



INNOVATION

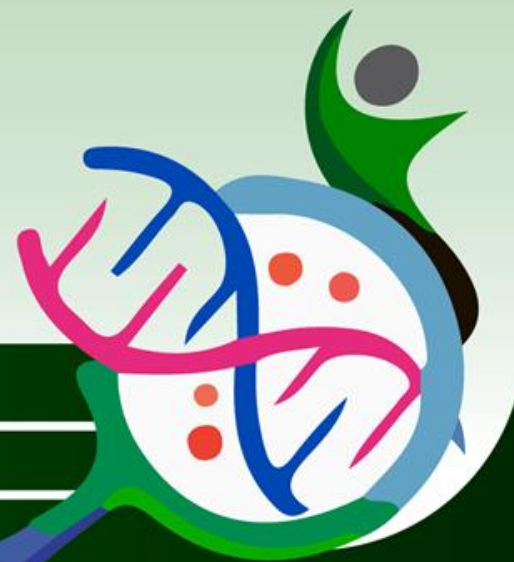
曼氏血吸蟲蟲卵抗原誘發膀胱癌細胞 HTB-9之細胞凋亡路徑研究

指導教授：鄭柏青教授

指導老師：劉玉山老師

227 09 周宇晨、簡駿騏

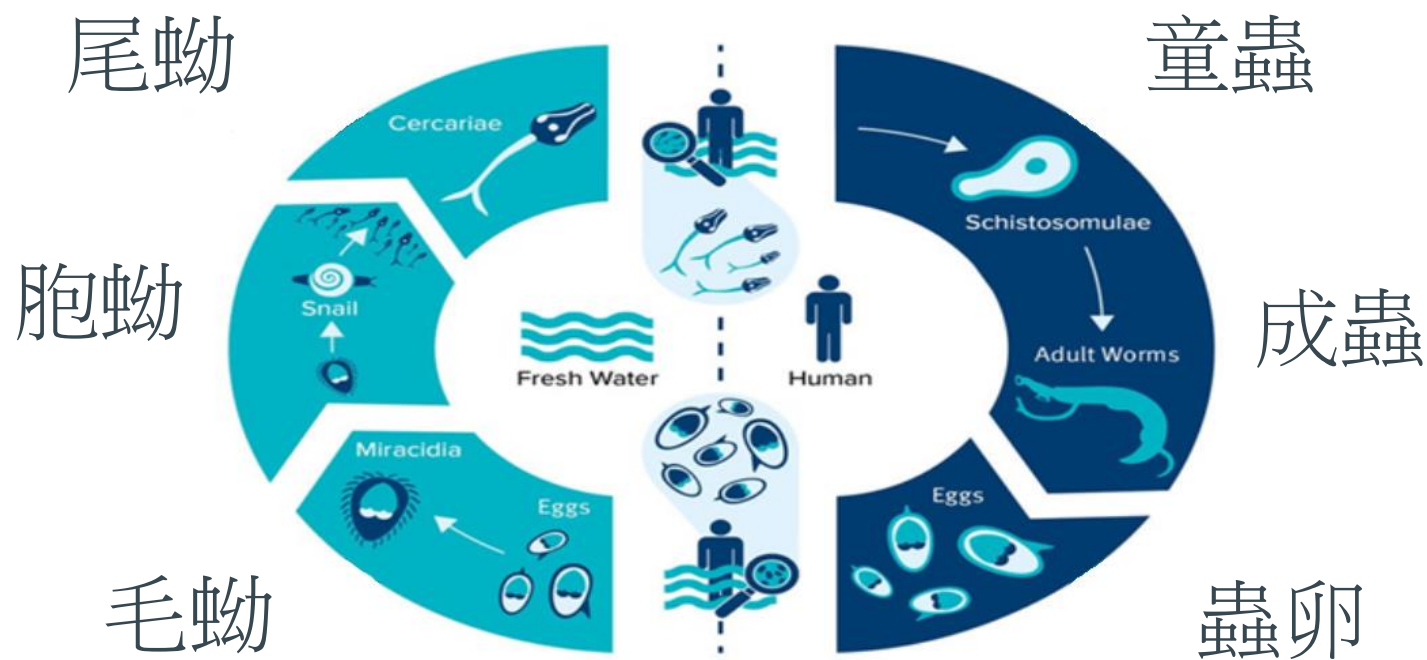
生物組 BIOLOGY



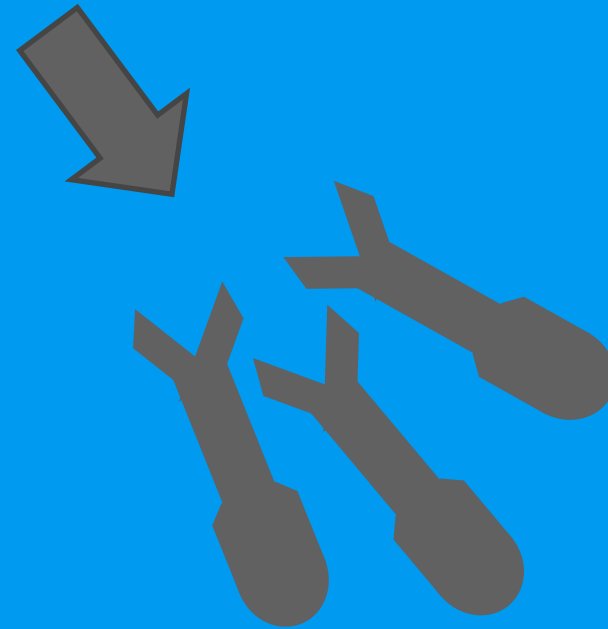
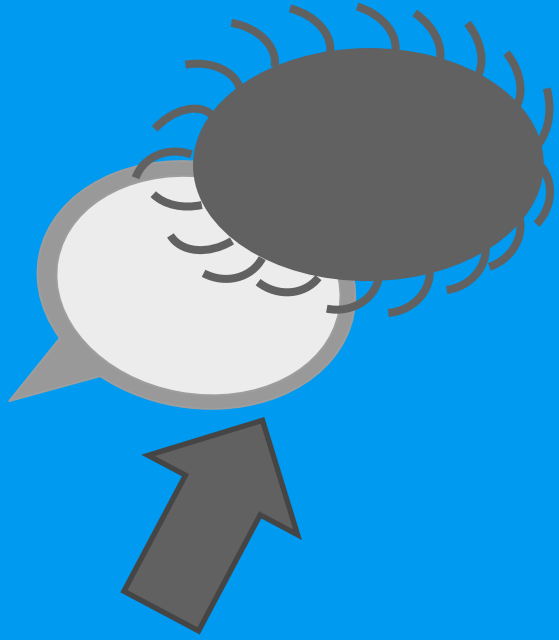


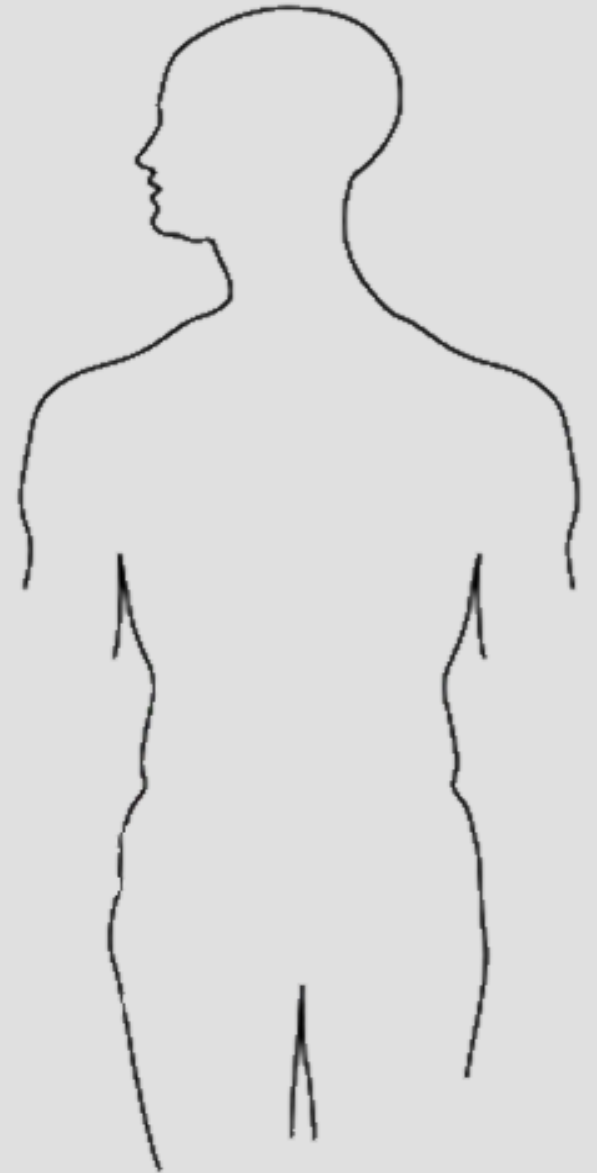
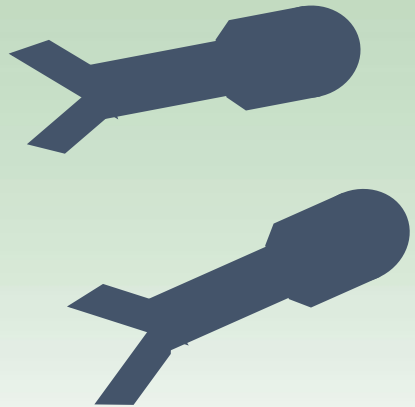
研究動機

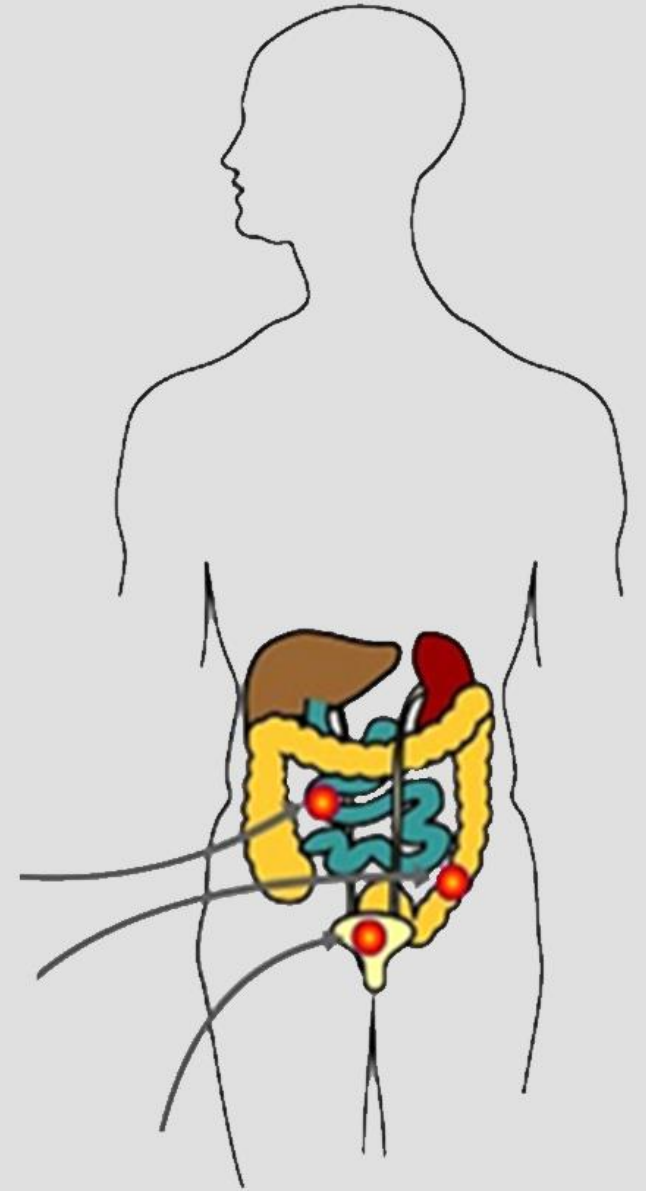
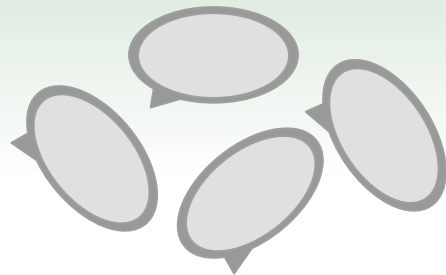
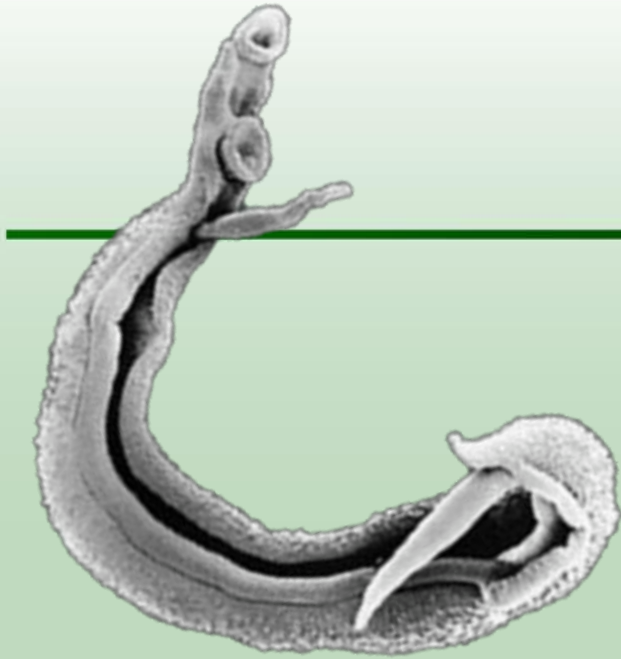
1. 血吸蟲

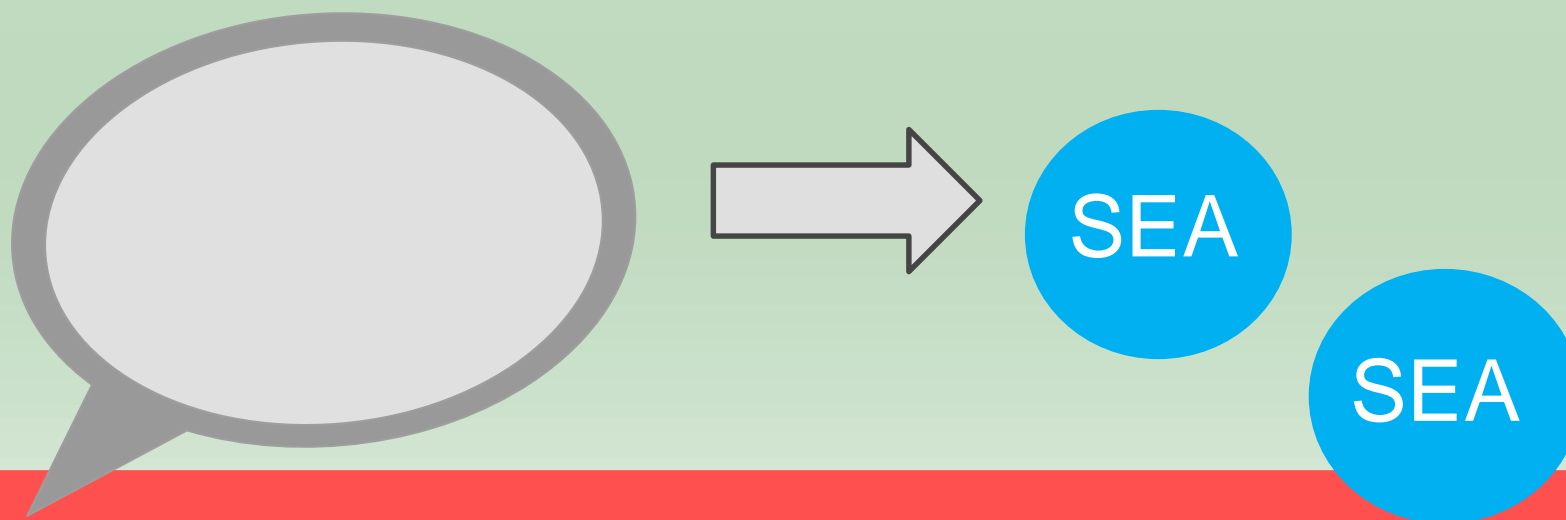


來源: <https://genome.cshlp.org/>









肝、腸、膀胱



水溶性蟲卵抗原 Soluble Egg Antigen (SEA)

造成蟲卵肉芽腫，最後導致

- 肝脾腫大
- 腸壁纖維化
- 肝硬化
- 腹水

SEA

SEA

肝、腸、膀胱



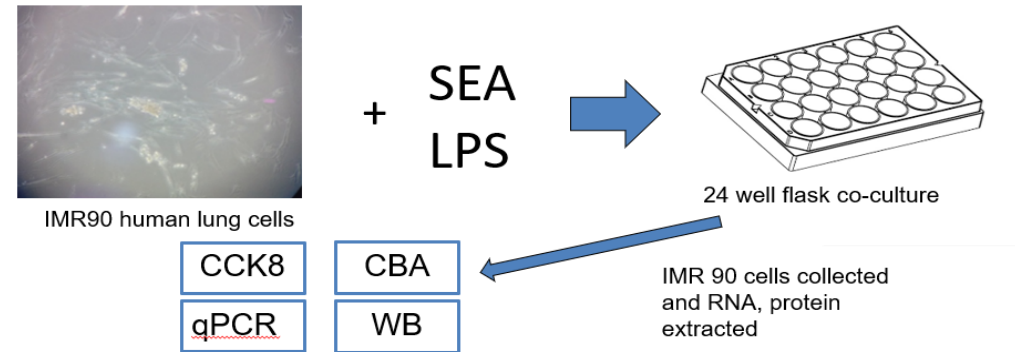
研究動機

2. 學長的研究

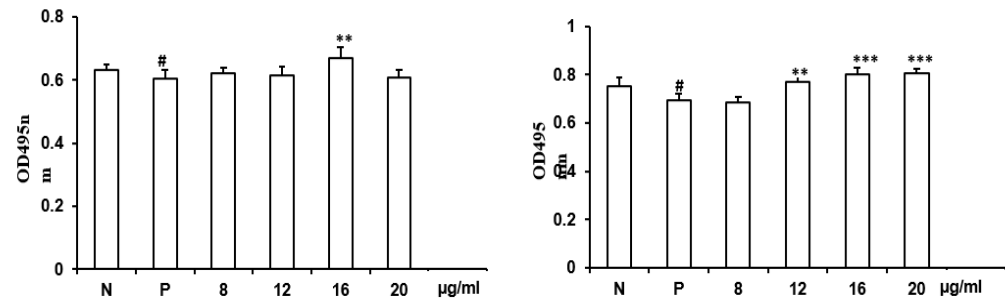
SEA是否能啟動膀胱上皮癌細胞的細胞凋亡程序、以及時間和濃度的差別對於誘發膀胱癌細胞的細胞凋亡程序是否有所差異。

Materials and Method

IMR-90 human lung cells co-cultured with 8,12,16,20 $\mu\text{g/ml}$ concentrations of SEA for 24 and 48hrs respectively before LPS 48hrs stimulating..



Effect of SEA on suppressing inflammation effect in IMR90 cells



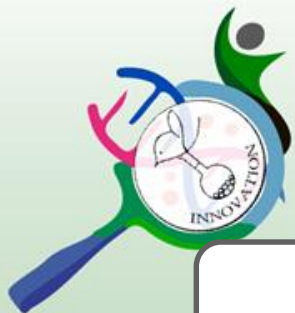
Shistosoma mansoni egg antigen (SEA) inhibit inflammation of human lung cell by JAK-STAT1 signaling pathway

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研究目的

- 一、探討SEA濃度對HTB-9的活性是否有影響
- 二、探討SEA作用時間對HTB-9的活性是否有影響
- 三、藉由螢光照影檢測SEA對HTB-9細胞凋亡的影響



蟲卵抗原(SEA)

前置作業

解凍

清洗

離心

處理

去雜質

過濾

離心

分裝

lysis

冷凍解凍

lysis

混和均質化

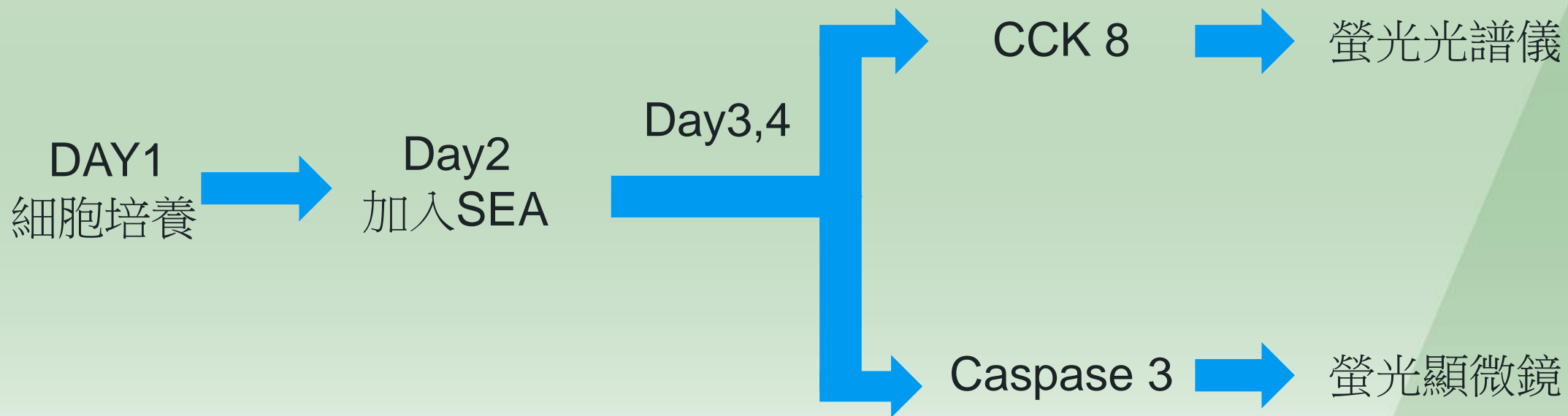
磨碎

離心

過濾



實驗設計流程





24hr

48hr

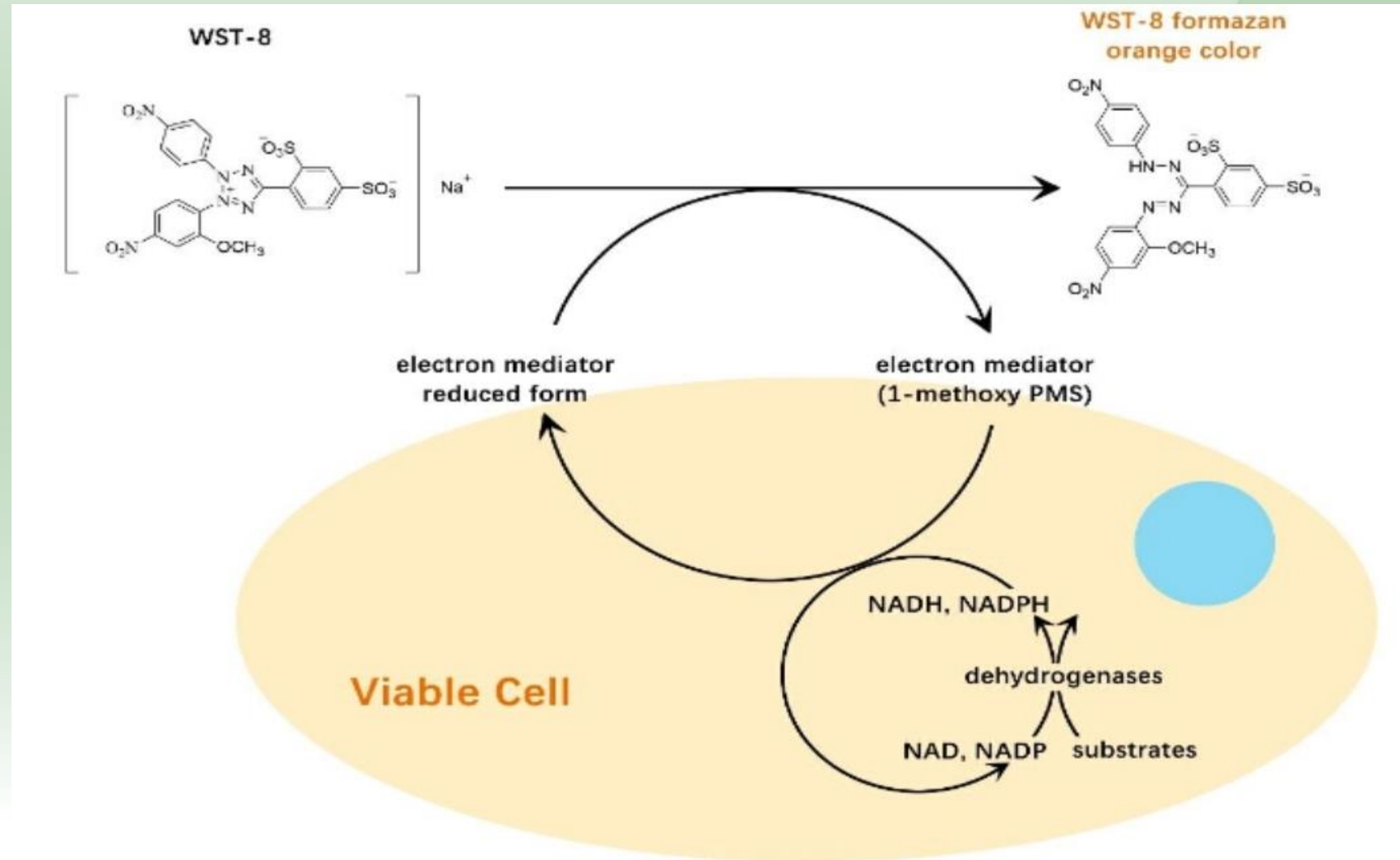
	1	2	3	4
A	control	control	8ug/mL	8ug/mL
B	12ug/mL	12ug/mL	16ug/mL	16ug/mL
C	20ug/mL	20ug/mL		

	1	2	3	4
A	control	control	8ug/mL	8ug/mL
B	12ug/mL	12ug/mL	16ug/mL	16ug/mL
C	20ug/mL	20ug/mL		

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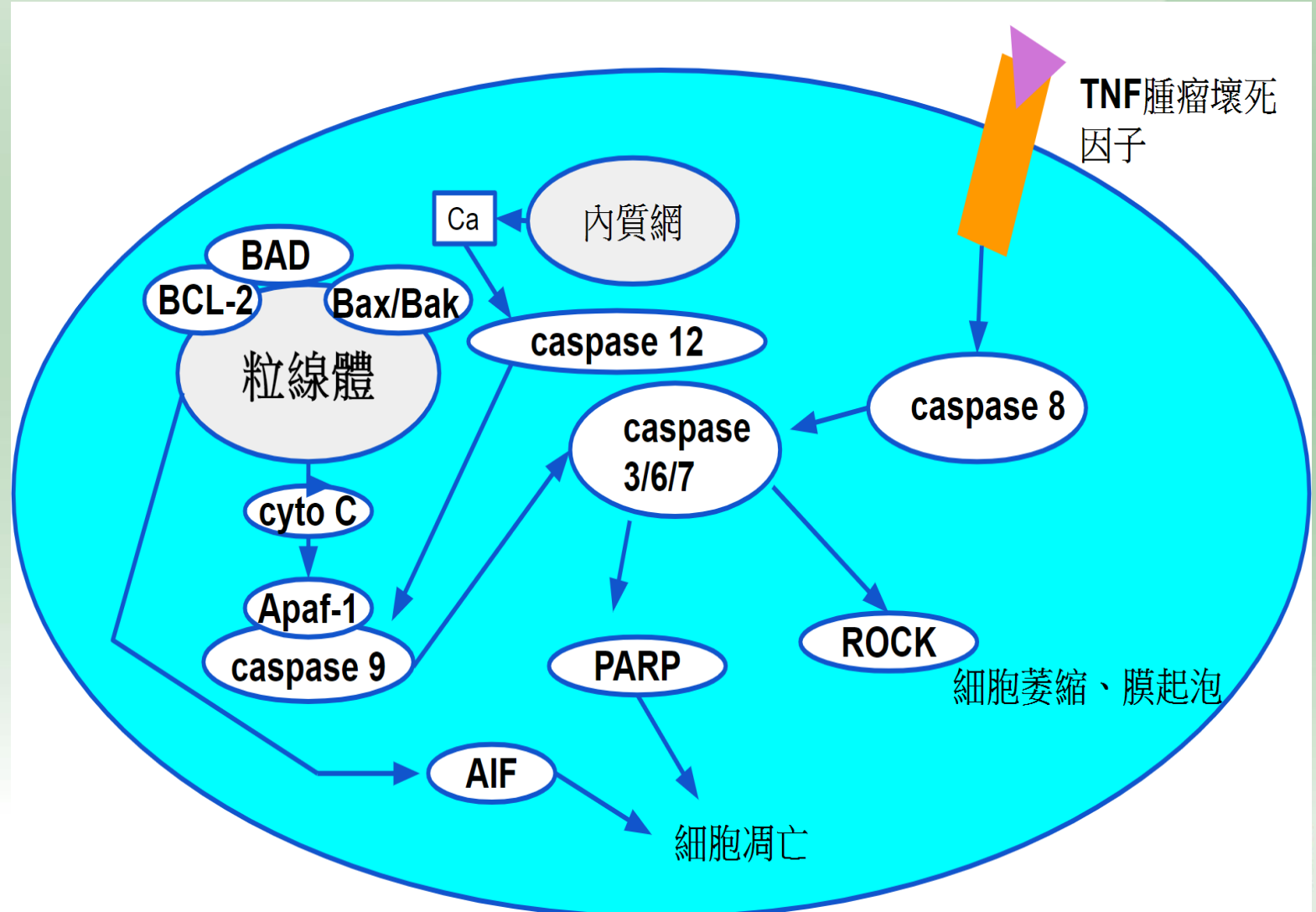


CCK-8

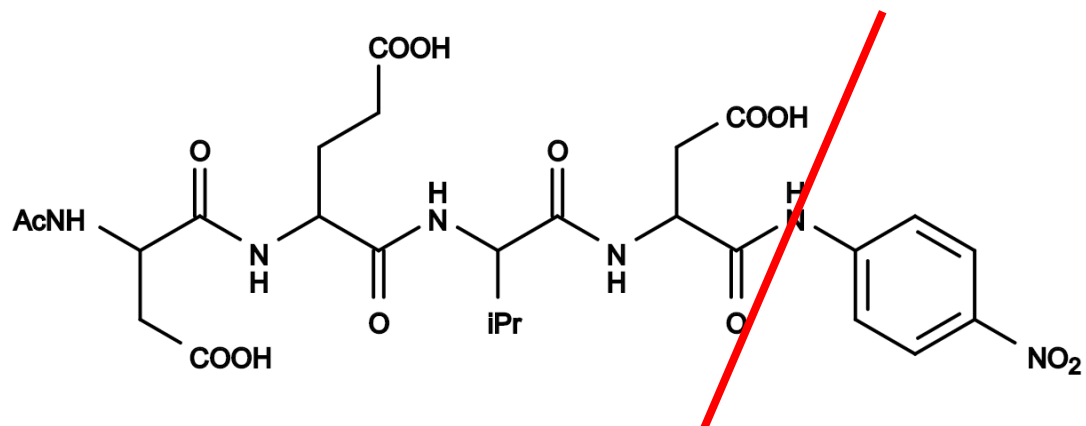
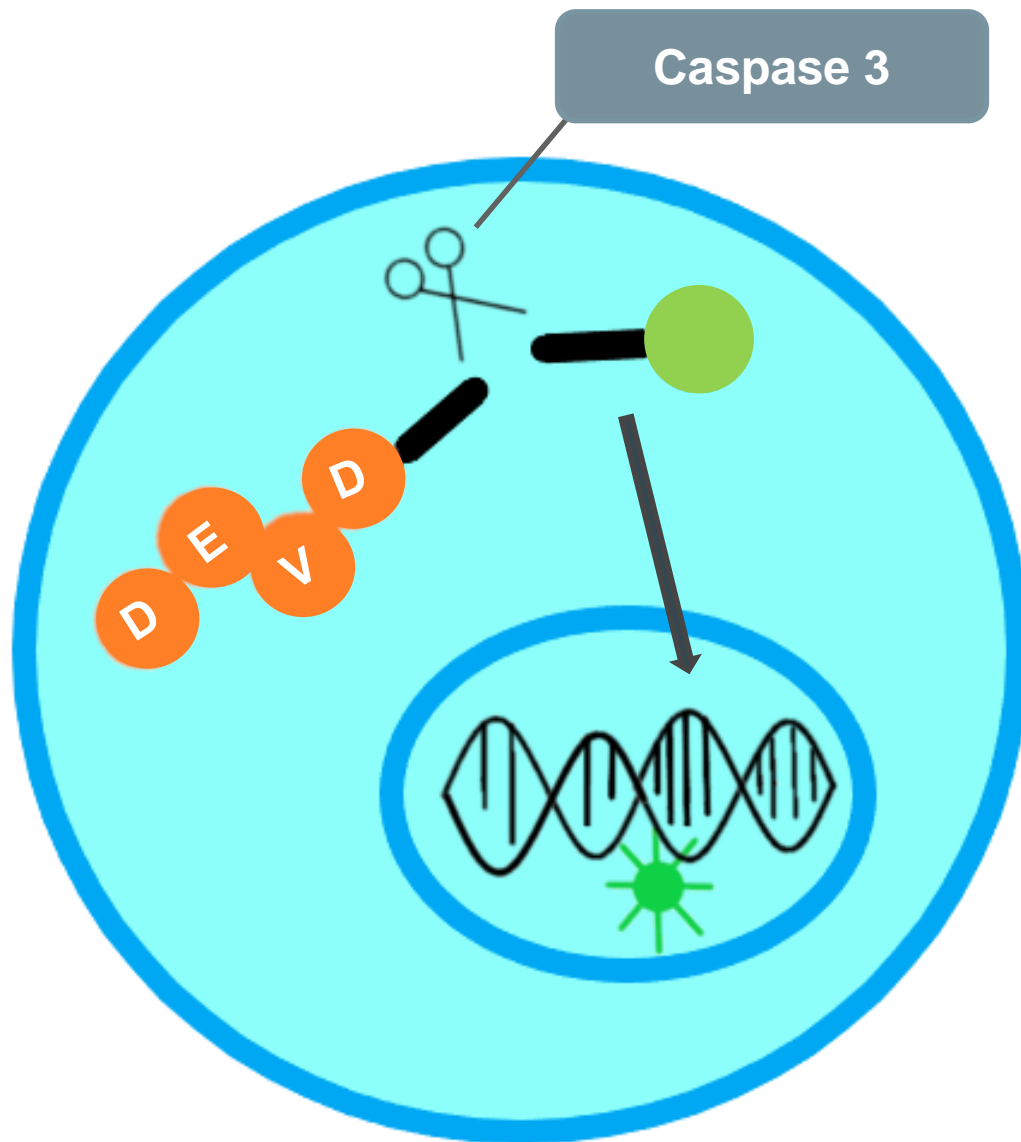
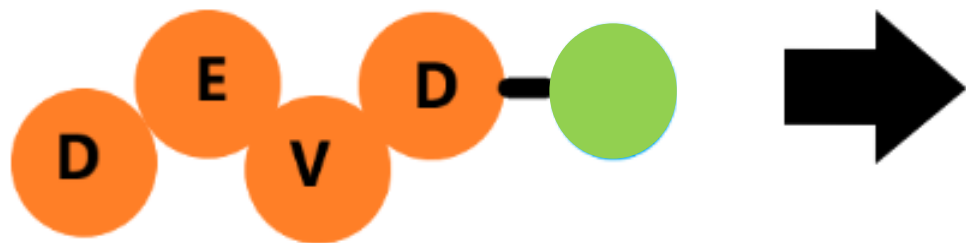




apoptosis caspase 3

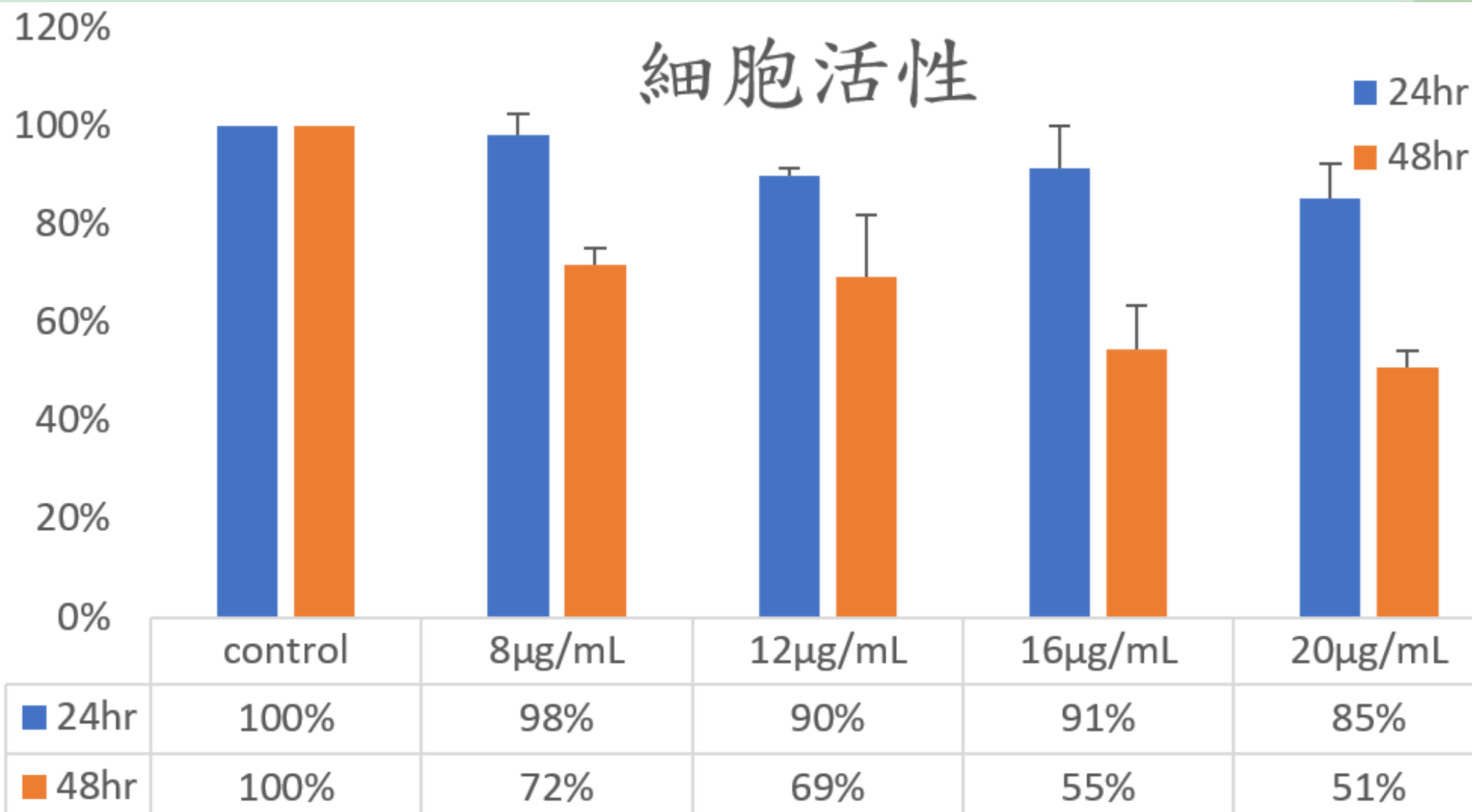


caspase-3 kit





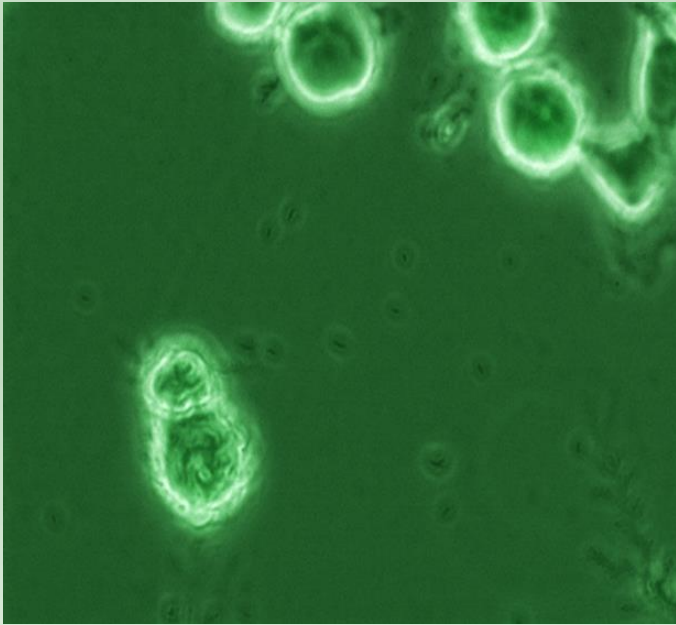
實驗結果-CCK8



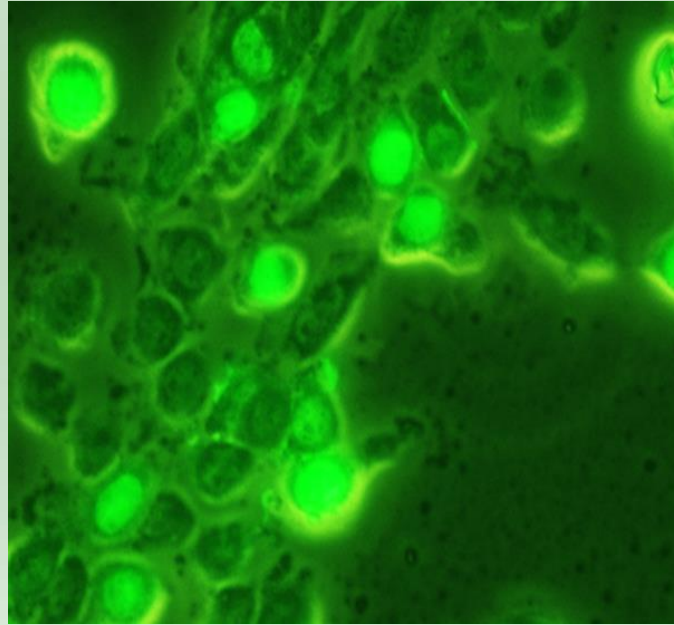


實驗結果

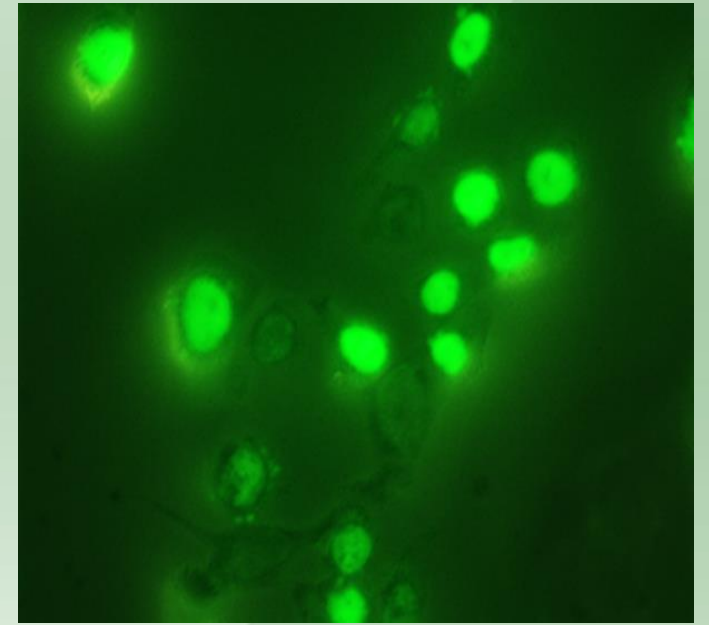
螢光照影(caspase 3)



control



10 µg/mL



40 µg/mL

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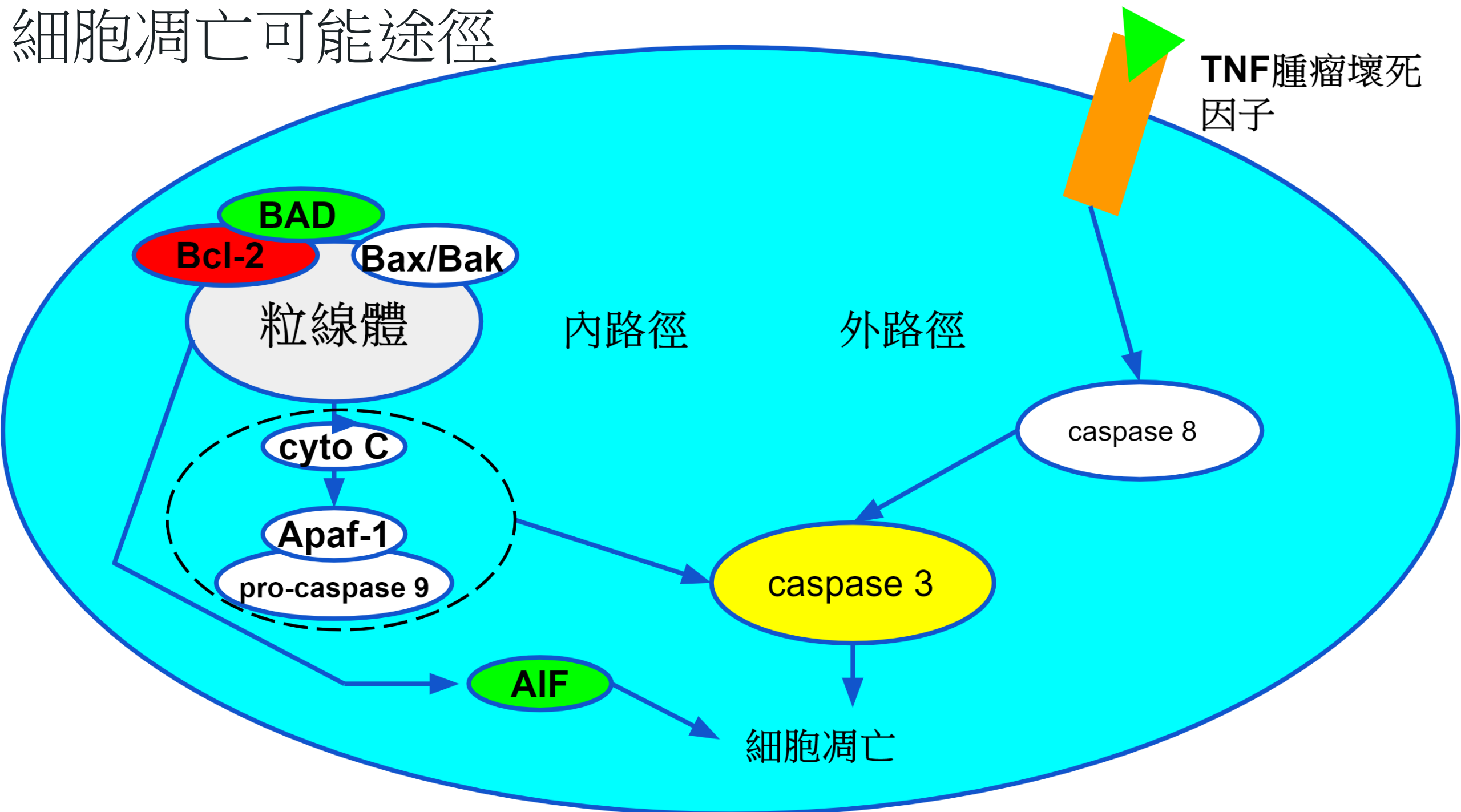
未來展望

(一)WESTERN Blotting

WESTERN的實驗，目標蛋白質為TNF- α 、AIF、Anti-Bad和Bcl-2，這些蛋白質皆有參與各種細胞凋亡途徑，依據其表現量便可以推測出SEA所誘發的細胞凋亡途徑。

(二)CBA 流式細胞儀

細胞凋亡可能途徑





參考資料

1.NucView Caspase 3 Assay Kit .Retrieved from

<https://biotium.com/technology/nucview-caspase-3-substrates/>

2.ATCC: The Global Bioresource Center . Retrieved from

<https://www.atcc.org/>

3.Kang-Yun Lee,Yi-Lin Lee,Ming-Hsiu Chiang,Hung-Yang Wang,Chong-Yu Chen,Chang-Hong Lin, Ying-Chou Chen, Chia-Kwung Fan, Po-Ching Cheng . (2020)Schistosoma soluble egg antigens suppress LPS-induced inflammation in human lung cells by modulation of JAK/STAT1 signaling Journal of Microbiology, Immunology and Infection . Journal of Microbiology, Immunology and Infection .



致謝

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