HUMA Media Technology

GMP-Certified Universal Multi-purpose Media For Adult Stem Cells

ISO 13485 Certified

HUMA Media Custom Production is available

ROKIT HEALTHCARE

Email: info@rokit.co.kr | **Tel:** +82 1899 7296 | **Web:** rokithealthcare.com

The Unprecedented Media for Human Primary MSC culture

Meticulously Phased Smart Media

* Cell attachment (Phase I)
* Stabilization/proliferation (Phase II-III)
* Proliferation & Stemness Maintenance (Phase IV)

Product	HUMA-Media Tech Xeno-Free GMP-certified MSC Media Kit		
Application	Cell culture and expansion	Storage	Shelf-life 6 Months at 4 °C
Cell Type	Human Primary/Stem Cells; Neonatal Dermal Fibroblasts, Bone-Marrow MSC, Adipose derived MSC, Smooth Muscle Cells, Dermal Papilla Cells, Warton's Jelly MSC, Dental Pulp Stem Cells	Notes	No plate coating needed
		Grades	500 ㎖ RUO (custom manufacturing available)

HUMA Media Tech Xeno-Free MSC Media Kit: Media I & II

※ Phase I Media & Phase III Media can be custom manufactured

HUMA-Media Recommended Protocol 1 (Media I: 500㎖ , Media II: 500㎖)

Phase I (Day 0) & Phase II (Day 2)

Mix Media I & Media II at a 1:1 ratio to make a Hybrid Media. Use desired volume (i.e. 10 ㎖) for seeding. On day 2, without discarding existing Media, just add 75% of the media volume at seeding (i.e. 7.5 ㎖).

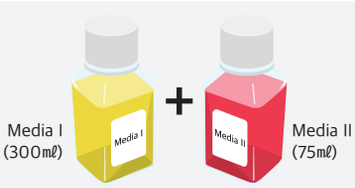
Phase III (Day 4~)

On day 4, discard entire existing Media (i.e. 17.5 ㎖) and add fresh 10 ㎖ of Hybrid Media. From day 4, replace Hybrid Media for every 2 days.

HUMA-Media Recommended Protocol 2 (Media I: 500㎖ , Media II: 500㎖)

Phase I (Day 0) & Phase II (Day 2)

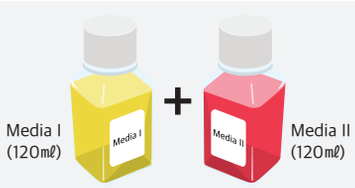
Media I	300㎖
Media II	75㎖
Final Vol(㎖)	375㎖



Mix Media I (300 ㎖) & Media II (75 ㎖) at a 4:1 ratio to prepare Phase I Media. Use desired volume (i.e. 10 ㎖) for seeding. On day 2, without discarding existing Media (i.e. 10 ㎖), just add Phase I Media with 75% of initial seeding volume (i.e. 7.5 ㎖).

Phase III (Day 4~6)

Media I	120㎖
Media II	120㎖
Final Vol(㎖)	240㎖



On day 4, prepare Phase III Media by mixing Media I (120 ㎖) & Media II (120 ㎖) at a 1:1 ratio. On day 4, discard entire Media in the dish and freshly add Phase III Media same as initial seeding volume (i.e. 10 ㎖).

Phase IV (Day 6~)

Media I	-
Media II	305㎖
Final Vol(㎖)	305㎖

From day 6, Media II is Phase IV Media. Discard entire Media in the dish and add the same volume of Phase IV Media (i.e. 10 ㎖). From day 6, change Media for every 2 days.

*10㎖ of Media per dish as an example volume

HUMA media test

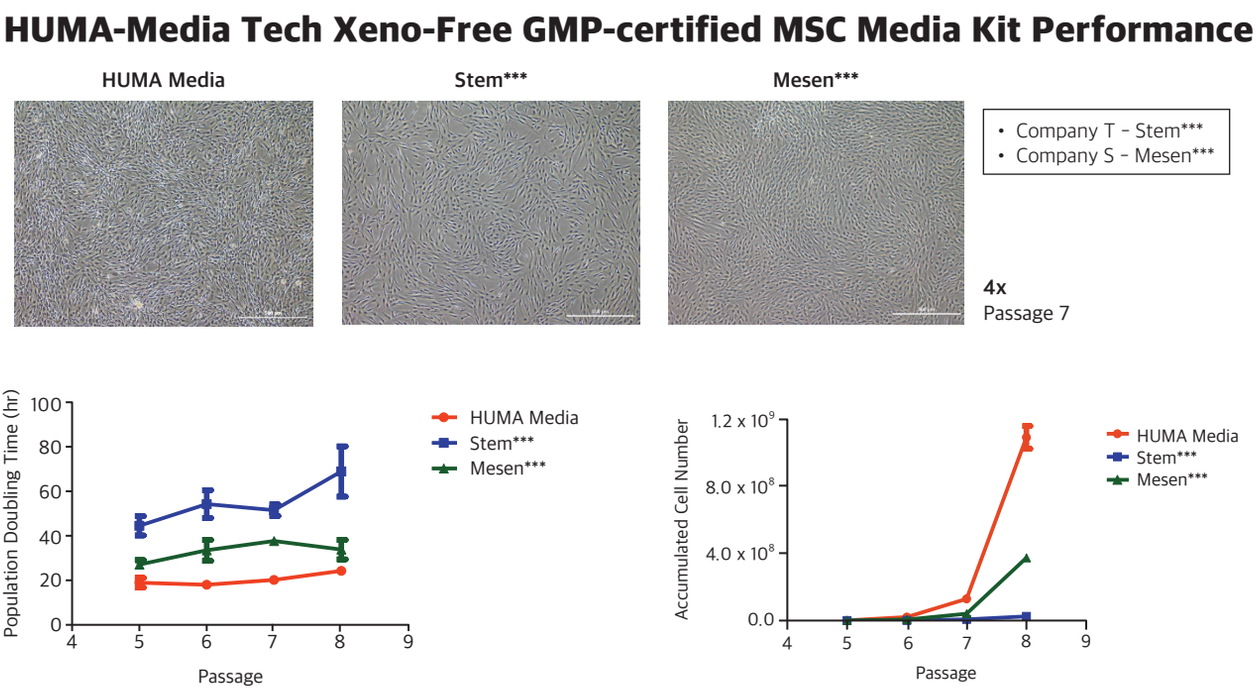


Fig.1 HUMA Media growth rate comparison with commercially available serum free media | HUMA media growth rate and accumulated total cell number were compared with two commercially available serum free media products, Stem*** and Mesen*** up to passage 8. PDT (Population Doubling Time) was around 20–24 hrs, at least 2 folds faster than competing products throughout the entire culturing and passaging periods. Accumulated total cell number at passage 8 was at least 3 folds higher than competing commercial serum free media products.

Proliferation

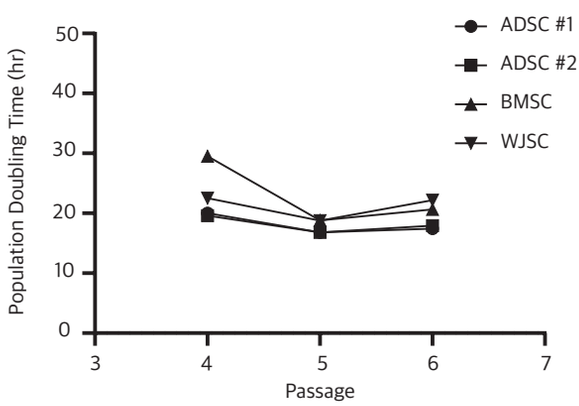


Fig.1 | Population doubling time is tightly maintained during extended passaging period for all three MSC types.

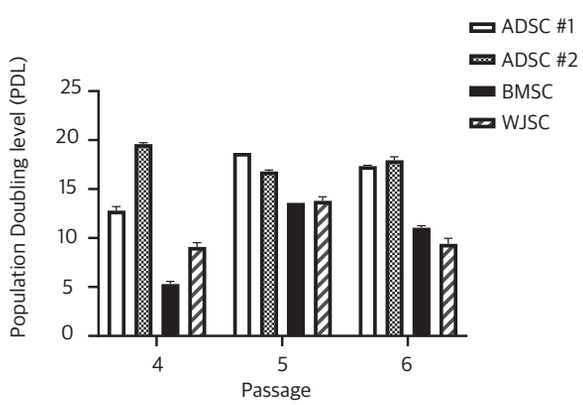
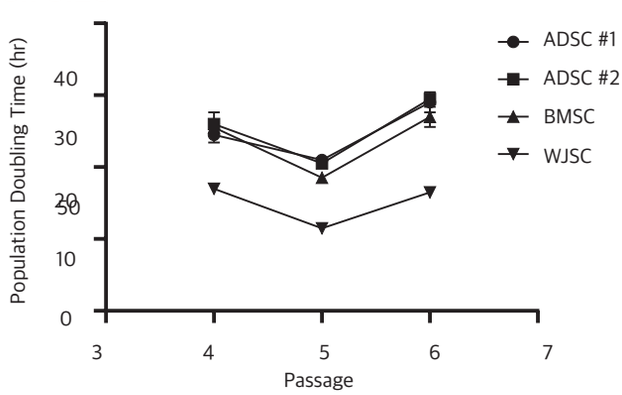


Fig.2 | Population double level (PDL) showed high performance; All cell types showed doubling within 20 hrs range during late passage stages. BMSC and WJSC showed average 10 hrs PDL.

Cell size



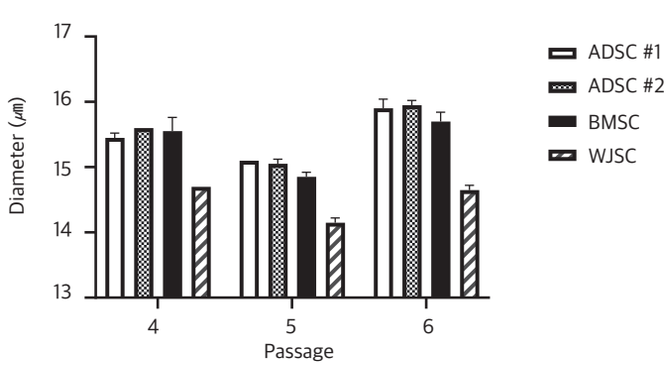


Fig.3 | Endogenous MSC size is known as near 10 ㎛ range and primary MSC size after first passage has known to be 14 ㎛~20 ㎛. Cell size is directly related to cell senescence and performance as an adult stem cell. MSC culture in HUMA-media over 7 passages shows excellent cell size maintenance in all three stem cell types; Bone Marrow MSC, Adipose derived MSC, and Wharton's Jelly MSC.

Cell Viability

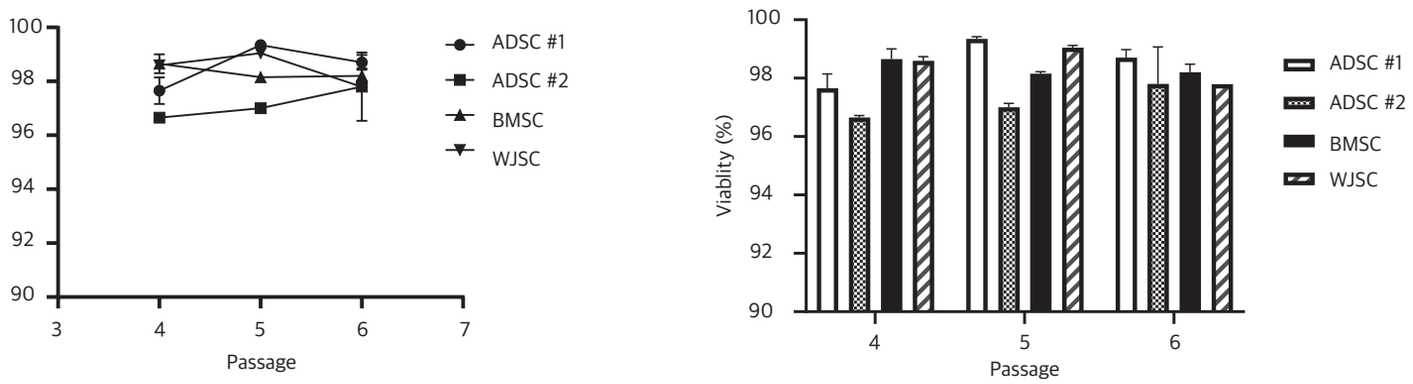


Fig.4 | In HUMA-media, cell viability has maintained over 98% in relatively old passaging stage for all three MSC cell types.

Cell surface marker (FACS)

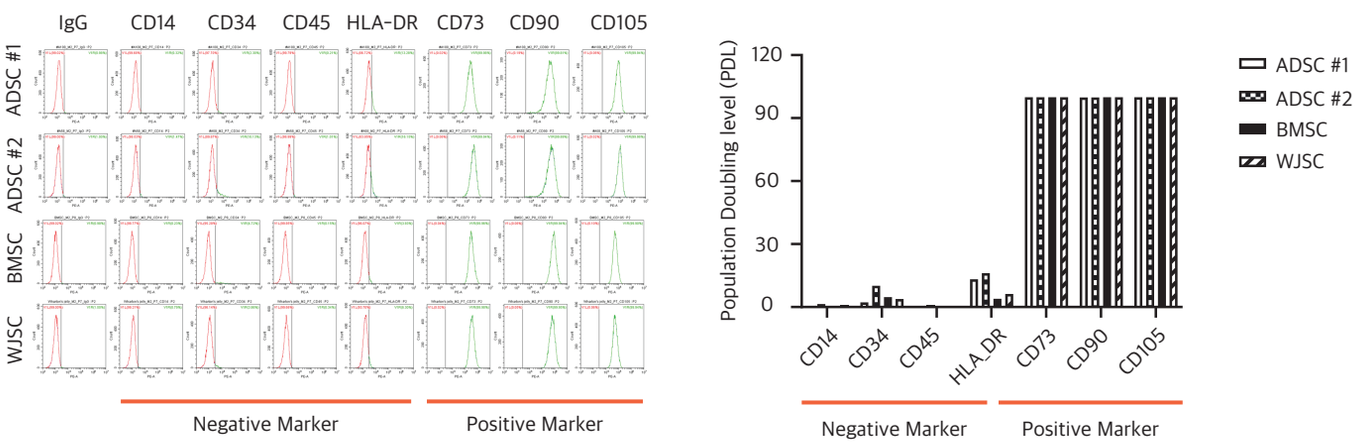


Fig.5 | Highly distinctive MSC surface marker has been identified for passage 7 cell types (BMSC, ADSC, and WJSC).

Differentiation

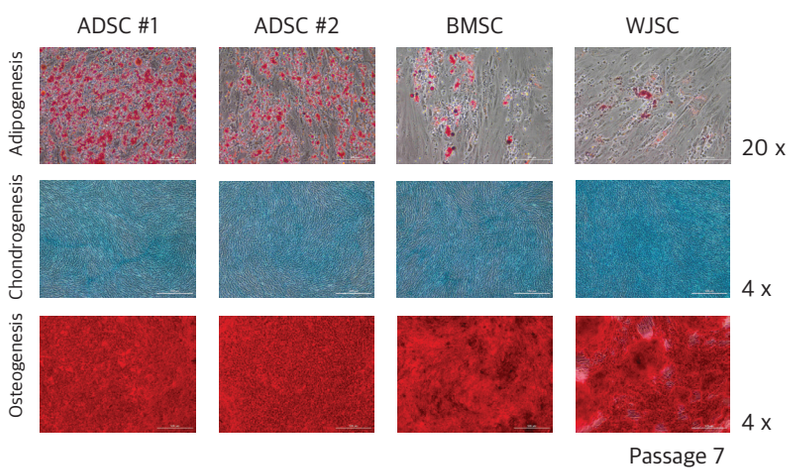


Fig.6 | Expansion with HUMA-Media retains tri-lineage passage 5, 6, 7 differentiation potential.