

氧化壓力分析

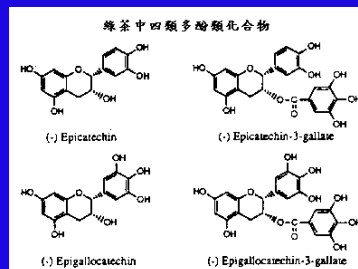
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氧自由基生物學

- 自由基與各種疾病
- 自由基的生理作用
- 體內抗氧化系統 & 「氧化壓力」分析
- 運動與自由基
- 中草藥與自由基
- 細胞毒理試驗

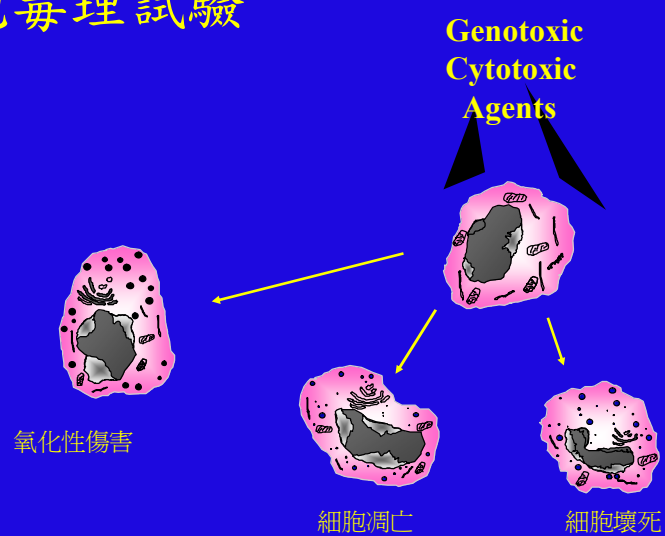


氧自由基生物學

存活率	Propidium Iodide
	7-AAD
H ₂ O ₂ sensitive	DCFH-DA
O ₂ - radical sensitive	Hydroethidine
NO sensitive	NO Sensor
Mitochondrial 膜電位	MitoSensor (JC-1)

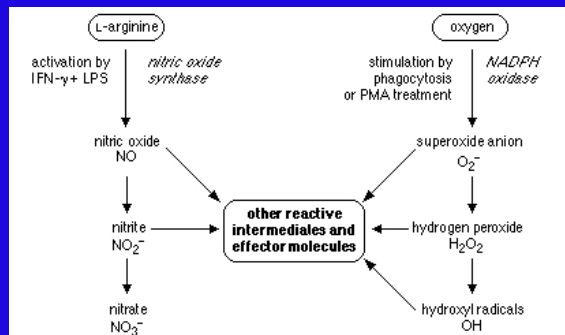


細胞毒理試驗



細胞毒理試驗

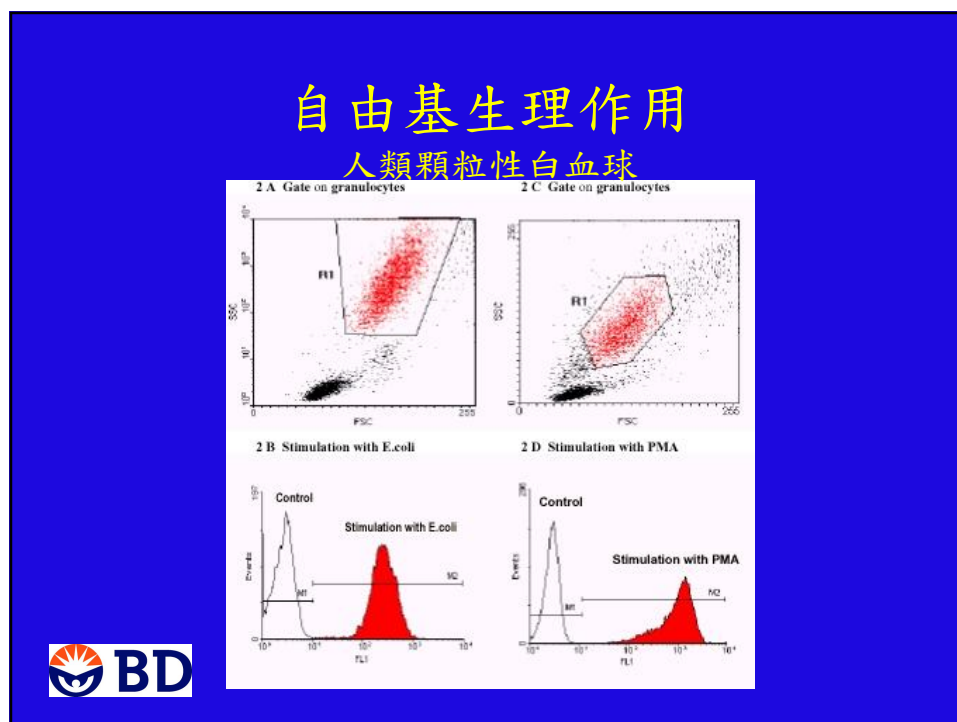
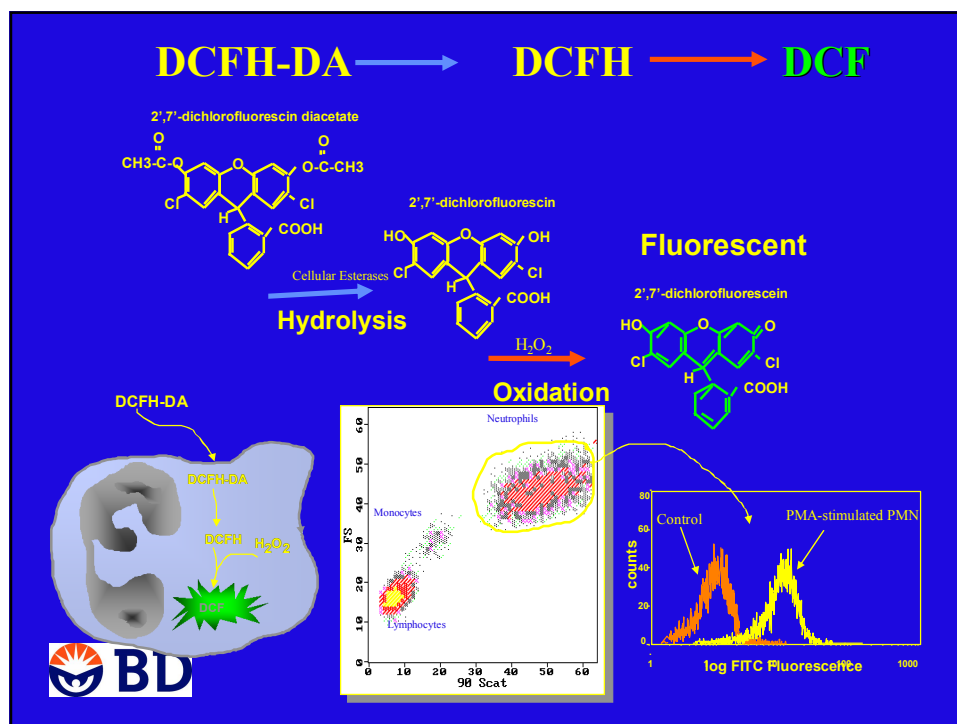
- 氧化性傷害
 - Reactive Oxygen Species

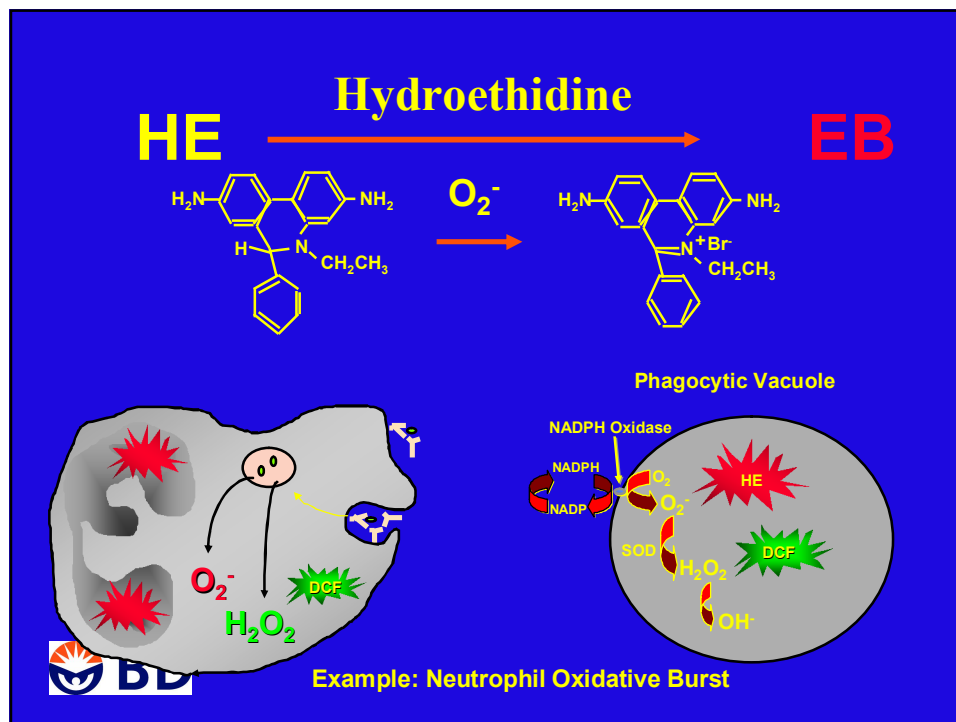


氧自由基特异性染料

- Superoxide →  Hydroethidine
- H₂O₂ →  Dichlorofluorescein
- Glutathione levels →  Cl. Methyl Fluorescein
- Nitric Oxide →  NO Sensor
- Mitochondrial Memb potential →  ApoAlert MitoSensor

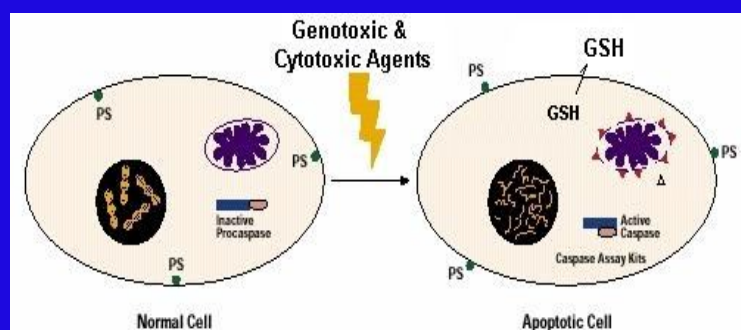






細胞毒理試験

- 凋亡性傷害



粒腺體跨膜電位 ($\Delta\psi$): (JC-1 Mitoscreen)

- Energy is released during oxidation reactions in the mitochondrial respiratory chain
- Energy stored as a negative electrochemical gradient
 $\Delta\psi$ polarized
- Apoptosis is often associated with a decrease in $\Delta\psi$
 $\Delta\psi$ depolarized

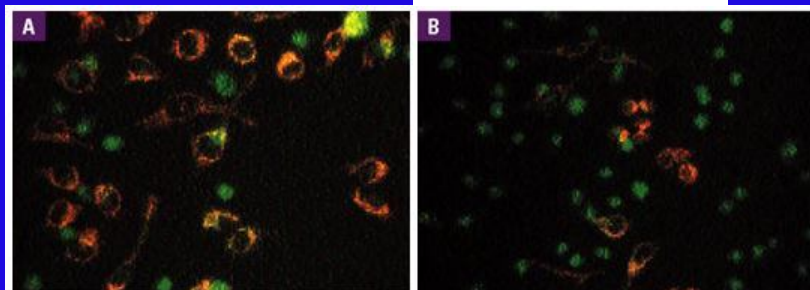
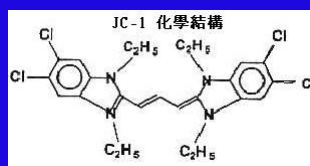
JC-1: • 1st J-aggregate-forming Cationic dye found to be $\Delta\psi$ sensitive
• Fluorescence color dependent on $\Delta\psi$

Analysis by flow cytometry:

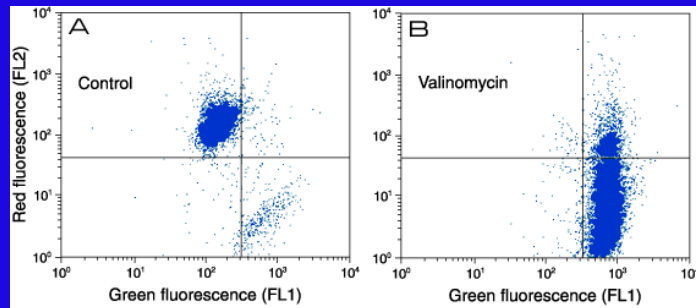
- $\Delta\psi$ polarized (J-aggregates): FITC-PE channel
- $\Delta\psi$ depolarized (monomers): FITC channel



粒腺體跨膜電位 ($\Delta\psi$): (JC-1 Mitoscreen)



JC-1 Staining in Mouse Thymocytes



氧自由基分析試驗之特色

- 活細胞檢測, 樣品存活率非常重要
- 特異性染色需時約5-20分鐘, 染色後免洗直接上機
- 往往需比較正常細胞與激活後之數據, 正常細胞對照組非常重要
- 時間為一有意義參數

