ASEA™

This material is intended for a US audience only.

Hunter Dean 杭特狄恩

VP Production Operations

生產營運副總裁

ASEA®

We power potential™

Quality checks 品質檢查

- **128,745** bottles of ASEA™ Redox Cell Signaling Supplement
  128,745瓶信號分子水
- **26,520** tubes of RENU28™
  26,520條RENU28活膚凝膠

Total lab tests
實驗室測試總量

4,969 ASEA™ Redox Cell Signaling Supplement bottles
4,969瓶ASEA REDOX信號分子水

2,645 RENU28™ tubes
2,645條RENU28活膚凝膠

380 Intensive Redox Serum tubes
380條水美漾濃縮菁華露

REDOX Center certifications and audits:
REDOX生產中心認證與審核:

What do they mean?
標章所代表的意思?

- FDA listed 美國食品藥物管理局登記
- NSF registered 美國國家衛生基金會註冊
- NSF sport 美國國家衛生基金會運動認證
- GMP compliant 符合GMP規範
- Kosher certified 猶太潔食認證
- Halal certified 清真認證


A
S
E
A
STERLING

Redox

(Reduction)

(還原)

(Oxidation)

(氧化)

“Life is nothing, but electrons looking for a place to rest.”

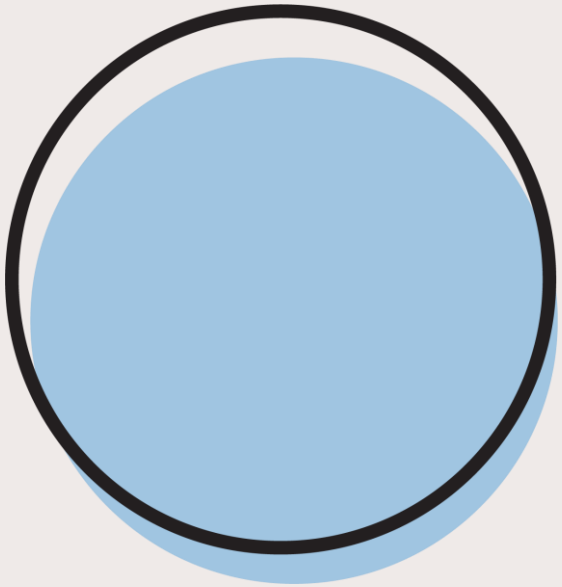
生命就是能量的獲取與釋放的過程

Albert Szent-Gyorgyii

阿爾伯特·聖捷爾吉

Electron: a very small negatively charged particle. It cannot be broken down into anything smaller. It can move almost at the speed of light.

電子: 是一種非常小的帶負電荷的粒子。它無法被分解成更小的組成部分。它能夠以接近光速的速度移動



Electron transfer: a process by which an electron moves from one atom or molecule to another.

電子轉移: 是電子從一個原子或分子移動到另一個原子或分子的過程。

“Life is nothing, but electrons looking for a place to rest.”

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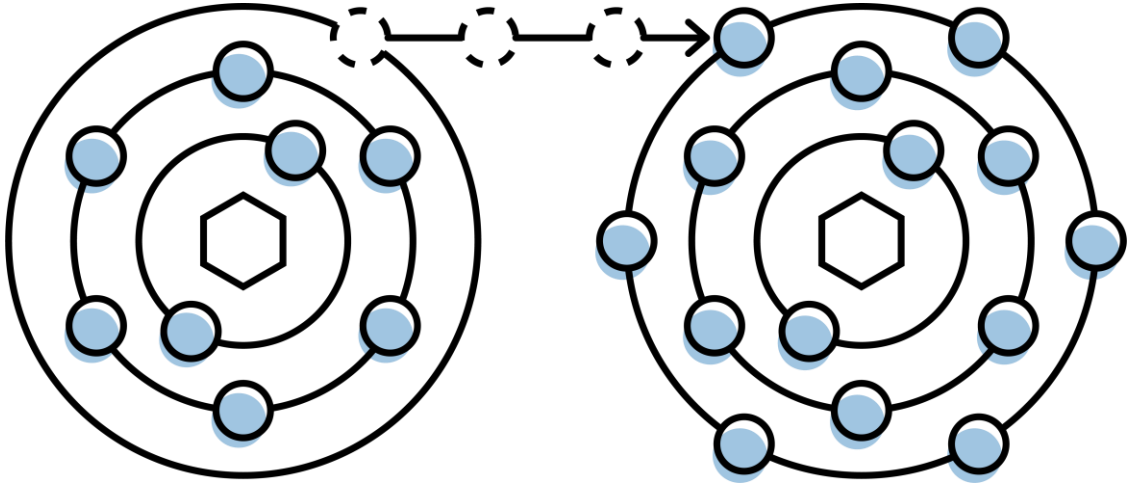
Redox



This is the atom giving up an electron

這是原子釋放出一個電子

Oxidation

氧化

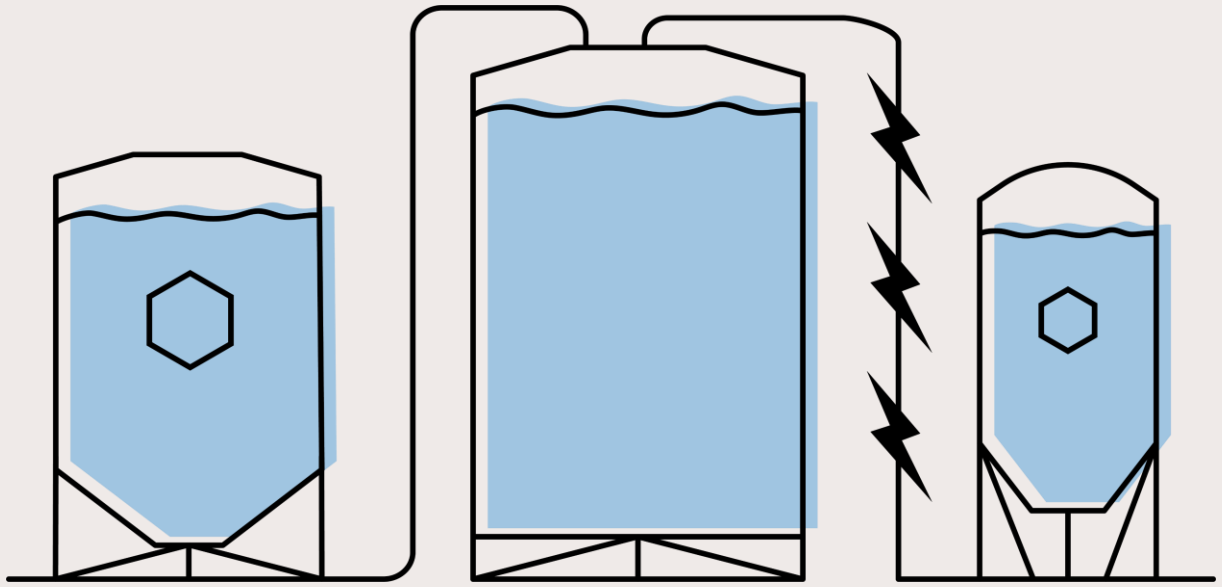
This is the atom gaining an electron

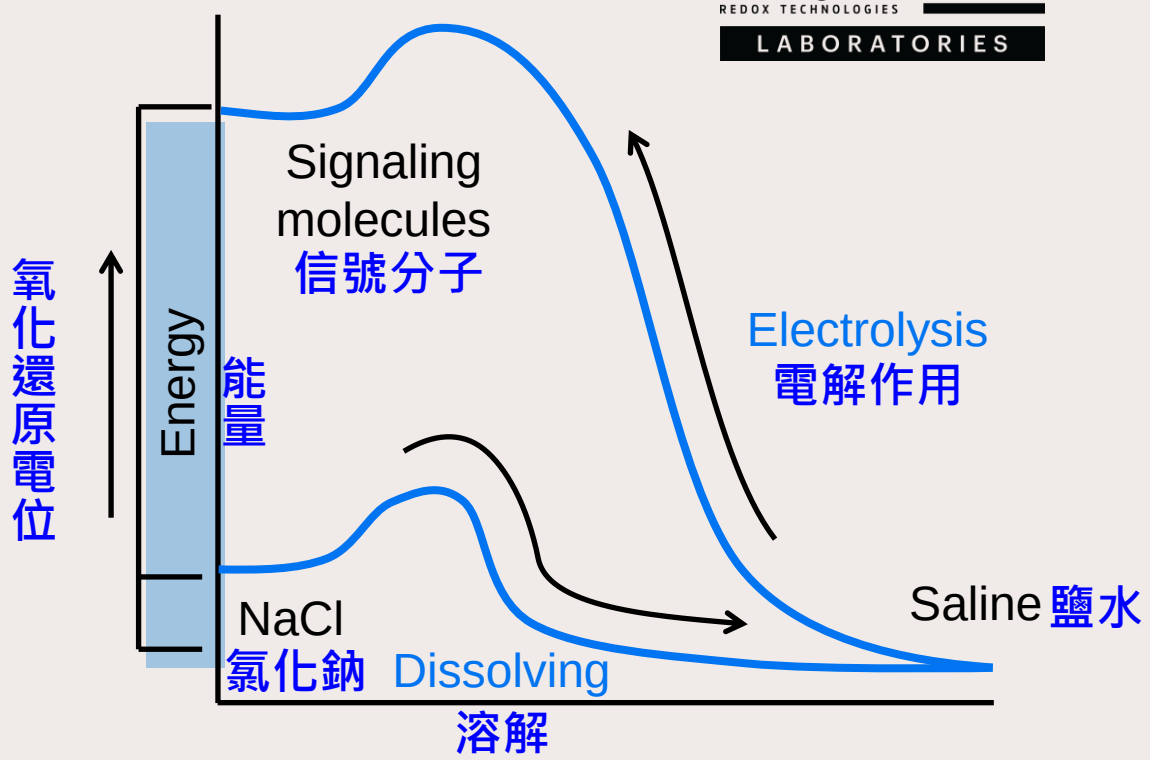
這是原子獲得一個電子

Reduction

還原

Making signaling molecules
製作信號分子





Cell signaling
氧化還原信號分子

Tiny molecules 極小分子

Absorption 好吸收

On/Off switch 啟動的開關

Cascading effect 梯瀑效應

Resilience to stress and overall wellness
抗壓能力和整體健康

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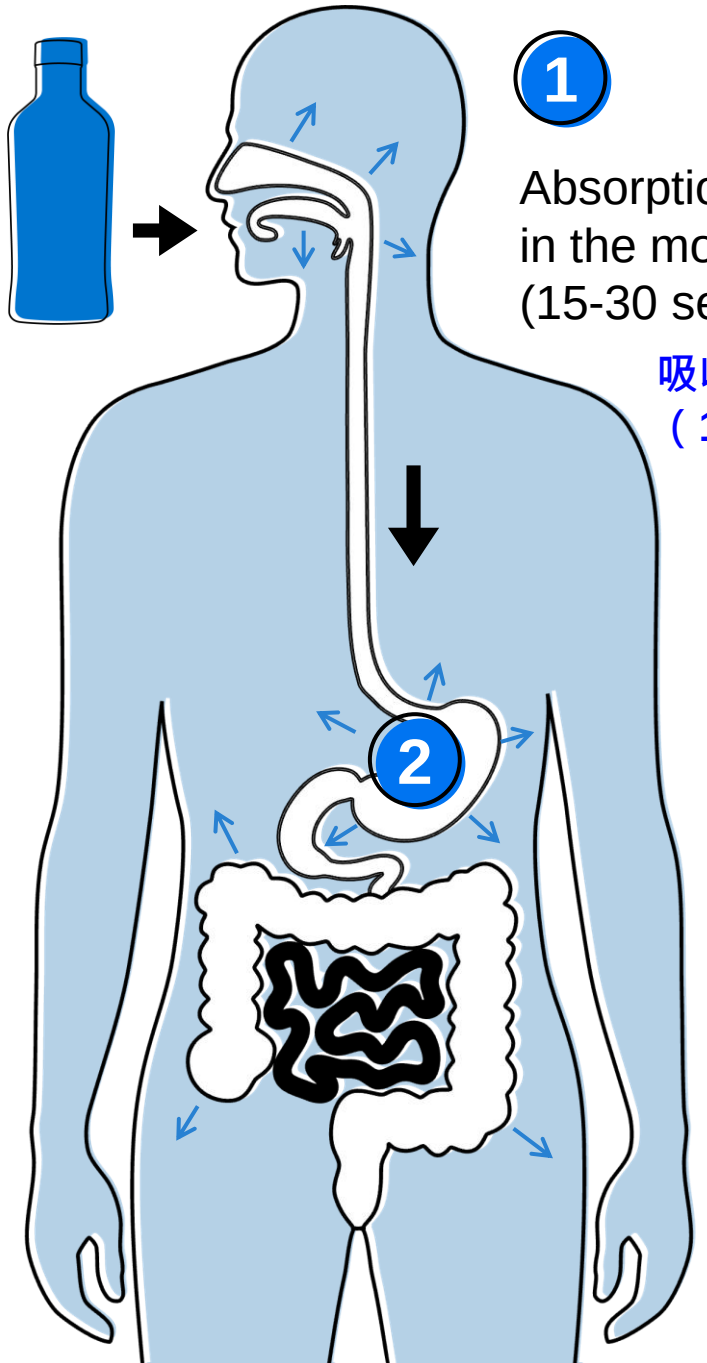
Cell signaling
細胞信號



Absorption starts in the mouth (15-30 seconds)

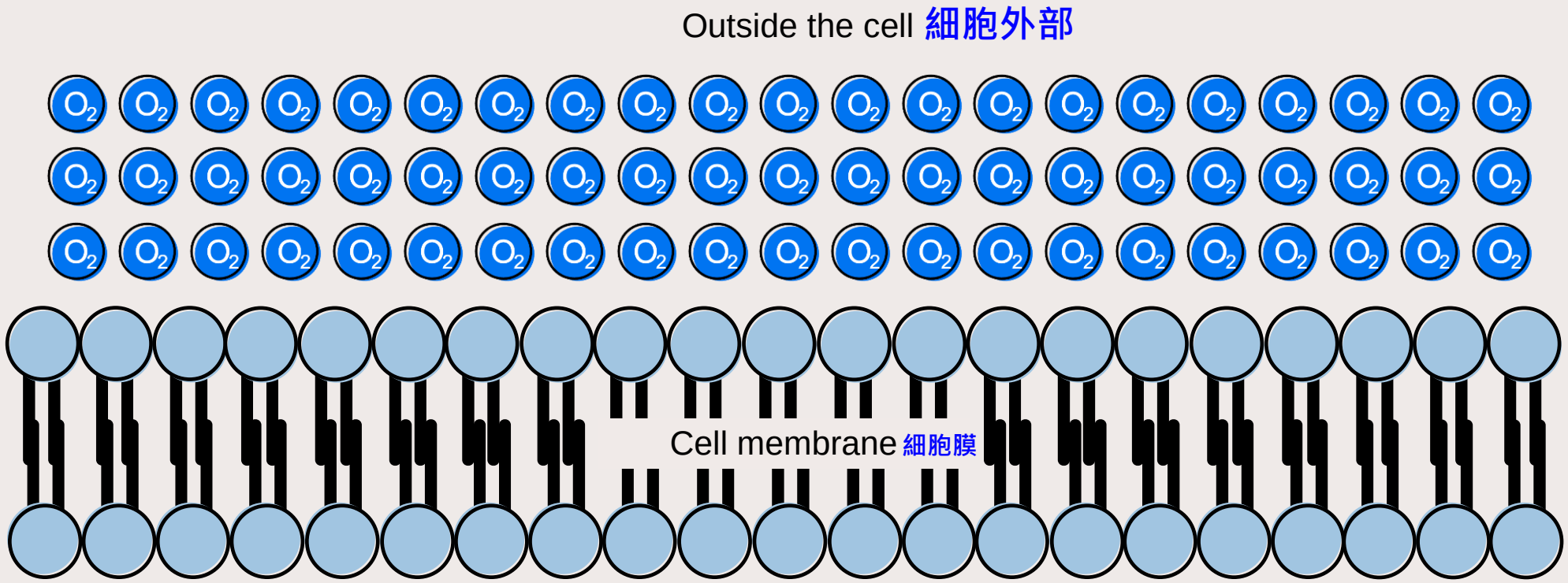
吸收過程從口腔開始（15-30秒）

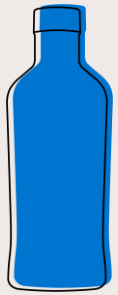
Signals sent throughout the body by non-targeted cascading effect

非針對性的”梯瀑效應”將信號傳遞至全身各部位

What does “ARS is absorbed” mean?

“信號分子被吸收了” 是什麼意思？



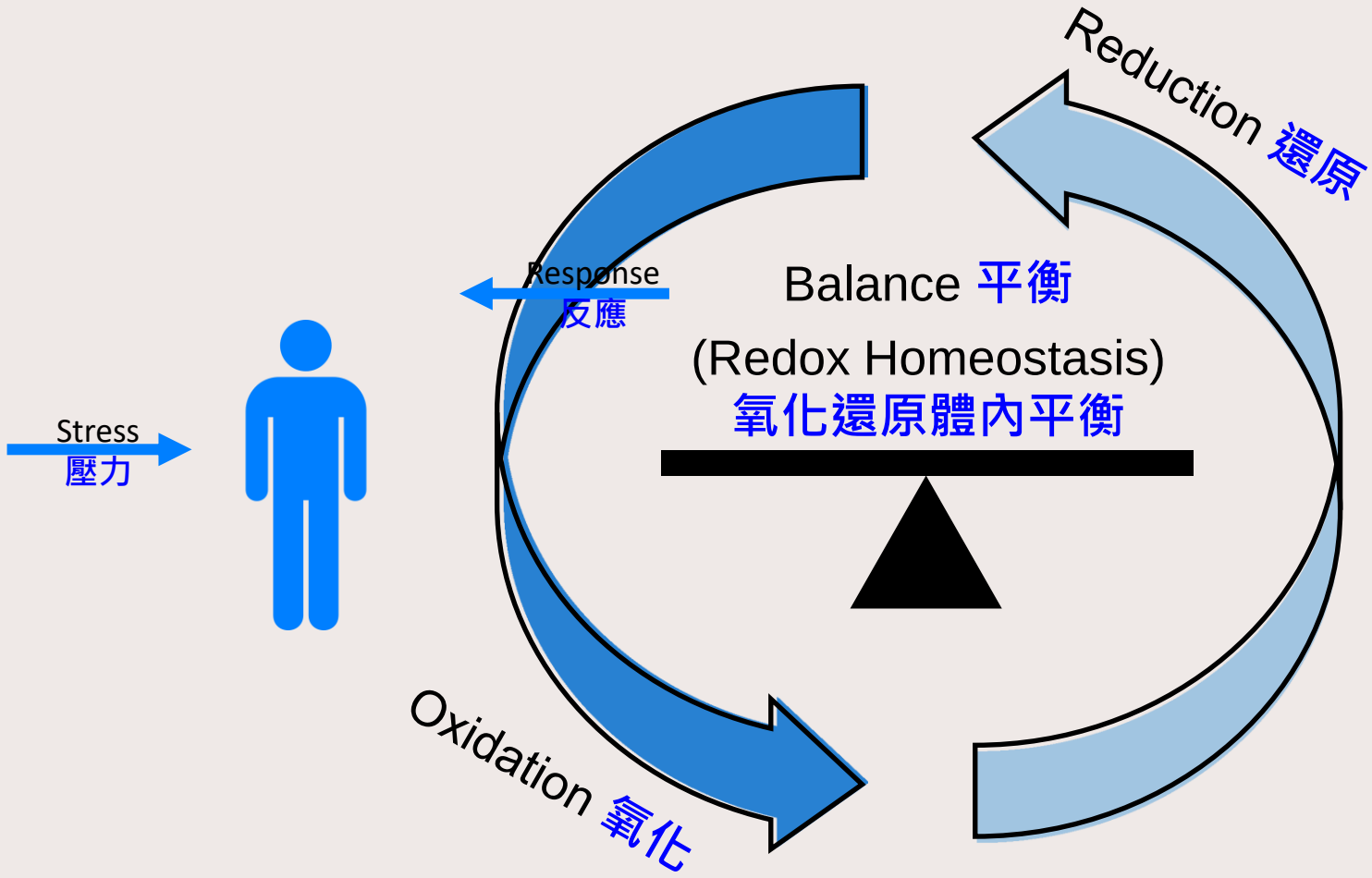


信號分子
Signaling molecules

Flip switch “ON”

啟動開關

細胞訊號
Cell signaling
cascade
梯瀑效應



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Cell signaling
氧化還原信號分子

Tiny molecules 極小分子

Absorption 好吸收

On/Off switch 啟動的開關

Cascading effect 梯瀑效應

Resilience to stress and overall wellness
抗壓能力和整體健康

Taueret Laboratories Publication – 2017

Taueret 實驗室報告 - 2017

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Taueret Lab Study Taueret 實驗室研究

Human Trials
人體實驗

60 Human participants took part in a double-blind, placebo, controlled test. Test spanned 8 weeks.

60 位參與者參加了雙盲、安慰劑、對照測試。測試持續了 8 週

Various Genes
多樣性基因

Several genes tied to key functions were observed during the study. These gene functions cascade into a variety of important pathways.

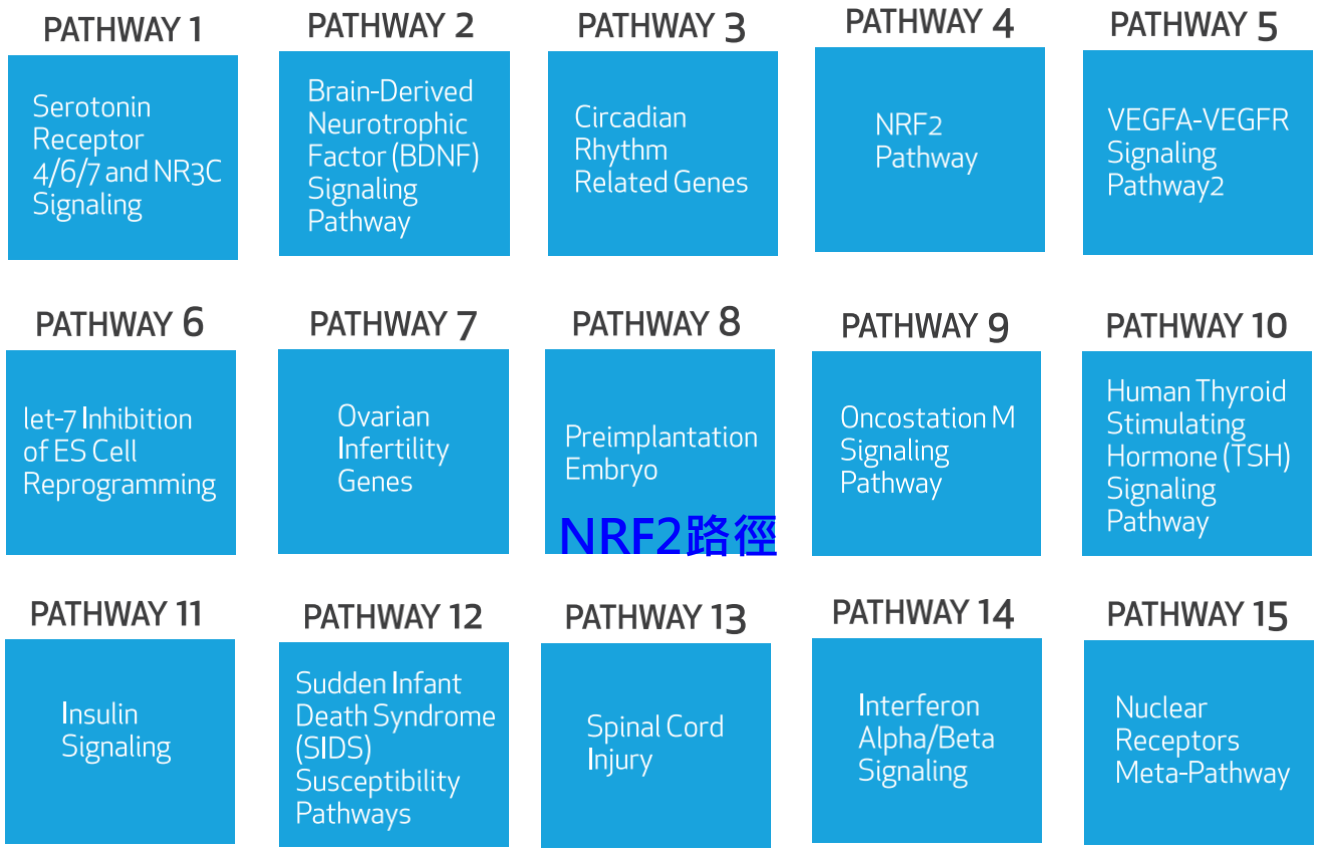
研究期間觀察到了與關鍵功能相關的幾個基因。這些基因功能級聯成多種重要途徑

Increased Transcription
增加轉錄

While on ASEA, group saw increase in transcript abundance. Once off ASEA, transcript abundance returned to normal levels.

在 ASEA信號分子水上，研究小組發現轉錄大量增加。一旦離開 ASEA信號分子水 ，大量轉錄就恢復到正常水平

Taueret Lab Study Taueret 實驗室研究



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NRF2 University Research
NRF2 大學研究

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NRF2 Pathway NRF2路徑

Master Switch
主要的開關

NRF2 pathway is a principal “on/off” switch that regulates several genes.

NRF2 路徑是調節多個基因的主要「開/關」

Gene Modulation
基因調控

Genes regulated by NRF2 are responsible for resilience to oxidative stress.

NRF2 調控的基因負責抵抗氧化壓力

Combat Inflammation
對抗炎症

Genes responsive to NRF2 work to reduce inflammation resulting from oxidative stress.

對 NRF2 敏感的基因可以減少氧化壓力引起的發炎

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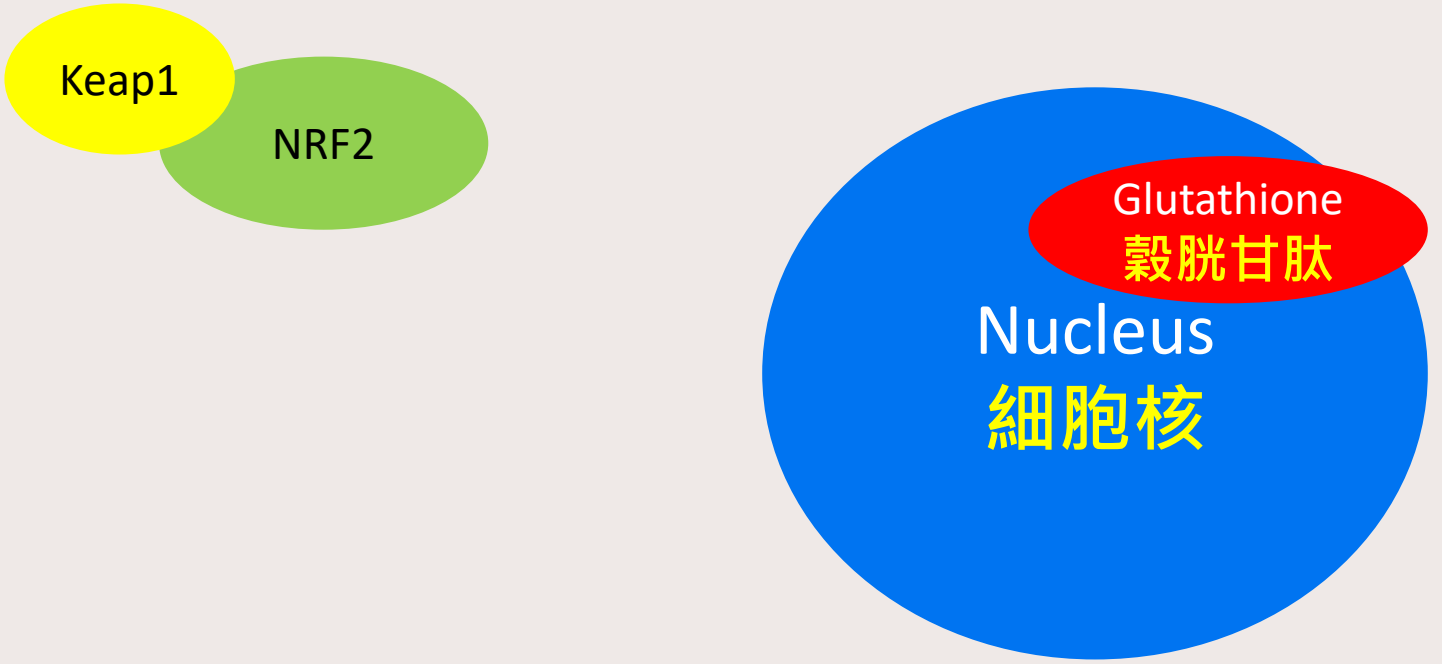
NRF2 Research NRF2研究

UNIVERSITY OF BATH

英國巴斯大學

WESTERN SYDNEY UNIVERSITY

西雪梨大學



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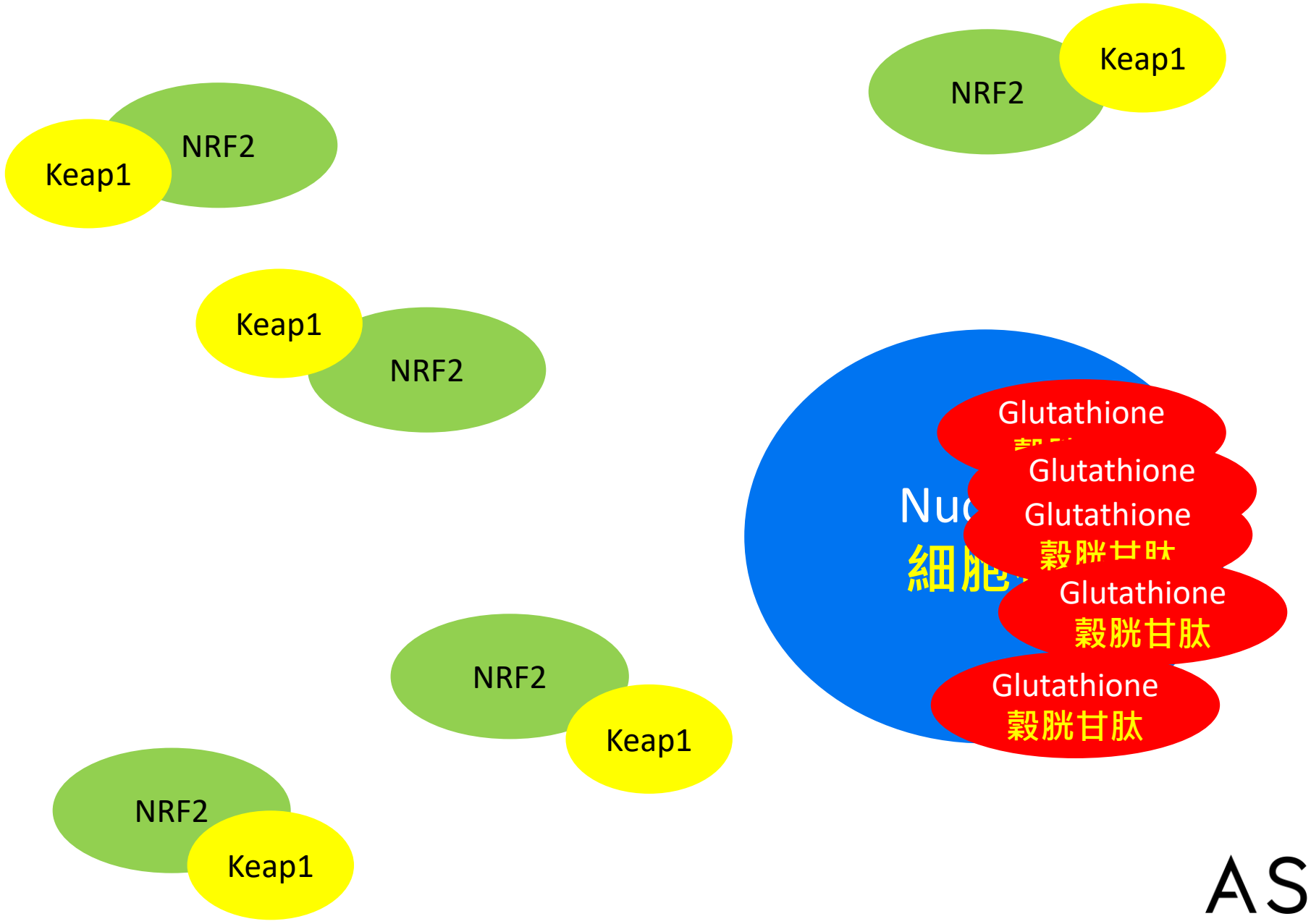

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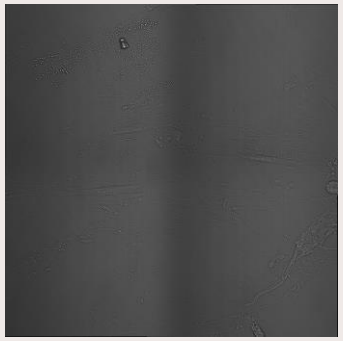
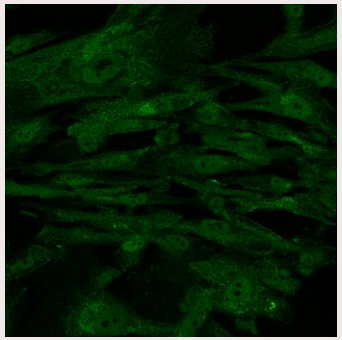
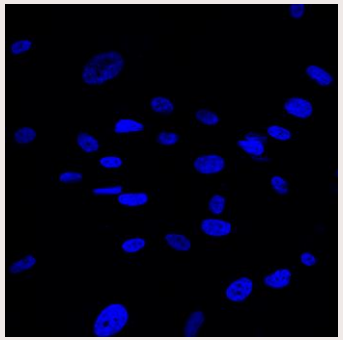
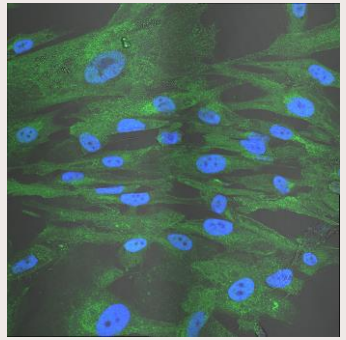
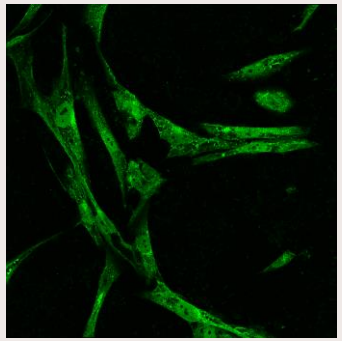
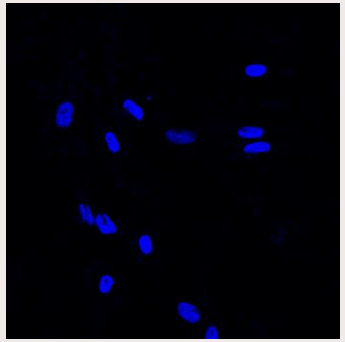
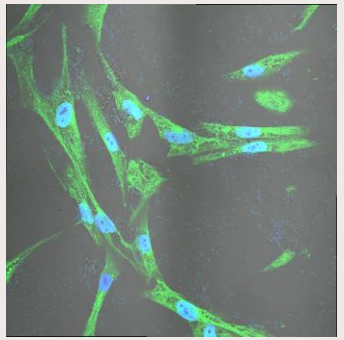
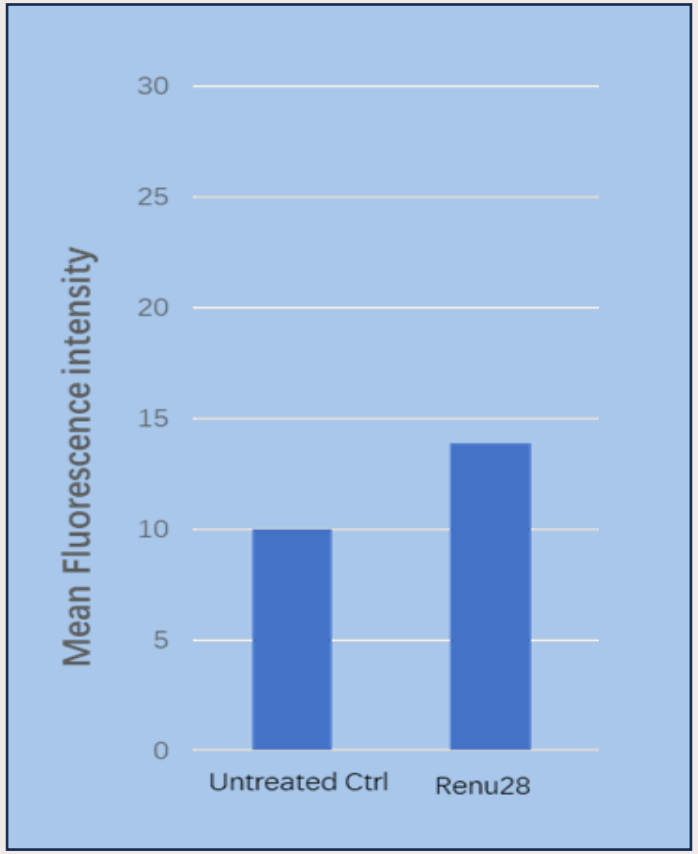
UNIVERSITY OF BATH 英國巴斯大學

Quantification of Nrf2 translocation to nucleus
Nrf2 轉位至細胞核的定量

	Dark field 暗視野	Nrf2	DAPI	Nrf2 + DAPI
Untreated 未處理的 Ctrl 控制組				
Renu28				



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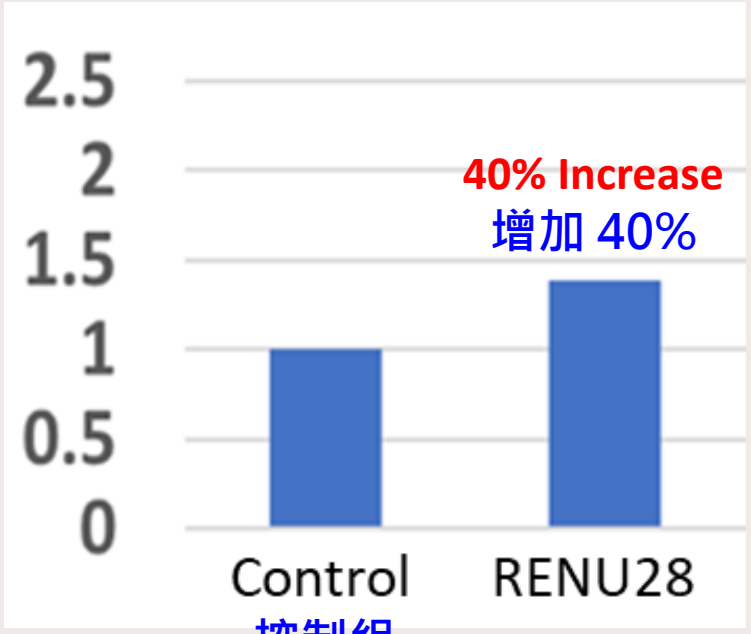
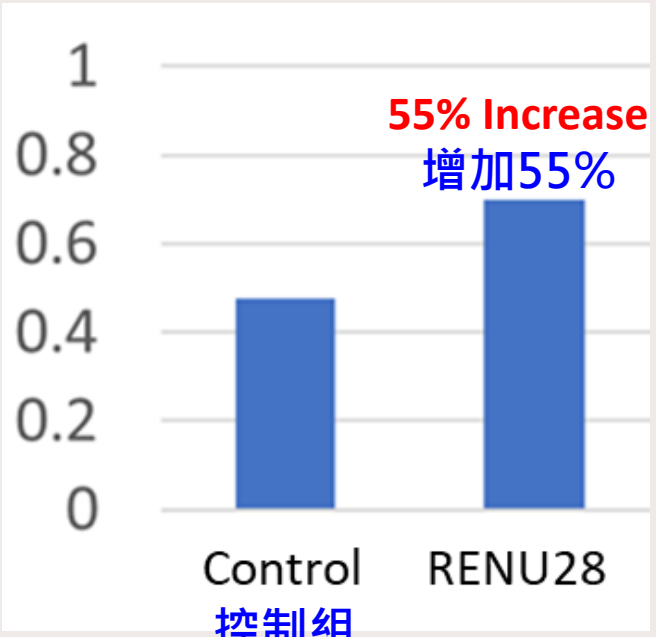
UNIVERSITY OF BATH

GSH levels with no BSO* treatment
未經 BSO* 介入的穀胱甘肽(GSH) 水平



GSH levels with BSO* treatment
BSO* 介入後的穀胱甘肽(GSH) 水平



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WESTERN SYDNEY UNIVERSITY 西雪梨大學

Nrf2-regulated antioxidant genes (ARE):
Nrf2 調控的抗氧化基因 (ARE)

- Heme Oxygenase-1 (HO-1)
  血紅素加氧酶-1 (HO-1)
- Glutamate-cysteine ligase catalytic subunit (GCLC)
  麩胺酸-半胱胺酸連接酶催化亞基 (GCLC)
- Glutathione S-transferase P (GSTP1)
  穀胱甘肽 S-轉移酶 P (GSTP1)
- NAD(P)H quinone oxidoreductase 1 (NQO1)
  NAD(P)H 醌氧化還原酶 1 (NQO1)
- Superoxide dismutases (SOD) 超氧化物歧化酶(SOD)

	Cell Viability 細胞活力	NRF2 % activation NRF2 激活%
Control 控制組	99%	100%
ASEA Redox ASEA信號分子水	102%	**160%**

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NRF2 Summary NRF2總結

In both studies, Redox Signaling Molecules in ASEA Redox and Renu 28 increased the activation of the NRF2 pathway by up to 60%.
在這兩項研究中，ASEA Redox 和 Renu28 中的氧化還原訊號分子將 NRF2 路徑的活化提高了 60%

NRF2 is the “Master Switch” regulator for combatting oxidative stress.
NRF2 是對抗氧化壓力的「主開關」調節器

The activation of NRF2 is associated with mechanisms responsible for antioxidant protein production.
NRF2 的活化與負責抗氧化蛋白產生的機制有關

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Redox Signaling Molecules and C. Elegans

氧化還原訊號分子與線蟲

University of Valencia, Spain

西班牙巴倫西亞大學

Prof. Consuelo Borras PhD

University of Valencia, Spain 西班牙巴倫西亞大學

Professor - Dept of Physiology, Physiology of Aging, Faculty of Medicine

醫學院生理學系、老化生理學教授

- Centenarians distinct genetic and epigenetic characteristics.百歲老人獨特的遺傳和表觀遺傳特徵
- Molecular basis of aging and possible interventions to achieve a successful aging.
  老化的分子基礎和可能性介入來實現成功老化

Scientific partner in the evaluation of electrolyzed water in live organisms

科學合夥人評估電解水在活體的效用

Study Model: *Caenorhabditis elegans* 研究模型：*Caenorhabditis*線蟲

- C. elegans - worms found in rotting fruits, stems, and compost
  C. 線蟲 - 在腐爛的水果、莖和堆肥中發現的蠕蟲

- Lifespan: 18–20 days 壽命：18-20天

- Transparent throughout its life
  整個生命週期都是透明的
- Molecular signals controlling its development also found in humans
  在人類中也發現了控制其發育的分子信號
- Model for aging: short lifespan and simple physiology
  老化模型：壽命短、生理簡單
- Many of the genes: similar in humans 許多基因：與人類相似

Study Design 實驗設計

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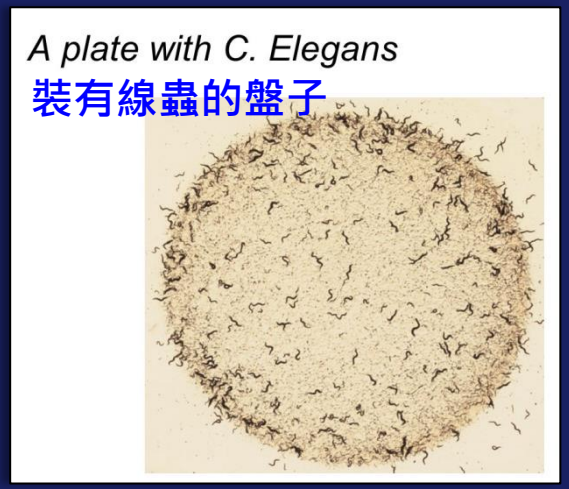
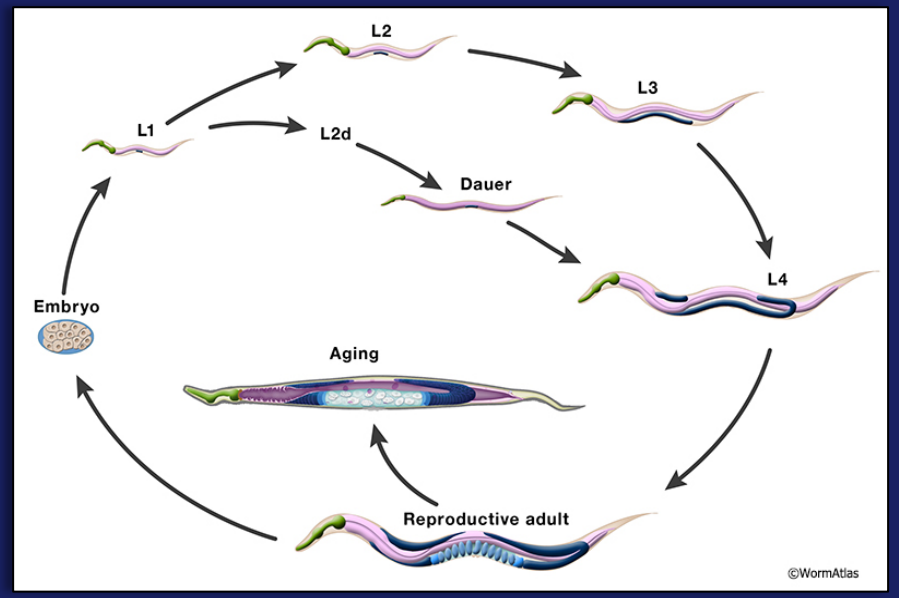


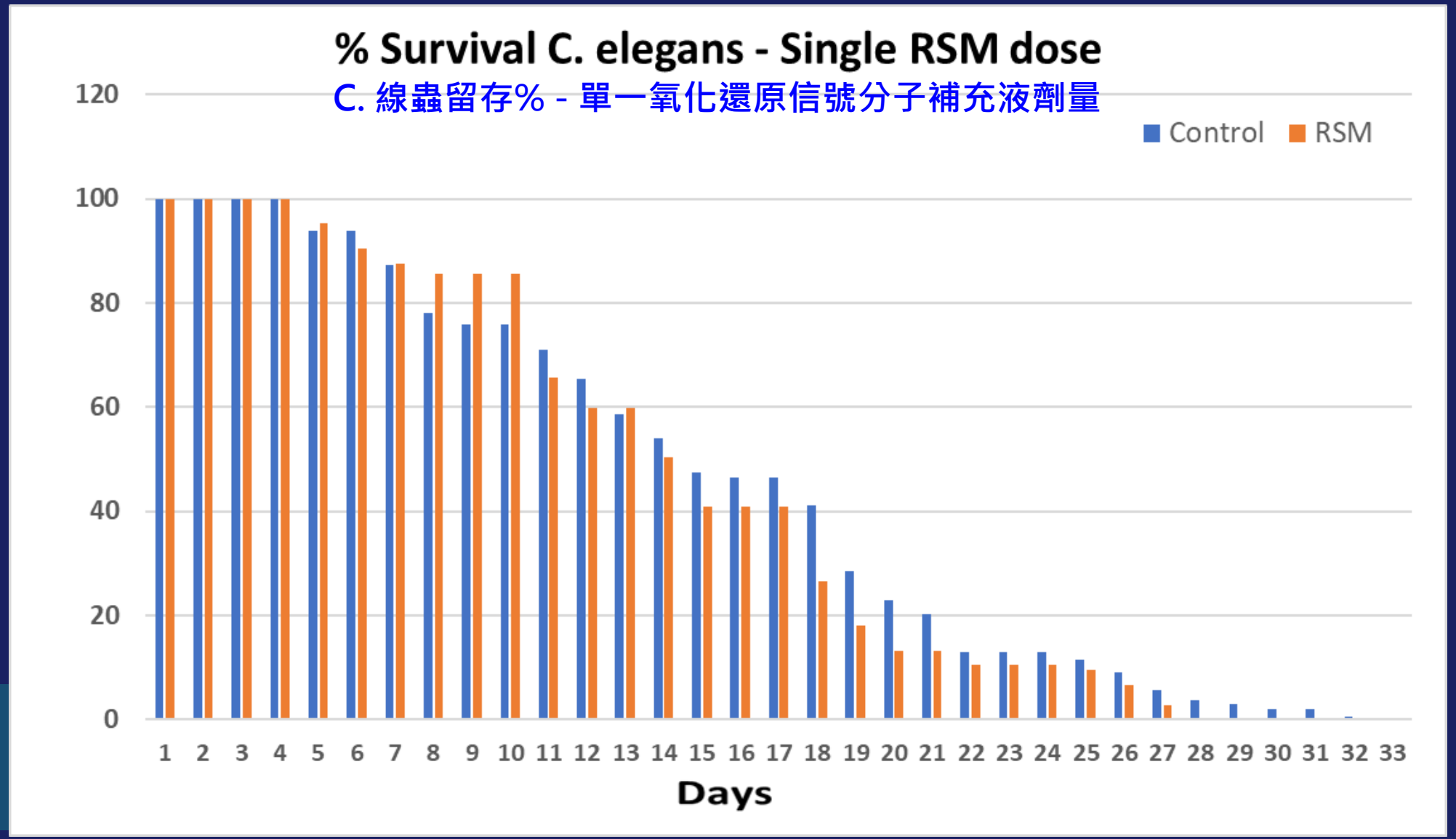


C. elegans life cycle **線蟲生命週期**

- Add to the plate 添加到盤子裡
- Single dose in the beginning 開始時單劑量 → Longevity 壽命
- Multiple doses: 3x/week 多次劑量：3 次/週 → Longevity 壽命

Results
結果

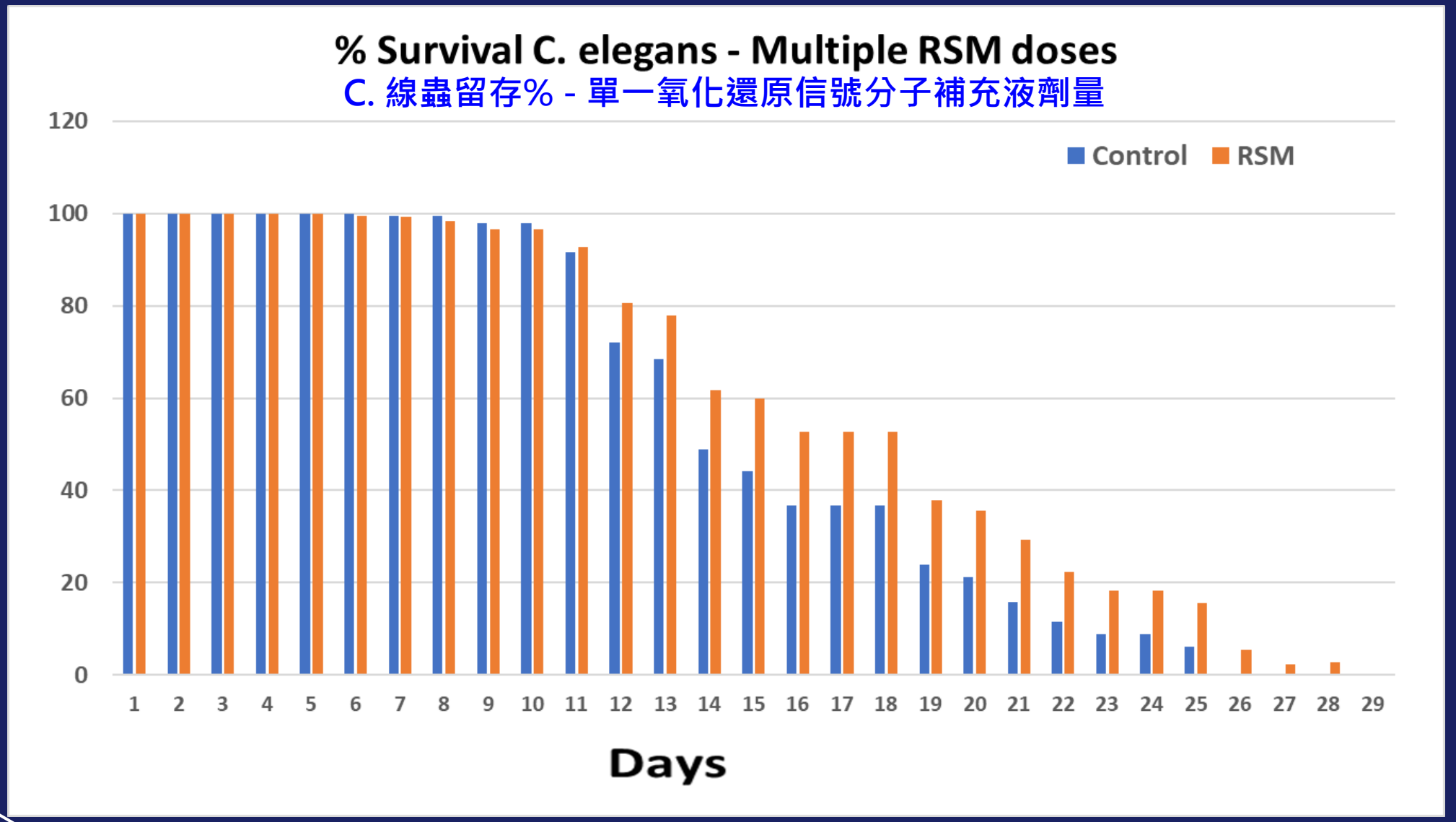
Single Dose
→ Longevity
單一劑量→ 壽命



The supplement did **NOT** produce any effect on lifespan when added just once at the beginning of the experiment.
在實驗開始時僅添加一次該補充劑**不會**對壽命產生任何影響

Results
結果

3x/week
→ Longevity
3次/週→壽命



The supplement did produce an effect on lifespan by increasing worm's lifespan.
該補充液確實透過延長蠕蟲的壽命而對壽命產生影響

Transcriptomics 轉錄組學

Explains the mechanism of action of the RSM supplement in relation to biological processes in *C. elegans* exposed to the product

解釋氧化還原信號分子補充液與接觸該產品的線蟲生物過程相關的作用機制

Characteristics of an organism is stored in the DNA 生物體的特徵儲存在 DNA 中 →

DNA produces RNA

DNA產生RNA

RNA mirrors the DNA information

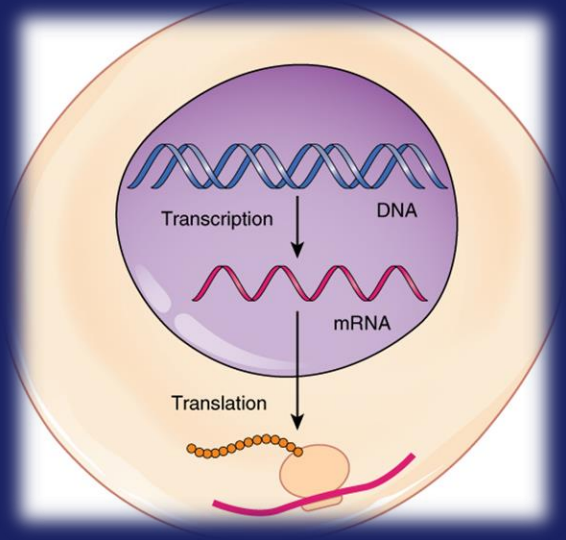
RNA反應DNA訊息

Used to produce protein

用於生產蛋白質

Transcription 轉錄

Translation 轉譯



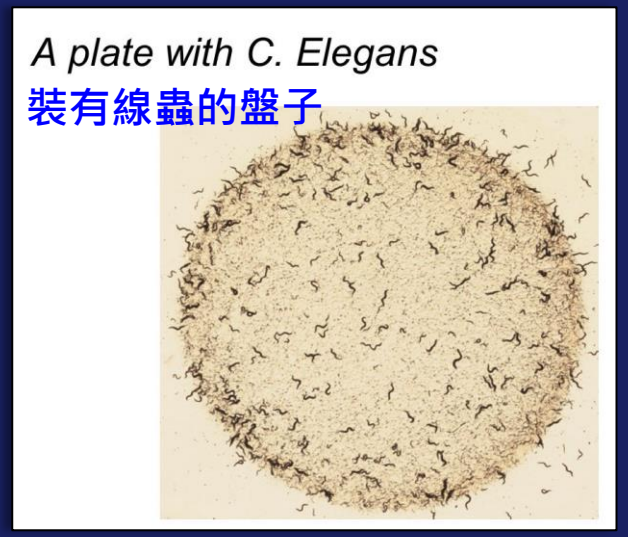
Transcriptomics

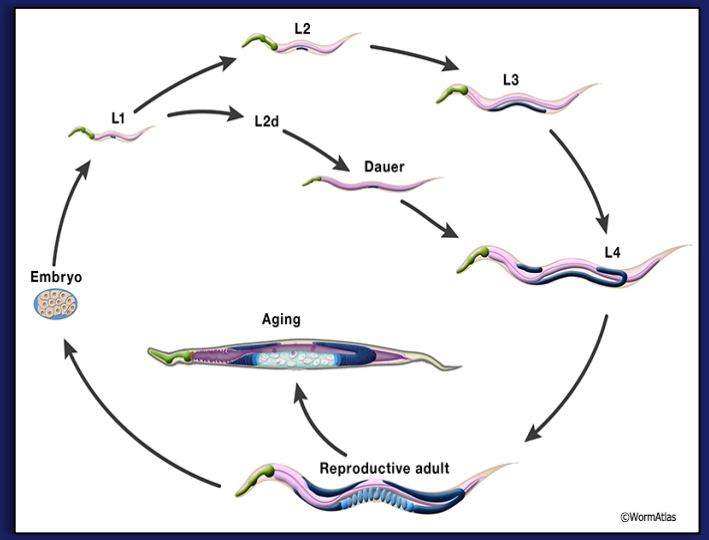
the study of all the RNA molecules produced within a cell

轉錄組學研究細胞內產生的所有 RNA 分子

Analysis
分析

+





C. elegans life cycle 線蟲生命週期

3x/week 3次/週
→ Longevity 壽命
→ Transcriptomics
轉錄組學

Biological processes, cellular components and molecular function
生物過程、細胞組成與分子功能

- **Kyoto Encyclopedia of Genes and Genomes (KEGG) pathways** → analysis of gene function
  京都基因與基因組百科全書 (KEGG) 路徑 → 基因功能分析
- **Gene Ontology terms** → shows gene behavior- if they are expressed or not 基因本體論術語 → 顯示基因行為 - 如果它們表達或不表達

	KEGG pathways KEGG路徑		GO TERMS 進行期間	
Sample 樣本	Up-regulated 上調	Down-regulated 下調	Up-regulated 上調	Down-regulated 下調
#10	2	6	30	0

Results
KEGG
KEGG結果

KEGG 京都基因與基因組百科全書	
UP-REGULATED 上調	Phosphatidylinositol signaling system **(*PI)** 磷脂醯肌醇信號系統 Inositol phosphate metabolism 磷酸肌醇代謝
DOWN-REGULATED 下調	Retinol metabolism 視黃醇代謝 Arginine and proline metabolism 精胺酸和脯胺酸代謝 Sphingolipid metabolism 神經鞘脂質代謝 2-Oxocarboxylic acid metabolism 2-氧代羧酸代謝 Arginine biosynthesis 精胺酸生物合成 Hippo signaling pathway - multiple species Hippo 訊息傳遞路徑 - 多物種

PI signaling system plays a key role in cell physiology. They act as second messengers and are **involved in several cell-signaling pathway that mediates cell proliferation, survival, and metabolism.**

PI訊號系統在細胞生理學中發揮關鍵作用

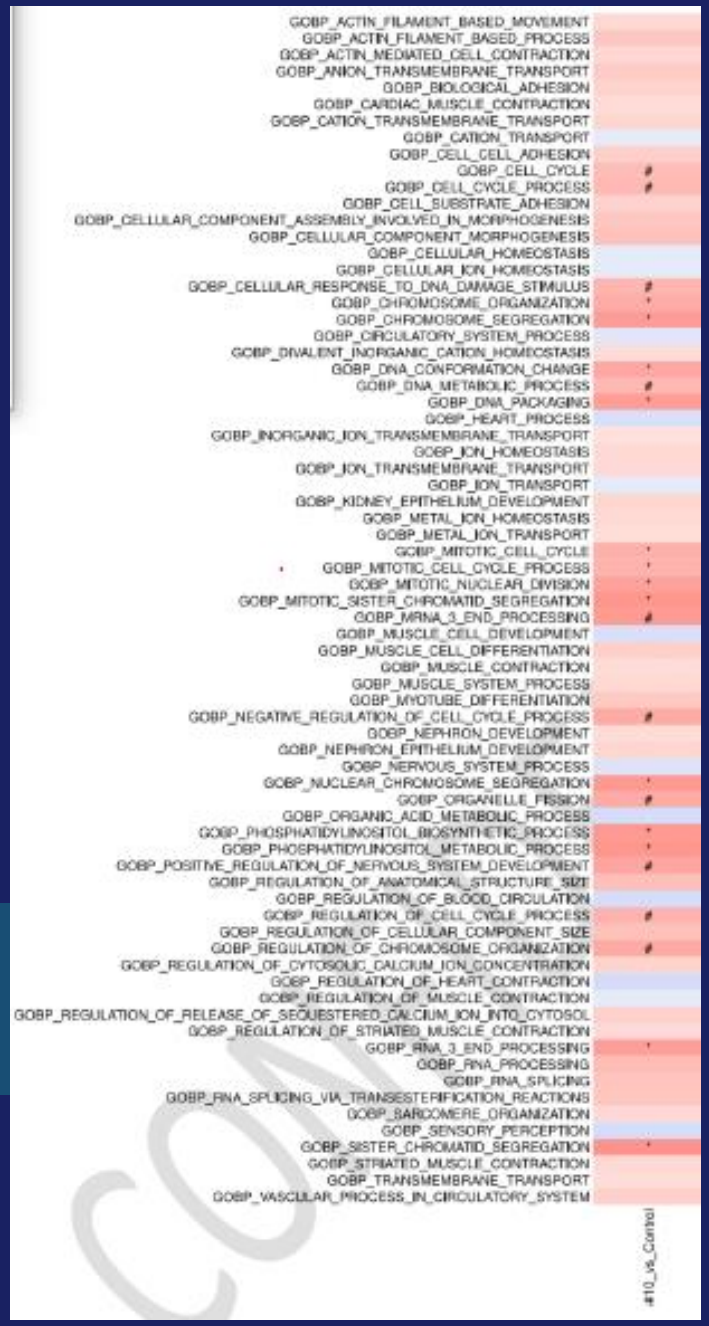
它們扮演第二信使，**參與細胞增殖、存活和代謝的多種細胞信號傳導路徑**

Results
GO TERMS
進行期間結果

GO TERMS 進行期間	
BIOLOGICAL PROCESSES **生物過程**	Sister_chromatid_segregation Nuclear_chromosome_segregation Chromosome_segregation Chromosome_organization Mitotic_sister_chromatid_segregation Phosphatidylinositol_metabolic_process **(*PI)** 磷脂醯肌醇代謝過程 Mitotic_cell_cycle Mitotic_nuclear_division Rna_3_end_processing Dna_packaging Phosphatidylinositol_biosynthetic_process (*) Mitotic_cell_cycle_process Dna_conformation_change
CELLULAR COMPONENT **細胞組成**	Nuclear_protein_containing_complex Chromosomal_region Chromosome
MOLECULAR FUNCTION **分子功能**	Catalytic_activity_acting_on_a_nucleic_acid

(*) PI is extremely important since it functions as a precursor for cell signaling, acting as second messenger and being involved in several cell-signaling pathways.
PI 極為重要，因為它作為**細胞訊號傳導的前體**、第二信使並參與多種**細胞訊號傳導路徑**

Results
GO TERMS
進行期間結果



- Redox Signaling Molecules play a role in important functions of cell cycle and mitigates DNA damage, increasing longevity in *C. elegans*
  氧化還原信號分子在細胞週期的重要功能中發揮作用，減輕 DNA 損傷，**延長C. 線蟲的壽命**
- Activate pathways related to the nervous system that likely play a role in neuroprotection
  激活與神經系統相關的通路，可能在**神經保護**中發揮作用

Redox Signaling Molecules exert a positive effect on C. elegans' LONGEVITY and NEUROPROTECTION

氧化還原信號分子對線蟲發揮積極作用

延長壽命和神經保護

Our Vision 我們的願景

Become the recognized global leader in cellular health and redox-based technologies and achieve worldwide distribution of ASEA's life-changing products, financial opportunity, and culture.

成為全球REDOX技術的領導者，並實現在全球散播ASEA能改變生命的產品、事業機會和文化

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