II study in mid 2020E, which will be a key value inflection point. Phase III is targeted to start in 2021E (preparation in parallel to the ongoing Phase II). 1-year endpoint data is expected in 2023E and regulatory submission in 2024E. Hence, we project a potential market launch in 2025E.

Assumed development plan & timelines for KUR-113 in spinal fusion:

IDE submission	Q1-19E
510(k) approval of TLIF cage	Q1-19E
First patient in Phase II/pilot study (40-60 patients)	Q2-19E
Interim read-out (1-year data on 50% of patients)	Mid 2020E
Start Phase III (300-400 patients)	H1-21E
Read-out of Phase III (1-year data)	2023E
Safety follow-up, regulatory submission	2024E
Approval, market launch	2025E

Source: Octavian, Kuros

Next milestone: 510(k) clearance of the Kuros TLIF cage (Q1-19E)

510(k) application for spinal cage submitted, approval in Q1-19E: In preparation for the upcoming clinical, Kuros has submitted a 510(k) application in October 2018 for its own cage (developed in house) to be used in combination with KUR-113. The cage was developed in-house and is intended for TLIF (transforaminal lumbar interbody fusion). The 510(k) submission is to obtain approval for use of the cage in spinal fusion by a posterior approach using autograft or allograft as a bone graft. We expect an answer by the FDA in early 2019E (90 days standard review time).

Submission & approval of IDE required prior to study initiation (Q2-19E)

IDE approval required before initiation of pilot/Phase II study: in parallel, Kuros will submit shortly an IDE (investigational device exemption) application to the FDA. Such application (and approval thereof) is required for a "significant risk device" study. Assuming approval of the IDE within due time (standard 30-days review time), the pilot study can be initiated in Q2-19E. Kuros anticipates enrolling 40-60 patients in the Phase II study to compare the use of KUR-113 to autograft, both in combination with the Kuros' cage.

Phase III with an estimated 300-400 patients could be completed by 2023E

Larger-scale Phase III study required for product approval: according to current plans, KUR-113 bone graft in combination with the Kuros TLIF cage will be compared to autograft in combination with the Kuros TLIF cage in a randomized (1:1) controlled, multicenter trial. The typical enrollment in Phase III trials in this setting is 300-400 patients, with a follow-up time of 1-year envisioned (for the primary endpoint) or up to 2-years (safety). Of note, the final development has not been agreed yet with the regulators in the US & EU. This assessment is based on regulatory pathways seen with other, similar orthobiologics drugs. We note, the initial approval and label will be for use with the Kuros TLIF cage (as was the case for the Infuse/LT cage from Medtronic).

We project aggregated CHF 38m R&D cost for Phase II & III of KUR-113

Substantial R&D investment required for Phase II & III development: according to the company, the Phase II program for KUR-113 in lumbar spinal fusion will incur study cost of ~CHF 5m (based on an estimated number of 40-60 patients). For the larger Phase III program (based on an estimated 300-400 patients), the company expects ~CHF 25m study cost;

hence, the total development cost will be at least CHF 30m for the spinal fusion indication (OctE: CHF 38m until approval in the US & EU).

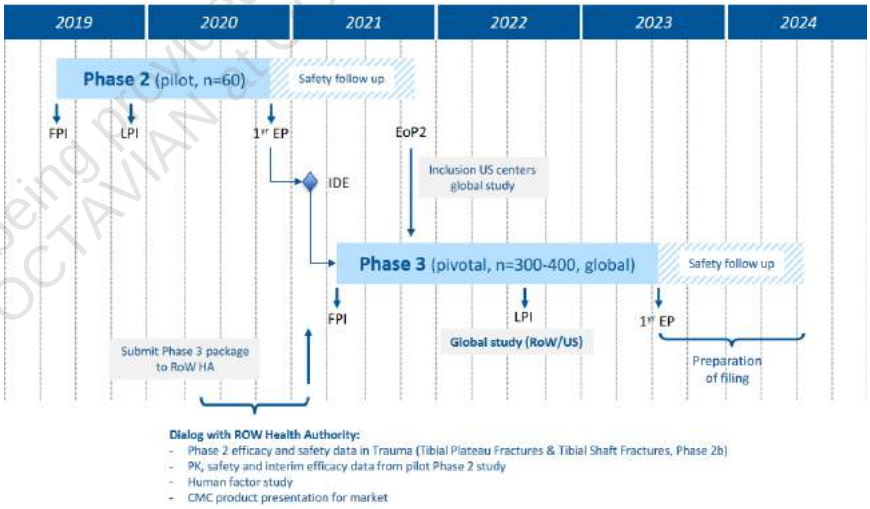
To fund the Phase II study of KUR-113 until the next value inflection point (interim data in mid 2020E), Kuros has recently raised CHF 16m of cash

Funding of clinical development: Kuros has recently secured CHF 16.1m funding (gross proceeds) through a capital increase. In our opinion this should extend the cash reach into 2020E. Next inflection point is the interim read-out (data on the first half of enrolled patients) expected for mid 2020E. In sum, we expect that approximately CHF 45m total funding is required to develop KUR-113 from today through approval and to break-even. Assuming a positive read-out and decision to go-ahead with a large-scale Phase III program, we expect another funding event to raise an additional CHF 25-30m of cash in 2020E (OctE: CHF 29m capital increase included in our model; this assumes no other liquidity events such as the sale of Neuroseal, milestone income etc.).

Product sourcing has been completed

Fibrin-PTH product sourcing completed for Phase II: Kuros has re-designed the components that were previously provided by Baxter. This involved (1) the sourcing of new plastic components, and (2) the sourcing of the active drug substance (PTH) from a Switzerland-based supplier. A new state-of-the-art process was developed to produce the PTH peptide; the new process leads to a peptide with high purity and excellent yield. We understand that a first GMP batch has successfully been produced for the upcoming phase II/pilot trial and stability testing (6 months) has been completed and related costs have already been booked. Also, the company is on schedule for material availability for the Phase III trial.

Parallel staggered Phase II and III program envisioned:



Source: Kuros company presentation, November 2018. Note: anticipated Phase II clinical milestones may be subject to change following further regulatory discussions

5.6 Regulatory Framework

Drug/device combination; PMA (premarket approval) the likely route to market

Use in combination with a spinal cage, PMA the likely regulatory pathway: KUR-113 is intended to be used in combination with a hardware product (lumbar intervertebral spacer, "cage"). Of note, the final development plan is not fully certain yet as the company is still in discussions with the regulators. KUR-113 combines a medical device, a biologic (fibrin) and a drug (PTH). Feasible pathways in the US include a PMA (premarket approval; for Class III medical devices), or an IND (investigational new drug application, the classic "drug pathway"). Given the IND process is lengthier and more expensive as compared to a PMA, the latter would be the more favorable route.

Comparable products have been approved via the PMA pathway

Other, similar "biologics" products have been approved via a PMA: it is common practice that the primary mode-of-action of a product determines which center at the FDA takes the lead. Several bone graft products that are similar in composition, mode of action and use orthopedic indications have been assigned to the CDRH (the FDA's Center for Devices and Radiological Health) as the lead center and have been reviewed via the PMA pathway. This includes the five approved biologics bone graft substitutes Infuse/rhBMP-2 (Medtronic), OP-1 (Stryker), Augment/rhPDGF (Wright Medical), GEM 21 S/rhPDGF (Lynch Biologics), and i-Factor (Cerapedics). Hence, we see a high likelihood that a PMA regulatory pathway can be used for development of KUR-113. As a background, PMA is the most stringent type of medical device marketing application, requiring large-scale clinical trials to establish efficacy and safety of a device. FDA regulations provide 180 days to review the PMA for a determination if the device gets approval; however, the review time can take longer. Also, the FDA advisory committee may decide to review the PMA at a public committee meeting.

Approximately 300-400 patients have been included in pivotal trials

Examples of approvals of other orthobiologics bone graft products: several other device-biologic/drug combination products for orthopedic indications for the fusion of bones are regulated as devices and approved via the PMA pathway, usually with approximately 300-400 patients in the pivotal trial. As an example, Infuse was approved in 2002 via the PMA route as a combination product consisting of the Infuse Bone Graft/LT-Cage lumbar tampered Fusion device which are cross-labelled. Since then, several labels have been approved (PMA number P000058). In 2014 the FDA approved Cerapedic's i-Factor putty. Approval was based on a 319-patient IDE pivotal study comparing i-Factor to autologous bone in patients with degenerative cervical disc disease (single-level instrumented anterior discectomy and fusion procedure). Also, Wright Medical's Augment (indicated for certain surgeries of the feet) was FDA approved based on a 414-patient study.

Post-marketing label extensions to broaden the indication and enable use with other spinal cages

Label extension envisioned post-approval: Kuros currently anticipates having the initial label with the Kuros TLIF cage; this label could subsequently be extended to include other types of cages. As an example, although Infuse had been approved initially only for the use with one cage using an anterior approach, many procedures made by surgeons were with other cages using different approaches (off-label use). Meanwhile, Medtronic has added additional cages (PEEK and titanium) under the same PMA (P000058 and subsequent applications).

5.7 Clinical & Preclinical Data of Fibrin-PTH

5.7.1 Clinical data with KUR-111 and KUR-113 in trauma

Technology is de-risked and has been clinically validated in two trauma indications

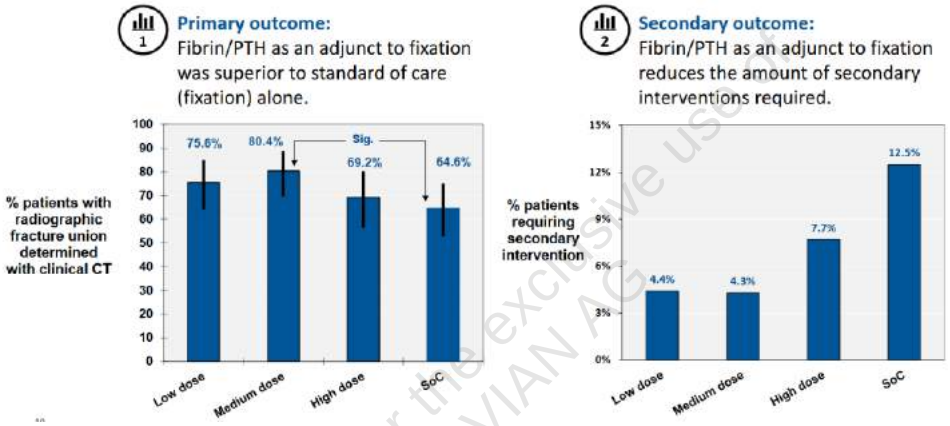
Clinical proof-of-concept of fibrin-PTH was established in trauma indications: until recently, KUR-113 was intended to be developed as an adjunct to standard of care in the treatment of open tibial shaft fractures. Moreover, the fibrin-PTH product KUR-111 (which in addition contains HA/TCP granules to provide mechanical stability) was compared to autograft in tibial plateau fractures. While the outcome of the Phase II trials was positive, the fact that fibrin-PTH was used in different indications allows for a limited cross-read to KUR-113 in spinal fusion. Below we present the clinical evidence which was gathered so far in trauma.

Clinical studies (Phase II) involving ~400 patients have been completed

Positive Phase II study of KUR-113 in trauma patients: the efficacy and safety of KUR-113 compared to standard of care (fixation with hardware) was established in a randomized, controlled, open-label dose finding Phase II study involving ~200 patients with acute open tibial shaft fractures (in 31 centers in EU). Three different concentrations of KUR-113 in combination with standard of care (SOC) were compared with SOC alone. The outcome was positive and demonstrated same or better healing than SOC: the healing rate at 6 months after surgery, as assessed by the investigators using radiographic and clinical criteria, was 65% for patients treated with

SOC alone versus 76%, 80%, and 69% for the 0.133, 0.4 and 1.0 mg/ml KUR-113 groups respectively. The 0.4 mg/ml group had significantly better healing than the SOC alone group. The Phase II data also showed that the addition of KUR-113 was able to lower the number of secondary interventions.

Phase II trial results summary of fibrin-PTH (KUR-113) in open tibial shaft fractures (after 6 months):



Source: Kuros. Note: fibrin-PTH is an investigational drug and has not been approved for this indication

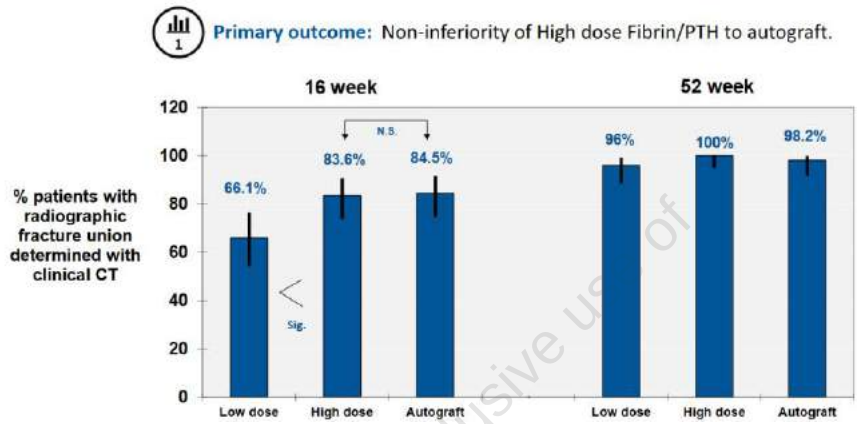
Phase IIb (183 patients) study completed to compare fibrin-PTH (KUR-111) to gold standard autograft

Preclinical and clinical studies performed by Kuros with KUR-111: like KUR-113, KUR-111 was tested in a randomized controlled trial (RCTs) preceded by a small Phase IIa study (in distal radius fractures), which was an open-label, single arm, 10-patient safety study. Fractures in all patients treated in the study healed successfully, and no safety issues were observed. The larger Phase IIb study (in tibial plateau fractures) was a randomized, controlled, open-label (dose-blinded), dose-finding study involving 183 patients at 30 canters in EU & Australia. The data showed a similar efficacy as autograft (non-inferiority) and was found to be safe and well tolerated. The end of Phase II meeting with the FDA was held. The Phase IIb study included a high concentration (1.0 mg/mL) and low concentration (0.4 mg/mL) of KUR-111. The primary endpoint was radiological healing at 16 weeks. Secondary endpoints included measuring radiographic healing, clinical healing, and maintenance of reduction at both earlier (6 and 12 weeks) and later (6, 12 and 24 months) time points. A 15% non-inferiority margin was used.

Non-inferiority was shown for the higher-concentration arm, good safety profile

Primary endpoint was reached for the high-concentration fibrin-PTH bone graft material: at week 16, 84% of autograft-treated patients and 84% of patients treated with the higher concentration KUR-111 had radiological fracture healing (defined by an independent radiology panel using CT Scans at 16 weeks post-surgery). Moreover, the study showed a PTH concentration dependency; a substantial difference was observed between the two concentrations of PTH tested in this study, with the higher concentration giving the higher efficacy (p value = 0.033). Secondary endpoints related to efficacy were consistent with the primary endpoint. E.g. a composite endpoint of CT scan and clinical healing gave 72% for the higher concentration of KUR-111 and 64% for autograft. There were no indications of any safety issues. Preclinical and clinical findings so far suggest that from a safety standpoint, no ectopic bone formation has been observed. The material was re-absorbed over time, avoiding long-term safety concerns.

Phase IIb Study of KUR-111: high concentration showed non-inferiority versus autograft:



Source: Kuros

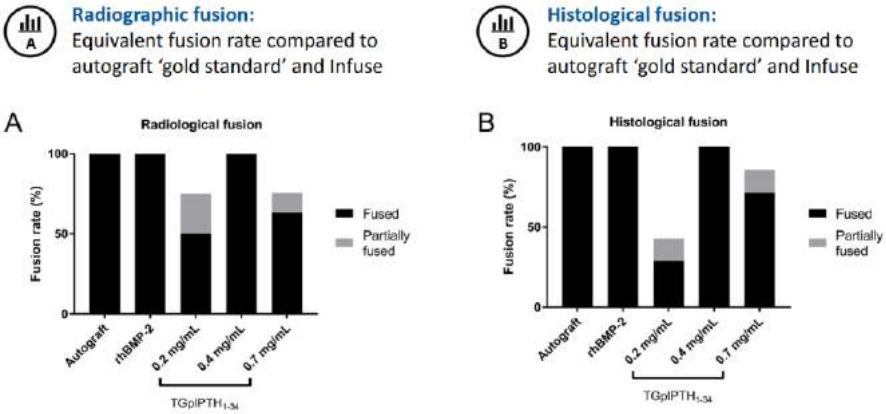
Note: fibrin-PTH is an investigational drug and has not been approved for this indication

5.7.2 Preclinical data with KUR-113 in spinal fusion

Preclinical data shows potential in spinal fusion

Preclinical results of a sheep study: Kuros has conducted a 4 and 10 months ovine lumbar interbody fusion study. Skeletally mature sheep received Instrumented TLIF at L3-4 and L5-6 (same treatment groups). KUR-113 was pre-filled inside PEEK cage only. In each group, 8 sheep were treated (autograft, Infuse, low-concentration (0.2mg/ml) fibrin-PTH, medium-concentration (0.4mg/ml) fibrin-PTH, or high-concentration (0.7mg/ml) fibrin-PTH), with a follow-up at 4 months. In the 10 months study arm, 8 sheep were treated for each sample (Autograft, Infuse, medium-concentration (0.4mg/ml) fibrin-PTH). The data showed that 0.4mg/ml was the optimal concentration. Fusion occurred at 4 months and further consolidated through 10 months. Equivalence was shown for the medium-concentration (0.4mg/ml) to autograft gold standard and Infuse.

Animal (sheep) study of KUR-113 fusion outcomes (4 months):



Source: Kuros

5.8 Competitive Positioning

Fragmented market with different technologies available; we see a clinical need for a safe and easy-to-use orthobiologics with reasonable pricing

Easier-to-use alternative to Infuse with lower price tag: based on feedback from physicians, we understand that the fibrin-PTH technology is quite unique and could potentially become an exciting treatment alternative to current mainstays of treatment (autograft, Infuse/rhBMP-2), which work well but have several drawbacks. KUR-113 is designed as an easy to

handle gel-like matrix to be filled into a cage for subsequent insertion into the spine. For Infuse, the active substance (freeze-dried BMP-2, a powder) is to be applied onto a collagen sponge before use, which is not very convenient to perform in the operating room. We assume that clinical usage will not only be driven by clinical performance, but also by pricing considerations, with a lower price point vs. Infuse to support a widespread use.

Medtronic's InFuse has USD ~0.5bn sales p.a. (peak sales USD 0.9bn incl. off-label use)

PTH could potentially be regarded as a safer alternative to Infuse: Infuse/rhBMP-2, approved by the FDA in 2002, had peak sales of close to CHF 0.9bn in 2011; sales subsequently declined as more evidence built up around the potential danger of off-label usage (the FDA issued a safety notice that Infuse may be linked to life-threatening complications when used without approval in cervical spinal fusion), and concerns regarding an increased cancer risk that have been discussed in the literature. Annual sales finally stabilized around USD 0.5bn, which makes Infuse still the leading bone graft substitute product in terms of sales. We believe that PTH is regarded as a less potent bone growth stimulator than BMP-2, which could be favorable given the safety concerns related to the use of Infuse.

Differentiated profile to conventional bone graft substitutes: unlike many other "non-biologics" bone graft substitutes (i.e. without active ingredients such as bone morphogenic proteins) that are on the market, KUR-113 will be tested in large controlled clinical studies in spinal fusion. Hence, its efficacy and safety will be tested in well-controlled clinical studies which will allow for a price-premium compared to conventional synthetic bone grafts. Once approved in the intended indication, we believe there is a likelihood that KUR-113 could be used off-label. Possibly, Kuros could aim to develop KUR-113 for additional indications, e.g. trauma.

Overview orthobiologics products (in various indications):

Product (Company)	Active ingredient & application	Approved Indication, Reg. Pathway	Status Comments
Infuse Inductos (EU) (Medtronic)	rhBMP-2 (human recombinant bone morphogenetic protein 2) applied to an absorbable collagen sponge carrier	Spinal fusion Tibia fractures Sinus augmentation PMA	Highly osteoinductive (induces mesenchymal stem cell & osteoprogenitor cell differentiation into osteoblasts) 2002 initial approval for ALIF. Today approved for use with a variety of cages and surgical techniques
I-Factor (Cerapedics)	Synthetic small peptide (P-15) found in type 1 collagen, combined with inorganic bone material; is not a morphogen (growth factor)	Anterior cervical discectomy and fusion (ACDF) procedures PMA	2015 FDA approved; no panel meeting. 319 patients in pivotal study
Augment (Wright Medical)	rhPDGF-BB human platelet-derived growth factor B; bioresorbable synthetic bone matrix (beta-tricalcium phosphate)	Ankle and hindfoot arthrodesis PMA	FDA approved in 2014. Device/drug combination. Pivotal study included 414 patients
OP-1 (Olympus, formerly Stryker)	rhBMP-7 (bone morphogenetic protein 7) applied to bovine collagen carrier & carboxymethylcellulose, forms a putty	Indications in spinal fusion (posterolateral) & long-bone non-unions HDE*	*Approved in 2004 as a "humanitarian use device". In 2010 sold to Olympus for USD 60m after a string of lawsuits against Stryker illegally promoting off-label use. Discontinued in 2014
GEM 21S (Lynch Biolog.)	rhPDGF-BB (platelet-derived growth factor), synthetic calcium phosphate matrix	Dental (periodontal defects)	FDA approved in 2005, based on a 180-patient study

Source: Octavian, company websites, FDA

5.9 Intellectual Property

Fibrin-PTH is patent-protected, we include exclusivity until 2034E in our model

Fibrin-PTH has strong patent protection: there is an extensive patent estate around Fibrin-PTH, including patents covering (1) the base technology, (2) specific formulations and uses, (3) the use in specific indications, and (4) the kit design. There are granted patents in the EU and US and there are published applications which - if granted - would extend coverage to 2031E. Moreover, there are yet to be published applications that if granted will extend to 2039E at least. In our financial model, we include patent protection until 2034E; our NPV forecast horizon (until 2035E) covers the exclusivity period.

Protection of market exclusivity beyond IP expiry: as fibrin-PTH is a medicinal product, there is the possibility to get Patent Term Restoration (in the US) or a Supplementary Protection Certificate (in EU). Both give the potential to extend the patent life of one patent in the associated jurisdiction and that is in force at the time of product approval for a further 5 years past its normal expiry. Thus, there is the potential for an additional 5 years of patent protection in both the US and EU. Also, there is data exclusivity of 7 years in US and 10 years in EU following approval. Thus, no generic could use the data filed with regulatory bodies (to demonstrate comparability) prior to the expiry of these time periods.

5.10 Commercial Potential

We forecast US & EU market launch of KUR-113 in 2025E and project peak sales of CHF 500m (2033E)

We project peak sales of CHF 500m: we assume an ASP per kit of USD 3'000 in USA and EUR 1'500 in EU at time of launch, and on average 2 kits per patient. We consider this price point as rather conservative. Assuming a peak market share of 10% of patients in the US & EU/ROW, we project KUR-113 to generate peak sales of CHF 500m (2033E) in spinal fusion.

High profitability expected: We believe that the EBIT margin potential for KUR-113 is over 40% in the US assuming COGS of 10% of sales and operational synergies with MagnetOs. In EU, we see a lower margin potential (~40%) assuming higher COGS per unit (lower ASP compared to USA) and a distributor sales strategy in EU.

Clear focus on orthobiologics and on clinical data, but market is highly competitive

Oligopolistic and highly competitive market structures: today, most orthobiologics products are being distributed by large orthopedic hardware companies. The sales process is being driven by hardware (cages, screws, joint replacement implants, etc.), and the sales forces are not specifically set-up for the scientific and medical sale of sophisticated biologics. Consequently, Kuros sees the opportunity to differentiate itself in the commercial process using a focused, evidence-based sales process with a strong focus on science and clinical efficacy data; however, we also note that product bundling (e.g. bundling of hardware with orthobiologics) which is common in the orthopedic and spine market places could be challenging to overcome. Three major players – Medtronic, DePuy Synthes, and Stryker – dominate the global space due to their far-reaching distribution networks and established presence in spinal fusion and trauma fixation.

We calculate a risk-adjusted NPV of CHF 74m for KUR-113

We apply a probability adjustment in our NPV model: considering the development status and amount of data available to date, we have chosen a probability adjustment of 30% for KUR-113 in spinal fusion. We apply the risk-adjustment to our discounted cash flow estimates 2018E to 2035E (WACC of 14%). Next milestones will the IDE filing and the initiation of the Phase II study in the US.

The resulting rNPV is 74m (using a WACC of 14%).

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6 Company Financials

Lean company structure, in early commercial-stage, upcoming R&D investments for KUR-113

Our financial projections are based on a direct/hybrid commercialization model in the US, which at a later stage could offer synergies between MagnetOs and KUR-113 given the overlapping target markets in spine (same physician base). Kuros plans to gradually build-up a small commercial team in the US, consisting mostly of product specialists, and to work with selected distributors in defined markets in the EU and ROW (Australia). In our projections we do not include any further activities (R&D, commercial) for Neuroseal, nor any potential future milestone payments from Checkmate.

First MagnetOs product sales in 2018E

Modest initial product sales from MagnetOs: MagnetOs is the near-term revenue driver. For 2018E we project product sales of CHF 0.6m (mostly generated in Q4-18E), bringing total revenues to CHF 0.9m. We forecast a gradual step-up to CHF 3.1m (2019E) and CHF 7.4m (2020E). We expect a more substantial acceleration of sales growth following the completion of clinical trials (starting in H2-19E).

SG&A spending under control despite the set-up of the US commercial infrastructure

SG&A costs under control despite commercial set-up in the US: for 2018E, we expect SG&A costs of CHF 8.5m, which is substantially below the high CHF 15.5m reported in 2017. The reason for the decline is the restructuring of the Swiss operation and the associated cost savings on headcount (mostly former members of the management team that were highly compensated). We project SG&A cost to amount to CHF 8.0m in 2019E and to CHF 10.0m in 2020E assuming a relatively lean company set-up (small dedicated sales force in the US, distributors in select EU markets).

R&D cost to increase due to KUR-113 clinical program initiation

R&D costs reflect the initiation of the clinical program for KUR-113 in spine: we expect R&D costs to increase from CHF 6.0m in 2018E and 2019E to CHF 8.0m in 2020E. The bulk of R&D is attributable to Phase II and Phase III studies for KUR-113 (OctE: in total CHF 38m for KUR-113 until approval/launch in 2025E), while R&D spending for MagnetOs is modest (most clinical trials are investigator-led).

We expect an operating loss of ~CHF 12m p.a. for the next three years

We have accounted for additional financing in our projections (capital inflows totaling CHF 45m from 2018E to 2020E): because of the increasing R&D cost (KUR-113) and the investment to commercialize MagnetOs, we project an operating loss of ~CHF 12m p.a. for 2018E to 2020E, and free cash flow of approximately CHF -12m on average p.a. We project MagnetOs to reach break-even by 2021E; however, due to the R&D investments for KUR-113, we believe the company will not become profitable before 2023E. We assume an underlying tax rate of 14%.

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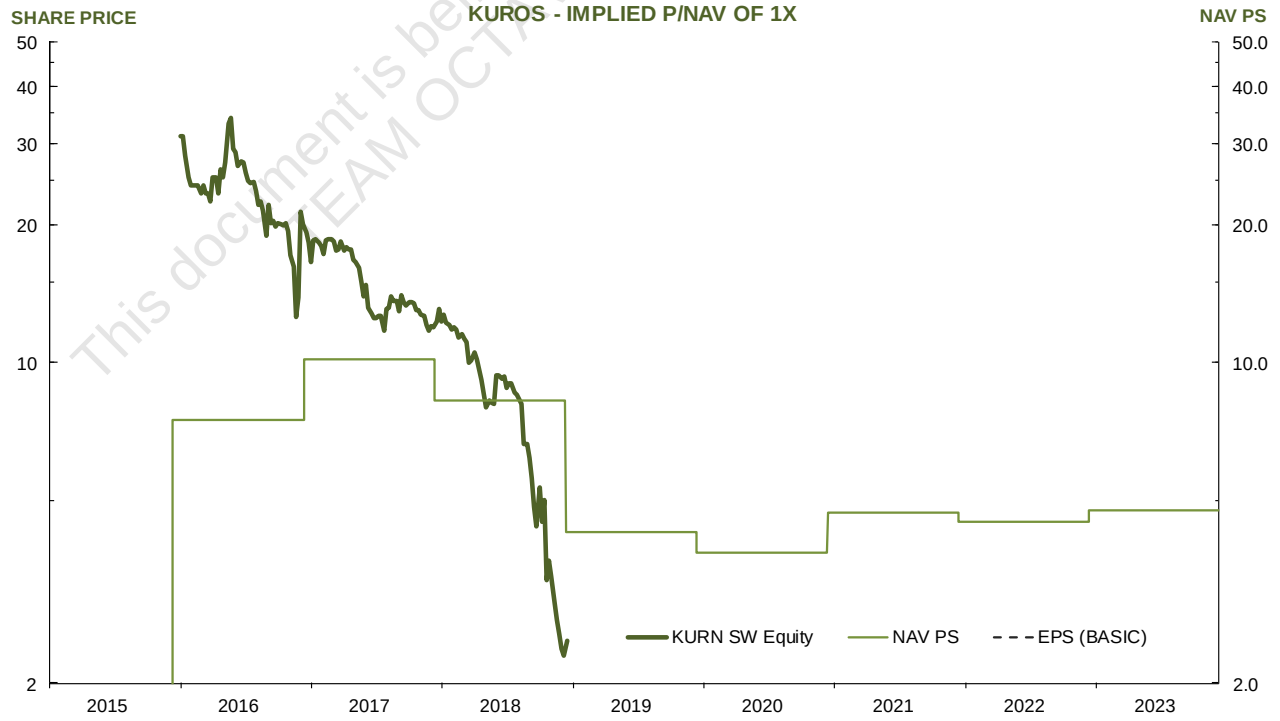
KUROS - KEY FIGURES

	CHF M		REGISTERED SHARES
MARKET CAPITALISATION	37.0	PRICE ON JANUARY 9, 2019	2.46
ENTERPRISE VALUE	27.4	PRICE TARGET	7.0
TOTAL REVENUES 2018E	0.9	RECOMMENDATION	BUY
NET PROFIT/(LOSS) 2018E	-11.0	DIVIDEND YIELD 2018E	0.0
EPS CAGR 2018E-20E (%)	NM	PAR VALUE IN CHF	1.00
SHAREHOLDERS' EQUITY 2018E	76.1	NUMBER OF SHARES IN M	15.06
NET LIQUID FUNDS (END H1-18)	9.7	FREE FLOAT	77%
ACCOUNTING STANDARDS	IFRS	MAJOR SHAREHOLDERS:	
NEXT EVENT: 2018 REPORT	NA	Incubation BV/Aldabra BV	17%
		Life Sciences Partners	7%

RATIOS			2018E	2019E	2020E
P/E			NM	NM	NM
P/S			41.3	12.1	5.0
P/NAV			0.3	0.6	0.6
EV/EBITDA			NM	NM	NM
PER SHARE DATA (CHF)	**2016**	**2017**	**2018E**	**2019E**	**2020E**
EPS (BASIC)	-3.95	-2.32	-1.21	-0.76	-0.57
CHANGE IN %	*NM*	*-41%*	*-48%*	*-37%*	*-25%*
EPS (DILUTED)	-3.95	-2.32	-1.21	-0.76	-0.57
CHANGE IN %	*NM*	*-41%*	*-48%*	*-37%*	*-25%*
DIVIDEND	0.00	0.00	0.00	0.00	0.00
PAYOUT IN %	*0%*	*0%*	*0%*	*0%*	*0%*
NET ASSET VALUE	7.51	10.17	8.27	4.26	3.85
- CHANGE IN %		*35%*	*-19%*	*-48%*	*-10%*
NO. OF SHARES AT YEAR-END (BASIC)*	5.08	8.17	15.06	15.06	26.66
- CHANGE IN %		*61%*	*84%*	*0%*	*77%*
NO. OF SHARES AT YEAR END (DILUTED)	5.08	8.27	15.16	15.16	26.76
AVERAGE NO. OF SHARES (BASIC)	5.00	7.09	9.10	15.06	20.86
AVERAGE NO. OF SHARES (DILUTED)	5.10	7.19	9.20	15.16	20.96

SOURCE: OCTAVIAN

*CHF 16M RAISED IN Q4-18 (6.5M NEW SHARES @ CHF 2.50). ASSUMES CAPITAL INCREASE IN 2020E (CHF 29M) AT CURRENT SHARE PRICE LEVELS.



OCTAVIAN

INCOME STATEMENT (CHF m)	2016	H1	H2	2017	H1	H2E	2018E	2019E	2020E
MagnetOS revenues	0.0	0.0	0.0	0.0	0.0	0.6	0.6	3.1	7.4
KUR-113 revenues	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Revenues from collaborations	1.1	0.5	0.0	0.5	0.2	0.0	0.2	0.0	0.0
TOTAL REVENUES	**1.1**	**0.5**	**0.0**	**0.5**	**0.3**	**0.6**	**0.9**	**3.1**	**7.4**
- CHANGE IN %	*-83%*			*-50%*	*-49%*	*NA*	*68%*	*243%*	*140%*
COGS	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.6	1.3
- IN % OF REVENUES	*0%*	*0%*	*NM*	*0%*	*6%*	*19%*	*15%*	*19%*	*18%*
GROSS PROFIT	**1.1**	**0.5**	**0.0**	**0.5**	**0.3**	**0.5**	**0.8**	**2.5**	**6.1**
- IN % OF REVENUES	***100%***	***100%***	***NM***	***100%***	***94%***	***81%***	***85%***	***81%***	***82%***
R&D	7.9	2.2	2.3	4.5	3.1	2.9	6.0	6.0	8.0
- CHANGE IN %	*629%*	*-58%*	*-16%*	*-43%*	*38%*	*30%*	*34%*	*0%*	*33%*
SG&A	17.1	6.8	8.5	15.2	4.1	4.4	8.5	8.0	10.0
- CHANGE IN %	*133%*	*-39%*	*41%*	*-11%*	*-39%*	*-48%*	*-44%*	*-6%*	*25%*
OTHER INCOME	2.6	1.5	1.4	2.9	1.1	0.7	1.8	0.0	0.0
TOTAL OPERATING COST	**22.4**	**7.5**	**9.3**	**16.8**	**6.1**	**6.8**	**12.8**	**14.6**	**19.3**
- CHANGE IN %	*NM*	*-51%*	*28%*	*-25%*	*-19%*	*-27%*	*-24%*	*14%*	*32%*
EBITDA	**-20.5**	**-6.4**	**-8.7**	**-15.1**	**-5.0**	**-5.4**	**-10.4**	**-10.0**	**-10.2**
DEPRECIATION	0.8	0.5	0.6	1.1	0.7	0.8	1.5	1.3	1.4
AMORTIZATION	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3
EBIT	**-21.3**	**-6.9**	**-9.3**	**-16.2**	**-5.8**	**-6.1**	**-11.9**	**-11.5**	**-11.9**
- CHANGE IN %	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*
- EBIT MARGIN	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*
NET FINANCIAL RESULT	1.1	-0.2	-0.1	-0.4	0.0	0.0	0.0	0.0	0.0
INCOME BEFORE TAXES	**-20.3**	**-7.2**	**-9.4**	**-16.6**	**-5.8**	**-6.1**	**-11.9**	**-11.5**	**-11.9**
TAX	-0.5	-0.2	0.1	-0.1	-0.5	-0.4	-0.9	0.0	0.0
- TAX RATE IN %	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*
NET PROFIT/(LOSS)	**-19.7**	**-7.0**	**-9.5**	**-16.5**	**-5.2**	**-5.8**	**-11.0**	**-11.5**	**-11.9**
- CHANGE IN %	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*
- IN % OF SALES	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*
BASIC EPS	-3.95	-1.11	-1.21	-2.32	-0.63	-0.58	-1.21	-0.76	-0.57
DILUTED EPS	-3.95	-1.11	-1.21	-2.32	-0.63	-0.58	-1.21	-0.76	-0.57
WEIGHTED AVG NO. OF SHARES*	5.00	6.27	7.91	7.09	8.30	9.89	9.10	15.06	20.86
NO. OF SHARES END OF PERIOD*	5.08	6.27	8.17	8.17	8.60	15.06	15.06	15.06	26.66

Initiation of Phase II pilot study for KUR-113 (Q2-19E)

Cost savings on personnel cost (restructuring); slightly rising S&M cost in the US, solid cost control

BALANCE SHEET (CHF M)	2016	H1	H2	2017	H1	H2E	2018E	2019E	2020E
PPE	0.0			0.6	0.6		-0.4	-1.1	-1.7
INTANGIBLE ASSETS	6.6			33.2	33.0		33.8	33.9	34.0
GOODWILL	23.7			34.5	34.5		34.5	34.5	34.5
TOTAL NON-CURRENT ASSETS	**30.4**			**68.4**	**68.1**		**68.0**	**67.4**	**66.8**
CASH & CASH EQUIVALENTS	12.4			16.7	9.7		19.4	7.9	23.4
TOTAL CURRENT ASSETS	**13.4**			**17.7**	**10.9**		**21.0**	**10.6**	**28.0**
NET LIQUID FUNDS	**12.4**			**16.7**	**9.7**		**19.4**	**7.9**	**23.4**
TOTAL ASSETS	**43.8**			**86.1**	**79.0**		**89.0**	**78.0**	**94.9**
PENSION LIABILITY	2.2			1.7	1.2		1.8	1.9	2.0
DEFERRED TAX LIABILITY	0.0			6.6	6.1		6.6	6.6	6.6
TOTAL NON-CURRENT LIABILITIES	**2.2**			**8.3**	**7.3**		**8.4**	**8.5**	**8.6**
TRADE ACCOUNTS PAYABLE	1.3			1.3	0.9		1.2	1.7	2.4
OTHER CURRENT LIABILITIES	0.0			0.0	0.0		0.0	0.0	0.0
ACCRUED EXPENSES	2.0			1.7	1.1		1.7	1.7	1.7
PROVISIONS	0.0			1.7	0.9		1.7	1.7	1.7
TOTAL CURRENT LIABILITIES	**3.3**			**4.7**	**3.0**		**4.5**	**5.0**	**5.7**
SHAREHOLDERS' EQUITY	**38.3**			**73.1**	**68.7**		**76.1**	**64.6**	**80.7**
- CHANGE IN %	*267%*			*91%*	*-6%*		*4%*	*-15%*	*25%*
- RETURN ON EQUITY	*NM*			*NM*	*NM*		*NM*	*NM*	*NM*
TOTAL EQUITY & LIABILITIES	**43.8**			**86.1**	**79.0**		**89.0**	**78.1**	**94.9**
NO. OF EMPLOYEES	16			28	35		28	30	35
- thereof sales force FTEs							2	4	9

CHF 16.1m equity funding (Dec 18)

CASH FLOW (CHF M)	2016	H1	H2	2017	H1	H2E	2018E	2019E	2020E
NET PROFIT / (LOSS)	-19.7	-7.2	-9.3	-16.5	-5.2	-5.8	-11.0	-11.5	-11.9
+ DEPRECIATION & AMORTIZATION	0.8	0.5	0.6	1.1	0.7	0.8	1.5	1.5	1.7
+ OTHER NON-CASH ITEMS/impairment	2.1	1.5	2.0	3.5	-1.9	0.0	-1.9	0.0	0.0
+ NET CHANGE IN WORKING CAPITAL	-0.5	0.0	-0.5	-0.5	-0.3	-0.6	-0.9	-0.7	-1.2
+ OTHER (change pension provisions)	8.5	0.0	2.0	2.0	0.0	0.1	0.1	0.1	0.1
OPERATING CASH FLOW	**-8.9**	**-5.1**	**-5.1**	**-10.3**	**-6.7**	**-5.5**	**-12.3**	**-10.7**	**-11.3**
- CAPITAL EXPENDITURE (net)	0.1	0.2	0.3	0.5	0.0	0.5	0.5	0.6	0.8
- INVESTMENTS INT. ASSETS	0.0	0.0	1.0	1.0	0.6	0.0	0.6	0.3	0.4
FREE CASH FLOW	**-8.9**	**-5.4**	**-6.4**	**-11.8**	**-7.4**	**-6.0**	**-13.4**	**-11.6**	**-12.5**
+ NET PROCEEDS CAPITAL INCREASES*	3.7	13.7	2.3	16.0	0.3	15.6	15.9	0.0	28.0
+ OTHER	1.7	0.6	-0.5	0.2	0.0	0.2	0.2	0.0	0.0
CHANGE IN LIQUID FUNDS	**-3.6**	**8.9**	**-4.6**	**4.3**	**-7.0**	**9.8**	**2.7**	**-11.6**	**15.5**

SOURCE: OCTAVIAN

*We assume CHF 45m cash injections (gross proceeds) until break-even: CHF 16m (2018) & CHF 29m (2020E)

OCTAVIAN

MAGNETOS

Synthetic bone graft substitute
Class: synthetic, calcium phosphate based
Granules and putty, differentiated surface structure
Hybrid sales model in US&EU
Status: marketed
Patent protection: granules 2034E / putty 2036E

CE marked (granules & putty):
Bone void filler; approved for use in orthopedics, craniomaxillofacial & dental
510(k) FDA approval (granules & putty):
Bone graft extender in posterolateral spinal fusion; bone graft for extremities and pelvis
Q2-18: Start Phase II trial (instrumented posterolateral spinal fusion), comparison to autograft

2019E/2020E: completion of clinical (marketing) studies

Assumptions: Pricing strategy: at parity to hightest priced competitor (synthetics)

Revenue per US patient (USD):	1,400	ASP USD 650 (trauma), up to USD 1'500 (spine)
Revenue per EU patient (EUR):	550	On avg. 1.0 kit per patient (trauma). Applications in spine: higher (>2 kits)
USD/CHF	1.00	
EUR/CHF	1.15	
Revenue per US patient (CHF):	1,400	+2% p.a. (mostly spine, trauma)
Revenue per EU patient (CHF):	633	-3% p.a. (mostly trauma)

List price (cc): US USD 570; typical ASP achieved: USD 300-400

US SALES (CHF M)	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E
Synthetic bone grafts																		
Total no. of units (m)	0.309	0.312	0.315	0.318	0.322	0.325	0.328	0.331	0.335	0.338	0.341	0.345	0.348	0.352	0.355	0.359	0.362	0.366
- Change in %	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*
Est. market size p.a. (CHF m)*	433	446	459	473	487	502	517	533	549	566	583	600	618	637	656	676	697	718
MagnetOs share (% of units)	**0.1%**	**0.5%**	**1.2%**	**2.2%**	**4.0%**	**7.0%**	**10.0%**	**11.0%**	**12.0%**	**12.0%**	**12.0%**	**12.0%**	**12.0%**	**12.0%**	**12.0%**	**12.0%**	**11.0%**	**10.0%**
Average ASP/patient (CHF)	1400	1428	1457	1486	1515	1546	1577	1608	1640	1673	1707	1741	1776	1811	1847	1884	1922	1960
US MAGNETOS SALES	**0.4**	**2.2**	**5.5**	**10.4**	**19.5**	**35.1**	**51.7**	**58.6**	**65.9**	**67.9**	**69.9**	**72.0**	**74.2**	**76.4**	**78.8**	**81.1**	**76.6**	**71.8**
- Change in %	*NA*	*415%*	*147%*	*89%*	*87%*	*80%*	*47%*	*13%*	*12%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*-6%*	*-6%*

*Estimated size of synthetic bone graft substitute markets.

EU/ROW SALES (CHF M)	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E
Synthetic bone grafts																		
Total no. of units (m)	0.340	0.343	0.347	0.350	0.354	0.357	0.361	0.365	0.368	0.372	0.376	0.379	0.383	0.387	0.391	0.395	0.399	0.403
- Change in %	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*
Est. market size p.a. (CHF m)*	215	211	206	202	198	194	190	186	183	179	175	172	168	165	161	158	155	152
MagnetOs share (% of units)	**0.1%**	**0.4%**	**0.9%**	**1.9%**	**3.7%**	**7.0%**	**8.0%**	**9.0%**	**10.0%**	**11.0%**	**12.0%**	**12.0%**	**12.0%**	**12.0%**	**12.0%**	**12.0%**	**11.0%**	**10.0%**
No. of Magnetos units sold ('000)	0.3	1.4	3.1	6.7	13.1	25.0	28.9	32.8	36.8	40.9	45.1	45.5	46.0	46.4	46.9	47.4	43.9	40.3
Average ASP/patient (CHF)	632.5	614	595	577	560	543	527	511	496	481	466	452	439	426	413	401	389	377
EU/ROW MAGNETOS SALES	**0.2**	**0.8**	**1.9**	**3.8**	**7.3**	**13.6**	**15.2**	**16.8**	**18.3**	**19.7**	**21.0**	**20.6**	**20.2**	**19.8**	**19.4**	**19.0**	**17.0**	**15.2**
- Change in %	*NA*	*292%*	*120%*	*107%*	*91%*	*85%*	*12%*	*10%*	*9%*	*8%*	*7%*	*-2%*	*-2%*	*-2%*	*-2%*	*-2%*	*-10%*	*-11%*

GLOBAL SALES (CHF M)	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E
US SALES	0	2	6	10	19	35	52	59	66	68	70	72	74	76	79	81	77	72
EU SALES	0	1	2	4	7	14	15	17	18	20	21	21	20	20	19	19	17	15
TOTAL MAGNETOS SALES	**1**	**3**	**7**	**14**	**27**	**49**	**67**	**75**	**84**	**88**	**91**	**93**	**94**	**96**	**98**	**100**	**94**	**87**
- Change in %	*NA*	*374%*	*140%*	*93%*	*88%*	*82%*	*37%*	*13%*	*12%*	*4%*	*4%*	*2%*	*2%*	*2%*	*2%*	*2%*	*-6%*	*-7%*

SOURCE: OCTAVIAN

We estimate global **peak sales of ~CHF100m** driven by (1) product differentiation (surface topography), (2) clinical superiority to other synthetics/equivalence to autograft, and (3) label extensions in the US. Estimated geographic split: ~80% in US, ~20% in EU/ROW

OCTAVIAN

KUR-113 - SPINAL FUSION

Indication: spinal fusion
In combination with an intervertebral spacer (cage) - own product (510k approved)
Fibrin-PTH drug, in combination with spinal cage
Fibrin-matrix + TG-PTH. Gel-like injectable material
Directly applied into spinal cage
Development status: Phase II pilot study (40-60 patients) start Q2-19E
Phase IIb in trauma: showed non-inferiority to autograft (1° efficacy endpoint)

Envisioned Phase III program for spine (TLIF)

IND approval	Q1-19E
Start Phase II (FPI):	Q2-19E
Phase II interim data:	mid 2020E
Start Phase III:	2021E
Phase III read-out/submission*:	2023E/2024E
Market launch:	2025E

Est. cost Phase II: CHF 5m, Phase III: CHF 25m
(OctE: 38m projected for US&EU until approval)

Assumptions:

Revenue per US patient (USD):	6,000	
Revenue per EU patient (EUR):	3,000	
USD/CHF	1.00	
EUR/CHF	1.15	
Revenue per US patient (CHF):	6,000	+2% p.a.
Revenue per EU patient (CHF):	3,450	-3% p.a.

(on avg. 2 kits per patient)

US SALES - SPINAL FUSION (CHF M)	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E
No. of patients, US (m)*	0.831	0.840	0.848	0.856	0.865	0.874	0.882	0.891	0.900	0.909	0.918	0.927
- Change in %	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*
% of patients eligible (lumbar)	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%
No. of eligible patients (m)	0.499	0.504	0.509	0.514	0.519	0.524	0.529	0.535	0.540	0.545	0.551	0.556
KUR-113 market share in %		**1.0%**	**3.0%**	**4.5%**	**6.0%**	**7.5%**	**9.0%**	**10.0%**	**10.0%**	**10.0%**	**9.5%**	**9.0%**
No. of patients treated ('000)		5.0	15.3	23.1	31.1	39.3	47.6	53.5	54.0	54.5	52.3	50.1
ASP/patient (2.0 kits per patient)		6000	6120	6242	6367	6495	6624	6757	6892	7030	7171	7314
Sales (CHF m)		**30**	**93**	**144**	**198**	**255**	**316**	**361**	**372**	**383**	**375**	**366**
- Change in %		*NA*	*209%*	*55%*	*37%*	*29%*	*24%*	*14%*	*3%*	*3%*	*-2%*	*-2%*

EU/ROW SALES - SPINAL FUSION (CHF M	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E
No. of patients, EU/ROW (m)	0.656	0.663	0.669	0.676	0.683	0.690	0.697	0.704	0.711	0.718	0.725	0.732
- Change in %	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*
% of patients eligible (lumbar)	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%
No. of eligible patients (m)	0.394	0.398	0.402	0.406	0.410	0.414	0.418	0.422	0.426	0.431	0.435	0.439
KUR-111 market share in %		**0.5%**	**2.0%**	**3.5%**	**5.0%**	**6.0%**	**7.0%**	**8.0%**	**9.0%**	**10.0%**	**9.5%**	**9.0%**
No. of patients treated ('000)		2.0	8.0	14.2	20.5	24.8	29.3	33.8	38.4	43.1	41.3	39.5
ASP/patient (2.0 kits per patient)		3450	3347	3246	3149	3054	2963	2874	2788	2704	2623	2544
Sales (CHF m)		**7**	**27**	**46**	**65**	**76**	**87**	**97**	**107**	**116**	**108**	**101**
- Change in %		*NA*	*292%*	*71%*	*40%*	*18%*	*14%*	*12%*	*10%*	*9%*	*-7%*	*-7%*

EU/ROW SALES - SPINAL FUSION (CHF M	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E
US SALES (CHF M)	0	30	93	144	198	255	316	361	372	383	375	366
EU SALES (CHF M)	0	7	27	46	65	76	87	97	107	116	108	101
TOTAL SALES KUR-113 (CHF M)	**0**	**37**	**120**	**190**	**263**	**331**	**402**	**458**	**479**	**500**	**484**	**467**
- Change in %	*NA*	*NA*	*224%*	*58%*	*38%*	*26%*	*21%*	*14%*	*5%*	*4%*	*-3%*	*-3%*

SOURCE: OCTAVIAN

We estimate global **peak sales of CHF 500m** driven by a differentiated product profile (equivalence to gold standard autograft) and premium pricing vs. standard bone grafts
Estimated geographic sales split: 77% in US, 23% in EU/ROW
The total addressable market size for bone grafts is estimates at >CHF 3bn by 2030E

7 Valuation & Recommendation

We set a price target of CHF 7 (based on rNPV and initiate with a BUY rating

We use a risk-adjusted NPV (sum-of-the parts) model with a WACC of 14.0% to derive our **price target of CHF 7.0** for Kuros Biosciences. Our standard DCF model (10-year forecasts plus TV, WACC of 15.7%) yields a fair equity value of CHF 6.7, which broadly supports our PT of CHF 7.

We note, our fair equity value calculation includes a CHF 29m capital increase in 2020E (calculated at current share price levels of CHF 2.50) which has a negative effect of ~CHF3.5 on the fair value. The legacy portfolio (Neuroseal, trauma products, out-licensed Cytos assets) is not part of our valuation.

We initiate coverage on Kuros Biosciences with a BUY rating and a price target of CHF 7 (+185% upside potential).

7.1 Risk-adjusted Net Present Value Model (rNPV)

Our NPV valuation work provides detailed forecasts for individual products which are probability-adjusted. We use risk-adjusted NPV models (rNPV) for the years 2018E to 2035E (covering full IP protection for most products).

Our price target is based on a risk-adjusted NPV sum-of-the-parts model

Probability-adjustment to account for product development risk: for MagnetOs, which is approved in most geographies (EU & US), we apply a probability-adjustment of 80% on our estimates as data from the clinical marketing trials are not yet available. For KUR-113, we adjust our NPV estimates with 30% probability given the product's current development stage (moving into Phase II; clinical Phase II data from trauma indications is available). Other costs (R&D, SG&A not allocated to individual products) and cash in-flows from the 2018 equity increase (CHF 16m gross proceeds) as well as from the assumed future capital injection (OctE: CHF 29m equity funding in Q4-18E) are included as well. To account for the dilutive effect of the 2020E funding, we use the current share price levels (CHF 2.50) to calculate the number of new shares.

We apply a WACC of 14% on our risk-adjusted estimates

We apply a WACC of 14.0% on our risk-adjusted estimates: given the company's direct/hybrid sales strategy, Kuros should be able to capture the maximum economic value of its products; however, we see execution risks considering oligopolistic market structures and fierce competition through established medical device players. We account for the execution risk by using a WACC of 14.0% (range of 11-17% for the sensitivity analysis) on our probability-adjusted NPVs. In our projections we assume direct/hybrid commercialization for MagnetOs and KUR-113 in the US, and a distributor model in EU; still, we believe there is a certain likelihood that Kuros might chose to partner KUR-113.

Fair equity value of CHF 7.0

Our rNPV model suggests a fair equity value of CHF 7.0 per share using above-mentioned assumptions. We believe that the value of the company is not properly reflected in the share price, and we see substantial upside potential to our fair equity value (+185%). We use the rNPV-derived fair equity value as the basis of our price target and **initiate coverage on Kuros with a BUY rating and PT of CHF 7.**

Neuroseal is not part of our fair value range: for illustrative purposes we provide our analysis of the potential value of this asset. Neuroseal is regulated as a medical device and has obtained CE mark. To derive the rNPV, we apply a probability of 90% to our EU cash flow estimates and 80% to our US estimates (PMA study required for approval). The resulting combined rNPV is CHF 18m.

OCTAVIAN

Summary rNPV sum-of-the-parts valuation:

rNPV (CHF M)		NPV (100%)	RISK ADJUSTMENT	rNPV	PER SHARE (CHF)	
CONTINUING PROJECTS						
KUR-113 - USA SPINE		214	30%	64	2.4	34%
KUR-113 - EUROPE SPINE		34	30%	10	0.4	5%
TOTAL KUR-113 SPINE		248	**30%**	**74**	**2.8**	40%
MAGNETOS - USA		72	80%	58	2.2	31%
MAGNETOS - EU		12	80%	10	0.4	5%
TOTAL MAGNETOS		85	**80%**	**68**	**2.5**	36%
OTHER INCOME/COST		-15	100%	**-15**	**-0.6**	-8%
OTHER PIPELINE ASSETS/MILESTONE PAYMENTS		0		0	0.0	
TOTAL PRODUCTS/COST		317		**127**	**4.8**	68%
NET CASH (END OF 2017)		17		17	0.6	9%
+ CASH FROM CAPITAL INCREASE (Dec 2018)		16		16	0.6	8%
+ CASH FROM CAPITAL INCREASE (2020E)		28		28	1.1	15%
EQUITY FAIR VALUE		711		**187**	7.0	**100%**
NO. OF SHARES (M)	*15.1*					
NEW SHARES CAP. INCREASE 2020E	*11.6*					
TOTAL NO. OF SHARES (M)	*26.7*					WACC: 14.0%

For illustrative purposes/not included in rNPV:

rNPV (CHF M)	NPV (100%)	RISK ADJUSTMENT	rNPV	PER SHARE (CHF)
DISCONTNUED/FOR SALE				
NEUROSEAL - EUROPE	10	90%	9	0.3
NEUROSEAL - USA	11	80%	9	0.3
TOTAL NEUROSEAL	21	**85%**	**18**	**0.7**
(ASSUMES NO PREMIUM PAID BY STRATEGIC BUYER)				

SOURCE: OCTAVIAN

Sensitivity to WACC (%)							
	11.0	12.0	13.0	14.0	15.0	16.0	17.0
CHF M	**9.1**	**8.3**	**7.6**	**7.0**	**6.5**	**6.0**	**5.6**

OCTAVIAN

Risk-adjusted NPV valuation models (sum-of-the-parts):

KUR-113 (spinal fusion) - USA

CHF M	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E	
US SALES	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**30.2**	**93.4**	**144.3**	**198.3**	**255.3**	**315.6**	**361.3**	**372.2**	**383.4**	**375.3**	**366.3**	
COGS (15%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	15.9	23.1	29.7	38.3	47.3	54.2	55.8	57.5	56.3	54.9	
R&D	2.0	2.5	4.0	5.0	5.0	5.0	2.5	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
G&A	0.3	0.3	0.3	0.3	0.3	0.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
S&M (SYNERGIES WITH MAGNETOS)	0.0	0.0	0.0	0.0	0.0	0.0	6.0	18.0	35.0	55.0	75.0	90.0	100.0	110.0	110.0	110.0	110.0	110.0	
EBIT	**-2.3**	**-2.8**	**-4.3**	**-5.3**	**-5.3**	**-5.3**	**-9.5**	**4.8**	**40.5**	**64.2**	**92.5**	**126.0**	**167.3**	**196.1**	**205.4**	**214.9**	**208.0**	**200.3**	
- EBIT MARGIN IN %	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*16%*	*43%*	*45%*	*47%*	*49%*	*53%*	*54%*	*55%*	*56%*	*55%*	*55%*	
TAXES	-0.3	-0.4	-0.6	-0.7	-0.7	-0.7	-1.3	0.7	5.7	9.0	13.0	17.6	23.4	27.5	28.8	30.1	29.1	28.0	
- TAX RATE	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	
CASH FLOW	**-2.0**	**-2.4**	**-3.7**	**-4.6**	**-4.6**	**-4.6**	**-8.2**	**4.1**	**34.9**	**55.3**	**79.6**	**108.4**	**143.9**	**168.6**	**176.6**	**184.8**	**178.9**	**172.3**	
- CHANGE IN %	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*59%*	*44%*	*36%*	*33%*	*17%*	*5%*	*5%*	*-3%*	*-4%*	
WACC (%)																		**14.0**	
NUMBER OF YEARS	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	
DISCOUNT FACTOR	1.00	0.88	0.77	0.67	0.59	0.52	0.46	0.40	0.35	0.31	0.27	0.24	0.21	0.18	0.16	0.14	0.12	0.11	
DISC. CASH FLOW	**-2.0**	**-2.1**	**-2.8**	**-3.1**	**-2.7**	**-2.4**	**-3.7**	**1.6**	**12.2**	**17.0**	**21.5**	**25.6**	**29.9**	**30.7**	**28.2**	**25.9**	**22.0**	**18.6**	**NPV CHF M**
TOTAL DISC. CASH FLOWS 2018E-2035E	100%																		214
NPV AT 30% PROBABILITY	**30%**																		**64**

KUR-113 (spinal fusion) - EUROPE

CHF M	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E	
EU SALES	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**6.9**	**26.9**	**46.1**	**64.5**	**75.8**	**86.7**	**97.0**	**107.0**	**116.4**	**108.4**	**100.6**	
COGS (22%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	5.9	10.1	14.2	16.7	19.1	21.4	23.5	25.6	23.8	22.1	
R&D	1.5	1.5	2.0	2.0	2.0	2.0	1.5	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
G&A	0.2	0.2	0.2	0.2	0.2	0.2	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
S&M (SYNERGIES WITH MAGNETOS)	0.0	0.0	0.0	0.0	0.0	0.0	4.0	8.0	15.0	20.0	26.0	30.0	35.0	39.0	43.0	47.0	45.0	43.0	
EBIT	**-1.7**	**-1.7**	**-2.2**	**-2.2**	**-2.2**	**-2.2**	**-6.5**	**-4.6**	**4.5**	**14.9**	**23.3**	**28.1**	**31.6**	**35.7**	**39.4**	**42.8**	**38.5**	**34.5**	
- EBIT MARGIN IN %	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*17%*	*32%*	*36%*	*37%*	*36%*	*37%*	*37%*	*37%*	*36%*	*34%*	
TAXES	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.9	-0.7	0.6	2.1	3.3	3.9	4.4	5.0	5.5	6.0	5.4	4.8	
- TAX RATE	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	
CASH FLOW	**-1.5**	**-1.5**	**-1.9**	**-1.9**	**-1.9**	**-1.9**	**-5.6**	**-4.0**	**3.8**	**12.9**	**20.0**	**24.2**	**27.2**	**30.7**	**33.9**	**36.8**	**33.1**	**29.6**	
- CHANGE IN %	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*56%*	*21%*	*12%*	*13%*	*10%*	*9%*	*-10%*	*-11%*	
WACC (%)																		**14.0**	
NUMBER OF YEARS	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	
DISCOUNT FACTOR	1.00	0.88	0.77	0.67	0.59	0.52	0.46	0.40	0.35	0.31	0.27	0.24	0.21	0.18	0.16	0.14	0.12	0.11	
DISC. CASH FLOW	**-1.5**	**-1.3**	**-1.5**	**-1.3**	**-1.1**	**-1.0**	**-2.5**	**-1.6**	**1.3**	**4.0**	**5.4**	**5.7**	**5.6**	**5.6**	**5.4**	**5.2**	**4.1**	**3.2**	**NPV CHF M**
TOTAL DISC. CASH FLOWS 2018E-2035E	100%																		34
NPV AT 30% PROBABILITY	**30%**																		**10**

MagnetOs (synthetic bone graft substitute) - USA

CHF M	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E	
US PRODUCT SALES	**0.4**	**2.2**	**5.5**	**10.4**	**19.5**	**35.1**	**51.7**	**58.6**	**65.9**	**67.9**	**69.9**	**72.0**	**74.2**	**76.4**	**78.8**	**81.1**	**76.6**	**71.8**	
COGS (15%)	0.1	0.4	0.9	1.6	2.9	5.3	7.8	8.8	9.9	10.2	10.5	10.8	11.1	11.5	11.8	12.2	11.5	10.8	
R&D	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SG&A	3.5	4.5	6.0	8.0	12.0	19.0	24.0	27.0	30.0	31.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	
EBIT	**-3.6**	**-3.1**	**-1.9**	**0.8**	**4.6**	**10.9**	**20.0**	**22.8**	**26.0**	**26.7**	**29.4**	**31.2**	**33.1**	**35.0**	**36.9**	**39.0**	**35.1**	**31.0**	
- EBIT MARGIN IN %	*NM*	*NM*	*NM*	*NM*	*23%*	*31%*	*39%*	*39%*	*39%*	*39%*	*42%*	*43%*	*45%*	*46%*	*47%*	*48%*	*46%*	*43%*	
TAXES	-0.5	-0.4	-0.3	0.1	0.6	1.5	2.8	3.2	3.6	3.7	4.1	4.4	4.6	4.9	5.2	5.5	4.9	4.3	
- TAX RATE	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	
CASH FLOW	**-3.1**	**-2.7**	**-1.6**	**0.7**	**3.9**	**9.4**	**17.2**	**19.6**	**22.4**	**23.0**	**25.3**	**26.9**	**28.4**	**30.1**	**31.8**	**33.5**	**30.2**	**26.7**	
- CHANGE IN %	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*84%*	*14%*	*14%*	*3%*	*10%*	*6%*	*6%*	*6%*	*6%*	*5%*	*-10%*	*-12%*	
WACC (%)																		**14.0**	
NUMBER OF YEARS	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	
DISCOUNT FACTOR	1.00	0.88	0.77	0.67	0.59	0.52	0.46	0.40	0.35	0.31	0.27	0.24	0.21	0.18	0.16	0.14	0.12	0.11	
DISC. CASH FLOW	**-3.1**	**-2.4**	**-1.2**	**0.5**	**2.3**	**4.9**	**7.8**	**7.8**	**7.8**	**7.1**	**6.8**	**6.4**	**5.9**	**5.5**	**5.1**	**4.7**	**3.7**	**2.9**	**NPV CHF M**
TOTAL DISC. CASH FLOWS 2018E-2035E	100%																		72
NPV AT 80% PROBABILITY	**80%**																		**58**

OCTAVIAN

MagnetOs (synthetic bone graft substitute) - EU

CHF M	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E	
EU PRODUCT SALES	**0.2**	**0.8**	**1.9**	**3.8**	**7.3**	**13.6**	**15.2**	**16.8**	**18.3**	**19.7**	**21.0**	**20.6**	**20.2**	**19.8**	**19.4**	**19.0**	**17.0**	**15.2**	
COGS (20%)	0.1	0.2	0.4	0.8	1.5	2.7	3.0	3.4	3.7	3.9	4.2	4.1	4.0	4.0	3.9	3.8	3.4	3.0	
R&D	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SG&A	1.5	2.0	2.5	3.5	4.0	7.5	8.0	8.5	9.0	9.5	10.0	10.0	10.0	10.0	9.5	9.5	8.5	7.5	
EBIT	**-1.8**	**-1.9**	**-1.6**	**-0.5**	**1.9**	**3.4**	**4.2**	**4.9**	**5.6**	**6.2**	**6.8**	**6.5**	**6.1**	**5.8**	**6.0**	**5.7**	**5.1**	**4.6**	
- EBIT MARGIN IN %	*NM*	*NM*	*NM*	*NM*	*25%*	*25%*	*27%*	*29%*	*31%*	*32%*	*32%*	*31%*	*30%*	*29%*	*31%*	*30%*	*30%*	*31%*	
TAXES	-0.3	-0.3	-0.2	-0.1	0.3	0.5	0.6	0.7	0.8	0.9	1.0	0.9	0.9	0.8	0.8	0.8	0.7	0.6	
- TAX RATE	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	
CASH FLOW	**-1.6**	**-1.6**	**-1.3**	**-0.4**	**1.6**	**2.9**	**3.6**	**4.2**	**4.8**	**5.4**	**5.9**	**5.6**	**5.3**	**5.0**	**5.2**	**4.9**	**4.4**	**4.0**	
- CHANGE IN %	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*24%*	*18%*	*14%*	*11%*	*9%*	*-5%*	*-5%*	*-5%*	*3%*	*-5%*	*-10%*	*-10%*	
WACC (%)																		**14.0**	
NUMBER OF YEARS	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	
DISCOUNT FACTOR	1.00	0.88	0.77	0.67	0.59	0.52	0.46	0.40	0.35	0.31	0.27	0.24	0.21	0.18	0.16	0.14	0.12	0.11	
DISC. CASH FLOW	**-1.6**	**-1.4**	**-1.0**	**-0.3**	**0.9**	**1.5**	**1.6**	**1.7**	**1.7**	**1.6**	**1.6**	**1.3**	**1.1**	**0.9**	**0.8**	**0.7**	**0.5**	**0.4**	**NPV CHF M**
TOTAL DISC. CASH FLOWS 2018E-2035E	100%																		12
NPV AT 80% PROBABILITY	**80%**	BASE CASE, PROBABILITY OF 80% THAT CLINICAL STUDIES ARE POSITIVE																	**10**

OTHER INCOME/SPEND

CHF M	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E	
OTHER INCOME	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
R&D NOT INCLUDED ABOVE (ADJ.)	1.5	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
SG&A NOT INCLUDED ABOVE (ADJ.)	3.0	1.0	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
EBIT	**-2.7**	**-2.0**	**-2.0**	**-2.5**	**-2.5**	**-2.5**	**-2.5**	**-2.5**	**-2.5**	**-2.5**	**-2.5**	**-2.5**	**-2.5**	**-2.5**	**-2.5**	**-2.5**	**-2.5**	**-2.5**	
TAXES	-0.4	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	
- TAX RATE	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	
CASH FLOW	**-2.3**	**-1.7**	**-1.7**	**-2.2**	**-2.2**	**-2.2**	**-2.2**	**-2.2**	**-2.2**	**-2.2**	**-2.2**	**-2.2**	**-2.2**	**-2.2**	**-2.2**	**-2.2**	**-2.2**	**-2.2**	
- CHANGE IN %	*NM*	*NM*	*NM*	*25%*	*0%*	*0%*	*NM*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	
WACC (%)																		**14.0**	
NUMBER OF YEARS	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	
DISCOUNT FACTOR	1.00	0.88	0.77	0.67	0.59	0.52	0.46	0.40	0.35	0.31	0.27	0.24	0.21	0.18	0.16	0.14	0.12	0.11	
DISC. CASH FLOW	**-2.3**	**-1.5**	**-1.3**	**-1.5**	**-1.3**	**-1.1**	**-1.0**	**-0.9**	**-0.8**	**-0.7**	**-0.6**	**-0.5**	**-0.4**	**-0.4**	**-0.3**	**-0.3**	**-0.3**	**-0.2**	**NPV CHF M**
NPV OTHER INCOME/COST																			**-15**

SUMMARY NPV MODELS

EXCL. NEUROSEAL

CHF M	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E	
TOTAL PRODUCT SALES	**0.6**	**3.1**	**7.4**	**14.3**	**26.8**	**48.7**	**66.9**	**112.5**	**204.4**	**278.0**	**353.7**	**423.8**	**496.7**	**554.6**	**577.3**	**600.0**	**577.3**	**553.8**	
TOTAL COGS	0.1	0.6	1.3	2.4	4.4	8.0	10.8	19.1	35.3	47.3	58.6	69.9	81.6	91.0	95.0	99.1	95.0	90.9	
GROSS PROFIT	**0.5**	**2.5**	**6.1**	**11.9**	**22.4**	**40.7**	**56.1**	**93.4**	**169.1**	**230.6**	**295.1**	**353.9**	**415.1**	**463.6**	**482.2**	**500.9**	**482.3**	**462.9**	
- GROSS MARGIN IN %	*80%*	*81%*	*82%*	*83%*	*84%*	*84%*	*84%*	*83%*	*83%*	*83%*	*83%*	*84%*	*84%*	*84%*	*84%*	*83%*	*84%*	*84%*	
TOTAL R&D	6.0	6.0	8.0	9.0	9.0	9.0	6.0	4.0	3.5	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
TOTAL SG&A	8.5	8.0	10.0	12.5	17.0	27.5	44.5	64.0	91.5	118.0	143.5	162.5	177.5	191.5	195.0	199.0	196.0	193.0	
OTHER INCOME	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EBIT	**-12.2**	**-11.5**	**-11.9**	**-9.6**	**-3.6**	**4.2**	**5.6**	**25.4**	**74.1**	**109.6**	**149.6**	**189.4**	**235.6**	**270.1**	**285.2**	**299.9**	**284.3**	**267.9**	
- EBIT MARGIN IN %	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*8%*	*23%*	*36%*	*39%*	*42%*	*45%*	*47%*	*49%*	*49%*	*50%*	*49%*	*48%*	
TAXES	-1.7	-1.6	-1.7	-1.3	-0.5	0.6	0.8	3.6	10.4	15.3	20.9	26.5	33.0	37.8	39.9	42.0	39.8	37.5	
- TAX RATE	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	
CASH FLOW	**-10.5**	**-9.9**	**-10.3**	**-8.3**	**-3.1**	**3.7**	**4.9**	**21.8**	**63.7**	**94.3**	**128.6**	**162.9**	**202.6**	**232.3**	**245.3**	**257.9**	**244.5**	**230.4**	
- CHANGE IN %	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*33%*	*350%*	*192%*	*48%*	*36%*	*27%*	*24%*	*15%*	*6%*	*5%*	*-5%*	*-6%*	
WACC (%)																		**14.0**	
NUMBER OF YEARS	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	
DISCOUNT FACTOR	1.00	0.88	0.77	0.67	0.59	0.52	0.46	0.40	0.35	0.31	0.27	0.24	0.21	0.18	0.16	0.14	0.12	0.11	
DISC. CASH FLOW	**-10**	**-9**	**-8**	**-6**	**-2**	**2**	**2**	**9**	**22**	**29**	**35**	**39**	**42**	**42**	**39**	**36**	**30**	**25**	**NPV CHF M**
TOTAL DISC. CASH FLOWS (2018E-2035E)																			317
NPV FROM ABOVE (RISK-ADJUSTED)	**40%**																		**127**

OCTAVIAN

7.2 Discounted Cash Flow Valuation (DCF)

Our DCF model suggests a fair equity value of CHF 6.7/share

Our standard DCF valuation work incorporates 10-year forecasts and a terminal value. We use a perpetual growth of 2.0% (consistent with our standard assumption for healthcare companies), a 25.0% terminal EBIT margin, and a WACC of 15.7% (on not risk-adjusted estimates).

Our DCF valuation model suggests a fair equity value CHF 6.7/share.

DCF MODEL (CHF M)	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	TV
SALES	**0.9**	**3.1**	**7.4**	**14.3**	**26.8**	**48.7**	**66.9**	**112.5**	**204.4**	**278.0**	**283.5**
- CHANGE %	*67.9*	*242.5*	*139.9*	*93.4*	*88.2*	*81.7*	*37.4*	*68.0*	*81.8*	*36.0*	*2.0*
EBIT	-12	-12	-12	-10	-4	4	6	25	74	110	71
- IN% OF SALES	*NM*	*NM*	*NM*	*NM*	*NM*	*8.7*	*8.4*	*22.6*	*36.2*	*39.4*	*25.0*
+ DEPRECIATION & AMORTIZATION	1.5	1.5	1.7	2.1	2.2	2.2	2.3	2.4	2.5	2.6	5.0
- IN % OF CAPEX	*136*	*167*	*149*	*137*	*112*	*100*	*89*	*79*	*70*	*63*	*100*
EBITDA	**-10**	**-10**	**-10**	**-8**	**-1**	**6**	**8**	**28**	**77**	**112**	**76**
- CHANGE %	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*22.7*	*249.6*	*175.9*	*46.5*	*-32.4*
- IN% OF SALES	*NM*	*NM*	*NM*	*NM*	*NM*	*13.3*	*11.9*	*24.7*	*37.5*	*40.4*	*26.8*
./. TAXES PAID	-0.9	0.0	0.0	0.0	0.0	0.0	0.8	3.6	10.4	15.3	9.9
- IN % OF EBIT	*-7.5*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-14.0*	*-14.0*	*-14.0*	*-14.0*	*-14.0*
NET CHANGE IN WORKING CAPITAL	-0.9	-0.7	-1.2	-1.6	-2.8	-2.9	-4.2	-6.1	-8.7	-13.9	-3.0
- CAPITAL EXPENDITURE (EXCL. ACQ.)	1.1	0.9	1.1	1.5	1.9	2.2	2.6	3.0	3.5	4.1	5.0
FREE OPERATING CASH FLOW	**-11.5**	**-11.6**	**-12.6**	**-10.7**	**-6.2**	**1.3**	**0.3**	**15.1**	**54.0**	**78.8**	**58.0**
- CHANGE %	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*256.8*	*46.0*	*-26.5*

WEIGHTED AVERAGE COST OF CAPITAL	
RISK FREE INTEREST RATE (%)	3.0
RISK PREMIUM (%)	5.5
BETA VS. SMI	2.30
COST OF EQUITY	15.7
AVG INTEREST RATE ON DEBT (%)	3.5
TAX RATE (%)	14.0
COST OF DEBT (TAX ADJUSTED)	3.0
WACC RANGE (%)	**15.7**

NUMBER OF YEARS	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	
DISCOUNT FACTOR	0.86	0.86	0.75	0.65	0.56	0.48	0.42	0.36	0.31	0.27	
DISC. FREE OPERATING CASH FLOWS	-10	-10	-9	-7	-3	1	0	5	17	21	

SUM OF DCF 2018E - 2027E	4.7
PERPETUAL GROWTH RATE (%)	**2.0**
TERMINAL VALUE	114.7
TOTAL DCF	**119.4**
+ NET CASH (END OF 2017)	16.7
- PENSIONS PROVISIONS (2017)	1.7
+ CAPITAL INCREASE (Q4-18E)	15.6
+ CAPITAL INCREASE (2020E)	28.0
= TOTAL EQUITY VALUE	**178.0**
NO. OF SHARES IN M (incl. capital increase 2020E)	26.7
VALUE PER SHARE (CHF)	**6.7**

SENSITIVITY OF EQUITY VALUE TO WACC, TV GROWTH AND TV MARGIN

EBIT MARGIN AND TERMINAL VALUE GROWTH RATES

	TV EBIT MARGIN (%)						
	19.0	21.0	23.0	25.0	27.0	29.0	31.0
0.5	5.2	5.5	5.9	6.2	6.5	6.8	7.2
1.0	5.3	5.7	6.0	6.3	6.7	7.0	7.3
1.5	5.5	5.8	6.2	6.5	6.9	7.2	7.5
2.0	5.6	6.0	6.3	**6.7**	7.0	7.4	7.8
2.5	5.7	6.1	6.5	6.9	7.2	7.6	8.0
3.0	5.9	6.3	6.7	7.1	7.5	7.9	8.2
3.5	6.0	6.5	6.9	7.3	7.7	8.1	8.5

WACC AND TERMINAL VALUE GROWTH RATES

	WACC (%)						
	14.2	14.7	15.2	15.7	16.2	16.7	17.2
0.5	7.3	6.9	6.5	6.2	5.9	5.6	5.3
1.0	7.5	7.1	6.7	6.3	6.0	5.7	5.4
1.5	7.7	7.3	6.9	6.5	6.2	5.9	5.6
2.0	8.0	7.5	7.1	**6.7**	6.3	6.0	5.7
2.5	8.2	7.7	7.3	6.9	6.5	6.1	5.8
3.0	8.5	8.0	7.5	7.1	6.7	6.3	6.0
3.5	8.8	8.3	7.7	7.3	6.9	6.5	6.1

SOURCE: OCTAVIAN

8 Legacy Product: Neuroseal

8.1 Summary

Legacy product, not included in our fair value

Neuroseal is considered a legacy product and not part of our fair value: we understand that Kuros is currently evaluating different strategic options for Neuroseal, including (1) the disposal of the product to another party (preferred option), (2) launching the product in selected EU countries through local distributors, or (3) a spin-off of the asset into a new legal entity. Obviously, the outcome of such discussions is not possible to predict, and at this stage we take a conservative approach and do not assign any value to Neuroseal. For illustrative purposes, we include an analysis of the market and our assessment of the potential value of Neuroseal below.

CE marked dural sealant device for neurosurgery

Neuroseal is a PEG-based sealant (medical device) to seal the dura after cranial surgery: the product is composed of two polymers that crosslink *in situ* to provide a watertight seal to prevent post-operative leakage of the dural membrane after brain or spinal surgery as an adjunct to suturing. In a 40-patient clinical trial conducted in EU, Neuroseal has been shown to be safe and effective. In 2017, Neuroseal was CE marked (dural sealant for use in brain surgery). To broaden the label, the company has submitted for the extension to its CE mark to also cover spinal indications. A decision by the authorities is expected by early 2019E.

Product technology acquisitions are common in medical technology markets

Technology acquisitions are common in medical technology markets: dural sealants are a niche market with a market potential of approximately CHF 200m p.a.; off-label use of other products is common. Meanwhile, there are two approved synthetic dural sealants available that are comparable to Neuroseal. One is owned by Integra Lifesciences (DuraSeal), the other one (Adherus) was developed by Hyperbranch and recently acquired by Stryker. The price paid by Stryker was quite high – USD 220m for a company with an US and EU approved sealant (Adherus), with limited sales. However, given Neuroseal is not approved in the US and has not been launched in EU, we believe it is unlikely that Kuros will be able to maximize the selling price. Still, the disposal of Neuroseal - possibly structured into an upfront payment plus sales-based earn-outs - could represent a liquidity event and provide additional funding to advance the fibrin-PTH pipeline.

Peak sales potential of CHF 30m

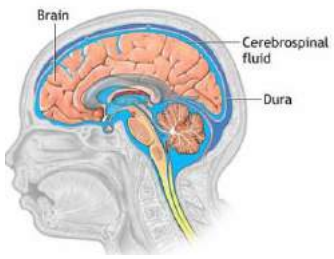
We project CHF 30m peak sales (EU & US): if the product was registered in the US (at least CHF 5-7m R&D investment required) and launched in EU and US, we anticipate a decent market uptake of Neuroseal on the back of a sound value proposition (ease-of-use, efficacy). Assuming a market share of 12%, we calculate global peak sales of CHF 30m for the product.

We derive a risk-adjusted NPV of CHF 18m

Our risk-adjusted NPV model suggests a fair value of **CHF 18m for Neuroseal.** Given the chances of a successful disposal are unpredictable, **we do not include Neuroseal in our fair value range for Kuros.**

8.1.1 Market

Brain anatomy:



Source: Kuros

The dura (mater dura) is a protective membrane that covers the brain and spinal cord and separates the cerebrospinal fluid (CSF) from the rest of the body. The CSF acts as a cushion for the brain and the spinal cord against physical impact and protects against infections in addition to providing access to nutrients.

During most cranial surgeries (tumor removal, vascular surgery) and some spinal surgeries the dural membrane is cut. As a result, the dura is not water-tight anymore which might result in leakage of the CSF. Leakage is tested by performing the so-called valsalva maneuver and occurs in 20-30% of all patients. Complications arising from a compromised dura and CSF leakage include risk of infection (meningitis), delayed wound healing and pain at the site of the surgery, which might ultimately result in increased morbidity and mortality risks and higher cost of care. Proper sealing of the dura is therefore a key priority for surgeons. Today there is no

unified standard of care; the minimum standard is the use of sutures; in USA and EU countries surgeons use either approved sealants or make use of off-label fibrin products and collagen sealants.

Dural sealants are a niche market dominated by medical device players; global market size of ~CHF 200m p.a.

Out of a total of 1.2m cranial and spinal procedures that are performed per year in the US, an estimated 230'000 procedures use a dural sealant (~20% of total). Assuming an ASP per procedure of USD 650, we estimate a US market size of approximately USD 150m, with mid-single-digit CAGR. The EU market opportunity is considerably smaller due to the lower price point; assuming no market expansion, we project a market size of roughly CHF 50m, and flat growth due to price pressure.

8.1.2 Product Description

Neuroseal is a synthetic tissue sealant candidate for the prevention of CSF leakage following cranial surgery

The device is composed of two novel, highly specific synthetic PEG (polyethylene glycol) polymers. These precursor solutions are applied via a hand-spray device and rapidly cross-link *in-situ* when mixed together (as the materials exit the tip of the applicator), i.e. at the site of administration on the dura alongside the sutures and provide an effective seal ("glue") to prevent CSF leakage. Neuroseal is applied alongside the sutures and is absorbed within ~5-6 week (enough time to allow for healing).

Neuroseal is designed to address shortcomings of current products

Neuroseal has been specifically designed to be easily applied as a liquid spray forming a watertight gel immediately upon contact with the dura. The product is bio-adhesive and fully biocompatible and degraded over 12 weeks. The value proposition includes (1) reduced swelling compared to DuraSeal (reduced risk of nerve compression caused by swelling), (2) increased burst strength and slower degradation and (3) high ease-of-use (easy preparation, controllable spray speed).

Safety and efficacy were shown in a 45-patient study in EU

CE mark approval was based on a multi-center, open label clinical study. 45 patients undergoing elective cranial surgery were enrolled, of which 41 were treated with KUR-023 once non-watertight dural closure was demonstrated intra-operatively. During follow-up, no subsequent CSF leakage could be observed either clinically or using MRI. In almost all cases, the product was prepared in less than 5 minutes with application being described as "very good". Overall, the data in the study demonstrated that the product was easy to use and effective to apply.

8.1.3 Commercial Opportunity

We project global peak sales of ~CHF 30m for Neuroseal

Assuming a similar price point as current products and a market share of 12% in US & EU, we project **peak sales of CHF 30m** for Neuroseal. We estimate the EBIT margin potential to be in the range of 35-45% of assuming COGS of 25-30% and commercial cost of 20-35% of sales.

There is a medical need for value-added products

Current products have various shortcomings. Surgeons may like, or dislike a given product based on several factors such as (1) clinical performance and added value for the procedure, (2) user-friendliness and efficiency, and (3) "commercial considerations", e.g. price, bundling with other products, relationship with sales reps, easy availability on the shelf etc. Hence, we believe that any new product must provide an advantage over current products to be commercially successful; for a "me-too" product the distribution power is a key factor.

Competitive environment: two approved dural sealants, use of other products (matrices, collagen, etc.)

Currently, dural repair and sealing is done with a variety of methods including sutures, adhesives, hemostatic agents, hydrogels, and dural substitute materials (synthetic, autologous or foreign tissue grafts). While frequently used in clinical practice, there are potential disadvantages such as the potential for nerve damage, inadequate sealing and toxicity. Off-label use is common. We are aware of two approved synthetic dural sealants (comparable to Neuroseal): (1) Integra's DuraSeal product range, and (2) Stryker's Adherus Autoseal (formerly Hyperbranch).

Overview dural sealants:

Product (Company)	Composition	Approved indication	Strength	Swelling	Degradation Time	Status
DuraSeal (Integra)	Hydrogel, 2 solutions (polyethylene glycol (PEG) ester & trilysine amine solution)	Brain surgery >18 years	240mm Hg	Up to 50%	4-8 weeks	FDA approved CE mark
DuraSeal Xact Spinal (Integra)	Low-swelling formulation of DuraSeal	Spine surgery	NA	"Low-swell"	9-12 weeks	FDA approved CE marked
Adherus (Stryker)*	Activated polyethylene glycol, polyethyleneimine, 17x crosslinked	Brain surgery >13 years	NA	8%	~12 weeks	FDA approved CE mark
Neuroseal	PEG-based	Cranial; spinal (planned)	310mm Hg	<15%	~12 weeks	CE mark (2017)

Source: Octavian, Kuros, company websites *Stryker acquired Hyperbranch for >USD 220m

DuraSeal dural sealant (Integra Lifesciences, formerly Covidien /Confluent Surgical)

DuraSeal, owned by Integra Lifesciences, was cleared by the FDA in 2005 for use during brain surgery (based on a 111-patient pivotal study) and is also available in EU/ROW as an adjunct to sutured dural repair during cranial surgery. A major drawback is that neural compression may occur as a result of hydrogel swelling (up to 50% of its size in any dimension). In 2011 the FDA approved the DuraSeal Exact spine sealant, which is a low-swell formulation indicated for spine surgery. The self-contained hydrogel takes 2 minutes to prepare for use and three seconds or less to set, so surgeons can quickly complete an intra-operative seal. We understand a major negative is the handling of the device.

Adherus AutoSpray (Stryker, formerly Hyperbranch Medical)

Stryker's Adherus AutoSpray, developed by Hyperbranch, is the only other FDA approved synthetic dural sealant (since 2015), and is also CE marked. Hyperbranch was very recently sold to Stryker for USD 220m in cash. Hyperbranch's US commercialization of Adherus was hindered by patent litigation with Integra Lifesciences; the litigation was recently settled in Hyperbranch's favor. Adherus consists of synthetic, absorbable sealant materials and a single-use, battery-operated applicator. It is composed of two solutions, a polyethylene glycol (PEG) ester solution and a polyethyleneimine (PEI) solution. When mixed together, the solutions combine to form a sealant gel that is applied to the incision site; preparation time is claimed to be only 2 minutes; the preparation must be used within 2 hours.

8.1.4 Evaluation of strategic options

CE mark approved; strategic options under evaluation. Currently no plan to develop for US market

In EU, Neuroseal received CE mark approval in 2017 based on a small clinical study (CE mark submission was done in December 2016). In the US a dural sealant is a Class III medical device; for market clearance a pivotal trial would be required for PMA approval (100-200 patients, CHF 5-7m R&D cost). Despite CE mark approval Kuros has decided against a commercial roll-out in EU markets given the prioritization of the bone graft products (which in our view makes sense). Hence, at this stage there are no R&D nor commercial activities ongoing; instead, Kuros intends to continue negotiations with potential buyers. We understand that several physicians are testing Neuroseal in clinical practice to provide more first-hand experience to interested parties.

Neuroseal could potentially be sold to a medical device company

Given the dynamics in the neurosurgery market we believe that Kuros strives to sell the product to a company that is active in this market and has the potential to include Neuroseal in its product offering to hospital account managers, neurosurgeons and spinal surgeons. After Stryker bought Hyperbranch for USD 220m to include Adherus (marketed in USA and EU) in its neurosurgery portfolio, the remaining big players without a synthetic dural sealant are Medtronic and J&J (Ethicon/DePuy Synthes).

Another well-known company in neurosurgery is mid-sized Aesculap, based in Germany. Moreover, other smaller and local players could be interested.

8.1.5 Valuation of Neuroseal – not included in our price target

We calculate a rNPV of CHF 18m for Neuroseal (not part of our valuation)

Risk-adjusted NPV of CHF 18m: for illustrative purposes, our risk-adjusted NPV model for Neuroseal suggests a fair value of CHF 18m (EU & US combined) assuming 90% probability of success in EU and 80% in US. We emphasize that Neuroseal is not included in our valuation for Kuros.

Risk-adjusted NPV model for Neuroseal (not part of our valuation):

Neuroseal (Dural Sealant) - EUROPE CRANIAL & SPINAL

CHF M	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E	
EU PRODUCT SALES	**0.0**	**0.8**	**2.6**	**5.4**	**7.7**	**9.6**	**11.4**	**11.8**	**11.5**	**11.3**	**11.1**	**10.9**	**10.6**	**9.6**	**8.5**	**7.5**	**6.5**	**5.6**	
EBIT	**-1.0**	**-2.0**	**0.1**	**0.8**	**2.3**	**3.4**	**4.0**	**4.1**	**4.0**	**4.0**	**3.9**	**3.8**	**3.7**	**3.3**	**3.0**	**2.6**	**2.3**	**2.0**	
- EBIT MARGIN IN %	*NM*	*NM*	*5%*	*15%*	*30%*	*35%*	*35%*	*35%*	*35%*	*35%*	*35%*	*35%*	*35%*	*35%*	*35%*	*35%*	*35%*	*35%*	
TAXES	-0.1	-0.3	0.0	0.1	0.3	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.3	
- TAX RATE	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	
CASH FLOW	**-0.9**	**-1.7**	**0.1**	**0.7**	**2.0**	**2.9**	**3.4**	**3.5**	**3.5**	**3.4**	**3.3**	**3.3**	**3.2**	**2.9**	**2.6**	**2.3**	**2.0**	**1.7**	
- CHANGE IN %	*NM*	*NM*	*NM*	*528%*	*186%*	*45%*	*19%*	*3%*	*-2%*	*-2%*	*-2%*	*-2%*	*-2%*	*-10%*	*-11%*	*-12%*	*-13%*	*-14%*	
WACC (%)																		**14.0**	
NUMBER OF YEARS	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	
DISCOUNT FACTOR	1.00	0.88	0.77	0.67	0.59	0.52	0.46	0.40	0.35	0.31	0.27	0.24	0.21	0.18	0.16	0.14	0.12	0.11	
DISC. CASH FLOW	**-0.9**	**-1.5**	**0.1**	**0.5**	**1.2**	**1.5**	**1.6**	**1.4**	**1.2**	**1.0**	**0.9**	**0.8**	**0.7**	**0.5**	**0.4**	**0.3**	**0.2**	**0.2**	**NPV CHF M**
TOTAL DISC. CASH FLOWS 2018E-2035E																			**10**
NPV AT 90% PROBABILITY	**90%**		SPINAL INDICATION NOT YET APPROVED																**9**

Neuroseal (Dural Sealant) - USA CRANIAL & SPINAL

CHF M	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E	
US PRODUCT SALES	**0.0**	**0.0**	**0.0**	**0.0**	**0.8**	**3.9**	**8.5**	**13.4**	**17.7**	**19.7**	**20.3**	**20.9**	**21.5**	**20.3**	**19.1**	**17.7**	**16.2**	**14.6**	
EBIT	**0.0**	**-5.0**	**-2.0**	**-2.0**	**-2.0**	**0.6**	**2.6**	**4.7**	**7.1**	**8.9**	**9.1**	**9.4**	**9.7**	**9.2**	**8.6**	**8.0**	**7.3**	**6.6**	
- EBIT MARGIN IN %	*0%*	*NM*	*NM*	*NM*	*NM*	*15%*	*30%*	*35%*	*40%*	*45%*	*45%*	*45%*	*45%*	*45%*	*45%*	*45%*	*45%*	*45%*	
TAXES	0.0	-0.7	-0.3	-0.3	-0.3	0.1	0.4	0.7	1.0	1.2	1.3	1.3	1.4	1.3	1.2	1.1	1.0	0.9	
- TAX RATE	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	
FREE OPERATING CASH FLOW	**0.0**	**-4.3**	**-1.7**	**-1.7**	**-1.7**	**0.5**	**2.2**	**4.0**	**6.1**	**7.6**	**7.9**	**8.1**	**8.3**	**7.9**	**7.4**	**6.8**	**6.3**	**5.6**	
- CHANGE IN %	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*338%*	*84%*	*51%*	*25%*	*3%*	*3%*	*3%*	*-6%*	*-6%*	*-7%*	*-8%*	*-10%*	
WACC (%)																		**14.0**	
NUMBER OF YEARS	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	
DISCOUNT FACTOR	1.00	0.88	0.77	0.67	0.59	0.52	0.46	0.40	0.35	0.31	0.27	0.24	0.21	0.18	0.16	0.14	0.12	0.11	
DISC. CASH FLOW	**0.0**	**-3.8**	**-1.3**	**-1.2**	**-1.0**	**0.3**	**1.0**	**1.6**	**2.1**	**2.3**	**2.1**	**1.9**	**1.7**	**1.4**	**1.2**	**1.0**	**0.8**	**0.6**	**NPV CHF M**
TOTAL DISC. CASH FLOWS 2018E-2035E																			**11**
NPV AT 80% PROBABILITY	**80%**		PROBABILITY-ADJUSTMENT FOR APPROVAL RISK																**9**

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Appendix 1: History & Key Events

Founded in 2000 as ETH spin-off, collaboration with Baxter (terminated in 2011)

The predecessor company of Kuros was established in the year 2000 as a spin-off from the ETH Zurich. The company's proprietary technology platforms were developed from work carried out at and licensed from the ETHZ, and the California Institute of Technology (Caltech). In 2002, Kuros sold the dental activities to Straumann. Subsequently, over USD 200m were invested to develop advanced product candidates. In 2005, certain programs based on fibrin matrices, including KUR-111 and KUR-113, were partnered to US hospital supply player Baxter. Under this collaboration and license agreement, several programs were licensed to Baxter for aggregate potential milestone payments of >USD 100m plus low double-digit royalties on future product sales. In 2010, Kuros announced successful results for the first large-scale clinical study to demonstrate the efficacy of KUR-111. However, due to strategic portfolio decisions, Baxter in 2011 decided to terminate the collaboration and returned the rights to Kuros. The company subsequently focused its development activities and concentrated on two key product candidates, KUR-111 and KUR-113, and developed a synthetic dural sealant product (Neuroseal).

Going public through a reverse merger with Cytos in 2016, focus on business activities of former Kuros

Going public through a reverse merger with Cytos: in a reverse merger closed in January 2016, Cytos Biotechnology acquired Kuros and was subsequently renamed Kuros Biosciences. A new management team was selected, consisting mostly of Kuros key personnel. As a background, Cytos had originally been listed at the SIX Swiss Exchange in 2002 also by way of a reverse merger and was active in the development of immunotherapies. All these previous development activities were ceased and/or fully out-licensed and are not part of our valuation range. Finally, a 100:1 reverse stock split was completed in June 2016.

Addition of complementary product range (MagnetOs) through acquisition of Xpand

Acquisition of MagnetOs product line: beginning of 2017, Kuros acquired 100% of privately-held Xpand Biotechnology B.V., headquartered in Bilthoven/NL in an all share deal (closed as of January 25th, 2017). The acquisition provided Kuros with a complementary bone graft product (MagnetOs) and an operational infrastructure in the EU (Netherlands) with certified and GMP-controlled manufacturing capabilities, which can be used as a distribution hub.

Share swap deal structure to fund Xpand acquisition

To fund the Xpand deal, Kuros is issuing up to 2.105m new shares out of authorized capital, thereof 1.365m were delivered at the time of closing. The remaining shares are deliverable upon certain milestones of the MagnetOs putty formulation (0.37m upon EU approval, 0.37m upon US approval) which we expect to happen in FY-18E. Following completion of the full transaction, former Xpand shareholders will hold 29% of Kuros; following the first tranche which was due upon closing, the shareholding amounts to 21% (non-diluted; implied market cap of CHF 97m post-closing, based on a share price of CHF 15.0). The three founders and shareholders of Xpand are joining the Kuros team, one as a Board member, and two in executive functions (see page 11).

CHF 17m equity funding in 2017 to support MagnetOs launch and R&D

Equity raise in June 2017: the company raised gross proceeds of CHF 17m through the placement of 1.35m new shares at a price of CHF 12.50/share. The proceeds were primarily intended to support commercial activities for the launch of MagnetOs.

SEDA agreement (up to CHF 30m)

SEDA agreement: in November 2017, Kuros announced a Standby Equity Distribution Agreement ("SEDA") with a fund managed by Yorkville Advisors, which commits to provide to Kuros up to CHF 30m in equity financing in exchange for shares over 3 years (ending on Dec 1, 2020). The financing is at the discretion of Kuros and can be drawn in tranches of up to CHF 1m each. The shares in exchange will be placed at a 5% discount to the market price. In conjunction with the recent capital increase (see below), the Company on Nov 8, 2018 stated that they will abstain from further draw-downs under the SEDA.

Capital increase of CHF 16m to progress Phase II development of KUR-113 and support MagnetOs roll-out

Funding round in December 2018: In December 2018, Kuros raised CHF 16.1m in equity (gross proceeds) through the issuance of 6.455m new registered shares which were placed to existing and new investors at CHF 2.50/share. With the proceeds raised in the capital increase, the commercialization of MagnetOs in the US and selected geographies in Europe can be progressed as well as the phase II development of the proprietary fibrin-PTH (KUR-113) product in spinal fusion can continue as planned.

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Data used in this report are sourced from company data, Bloomberg, and OCTAVIAN estimates. When used, additional data sources are indicated.

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