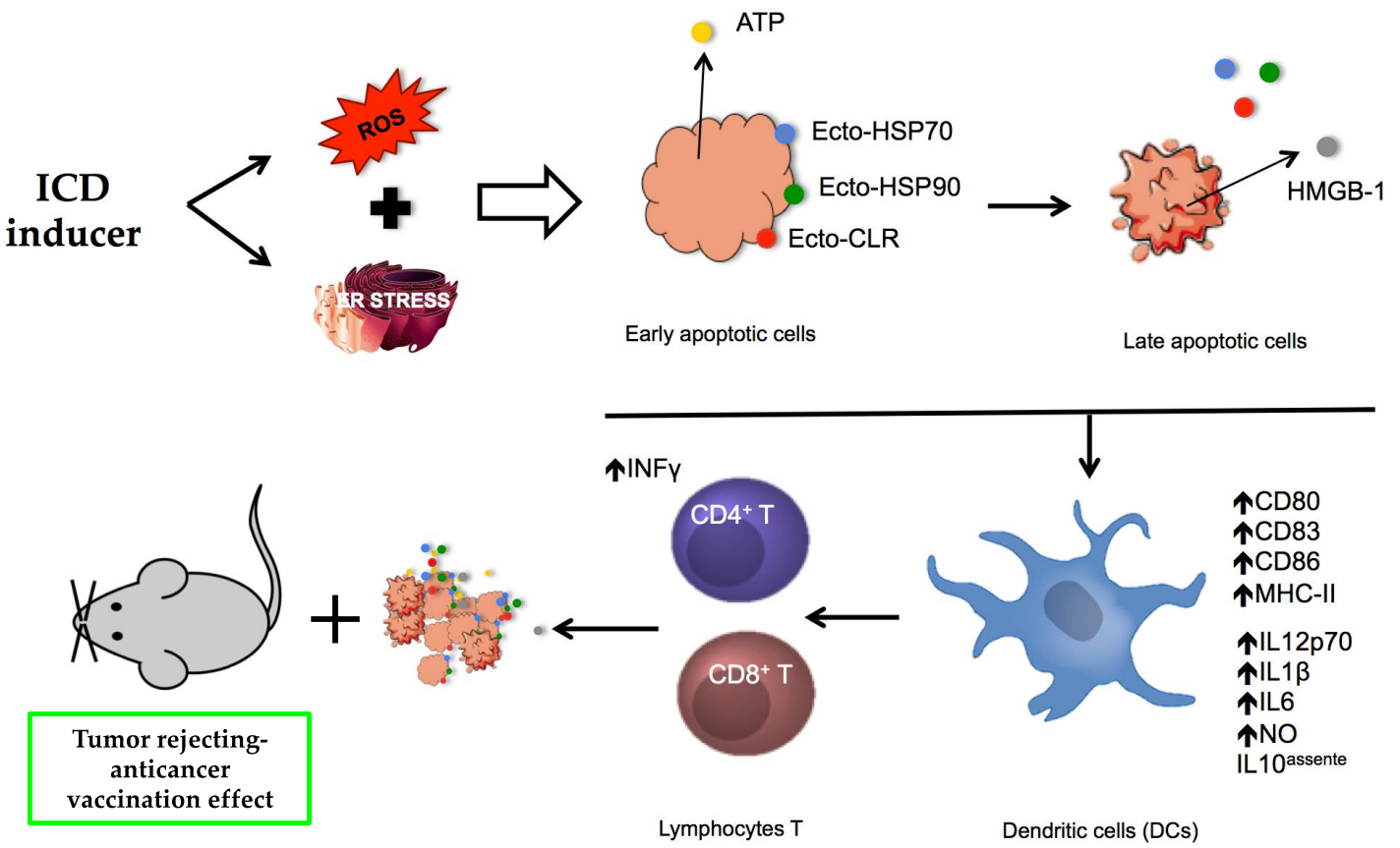
Hemidesmus indicus induce morte cellulare immunogenica (ICD) su cellule umane di carcinoma del colon

Morte Cellulare Immunogenica (ICD)



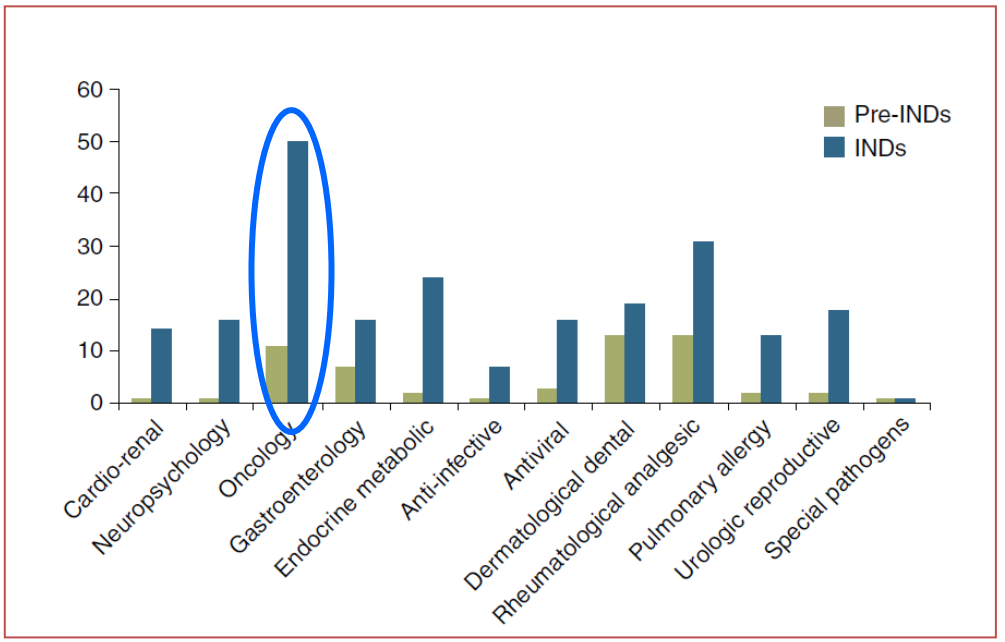
Botanical drugs (FDA, 2004)

- Use in the diagnosis, cure, mitigation, treatment or prevention of disease in humans
- Vegetable materials, which may include plant materials, algae, macroscopic fungi, or combinations thereof.
- Available as (but not limited to) a solution (e.g., tea), powder, tablet, capsule, elixir, topical, or injection.
- Complex mixtures and lack of a distinct active ingredient. Fermentation products and highly purified or chemically modified botanical substances are not considered botanical drug products.

Fulyzaq

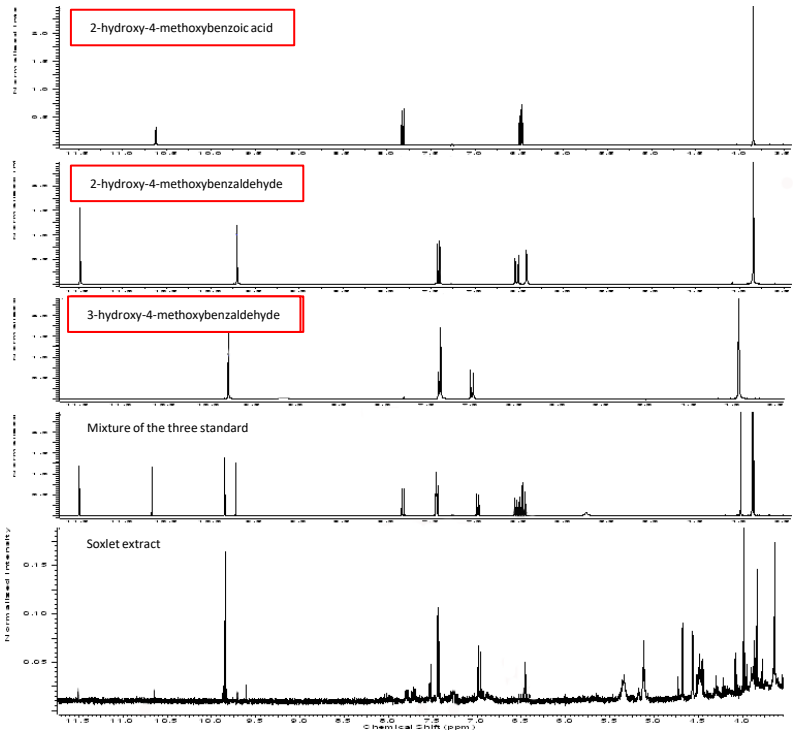
Veregen

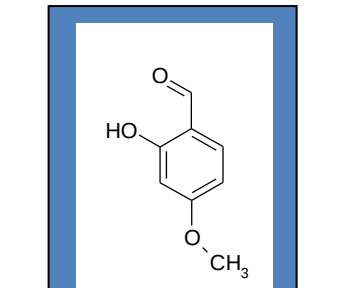
Botanicals submitted to FDA categorized by therapeutic area



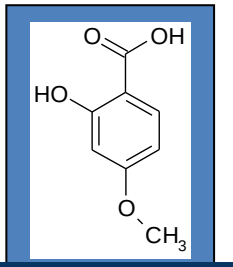
Nature Biotechnology 2008, 26(10), 1077-83.

Fingerprinting of Hemidesmus indicus (HID)

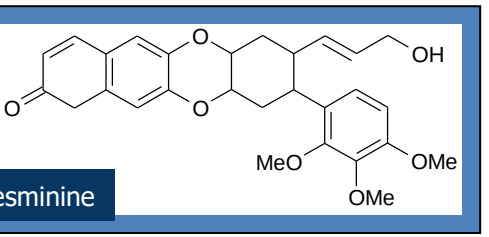




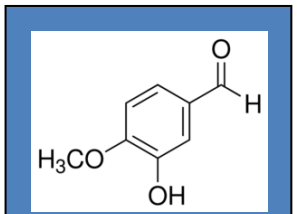
2-hydroxy 4-methoxy benzaldehyde



2-hydroxy-4-methoxybenzoic acid



Hemidesminine



3-hydroxy 4-methoxy benzaldehyde

Obiettivi:

1. Valutazione dei meccanismi di morte cellulare sottesi all'attività antitumorale di HID su cellule di adenocarcinoma del colon-retto (dld-1).

2. Valutazione della capacità di HID di indurre **stress ossidativo e del reticolo endoplasmatico** (RE) su cellule dld-1.

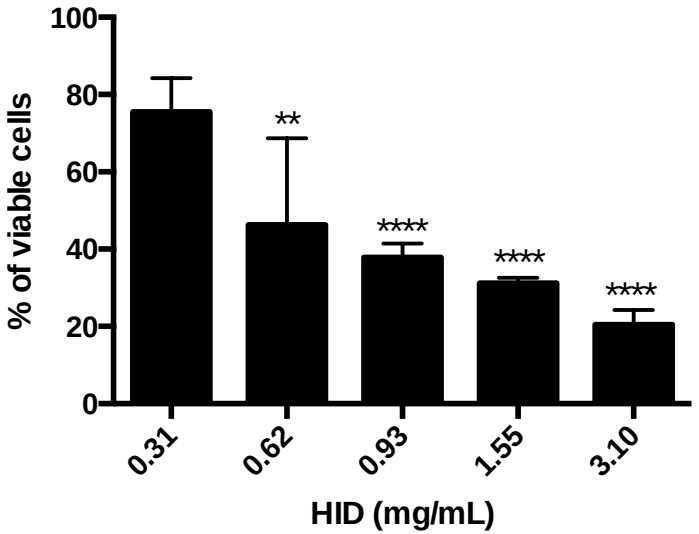
3. Analisi della capacità di HID di mobilizzare i più importanti effettori di ICD su cellule dld-1, quali calreticulina (**CLR**), heat shock protein 70 e 90 (**Hsp 70 and 90**) e **ATP**.

4. Valutazione della capacità delle cellule dld-1 trattate con HID di promuovere la **maturazione delle cellule dendritiche** (DC).

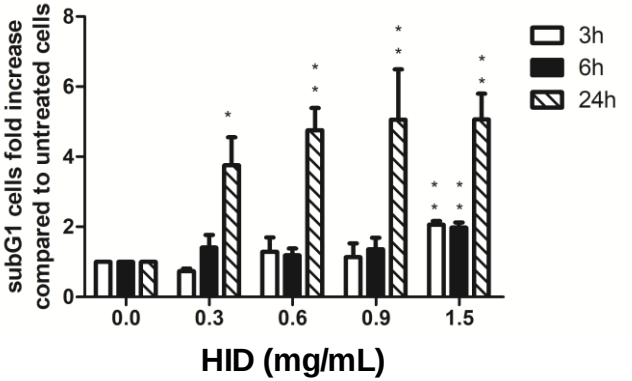
Citotossicità e apoptosi

Citotossicità

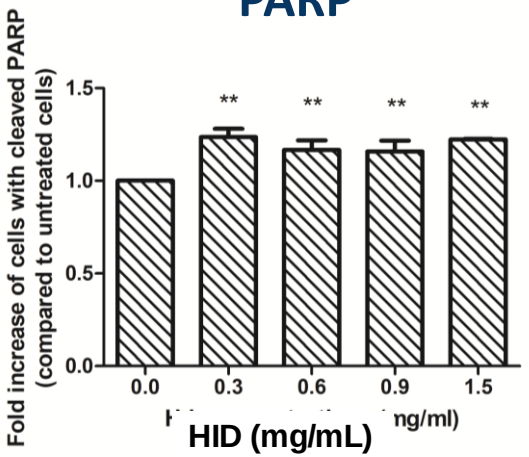
48 h



Fase SubG1



PARP

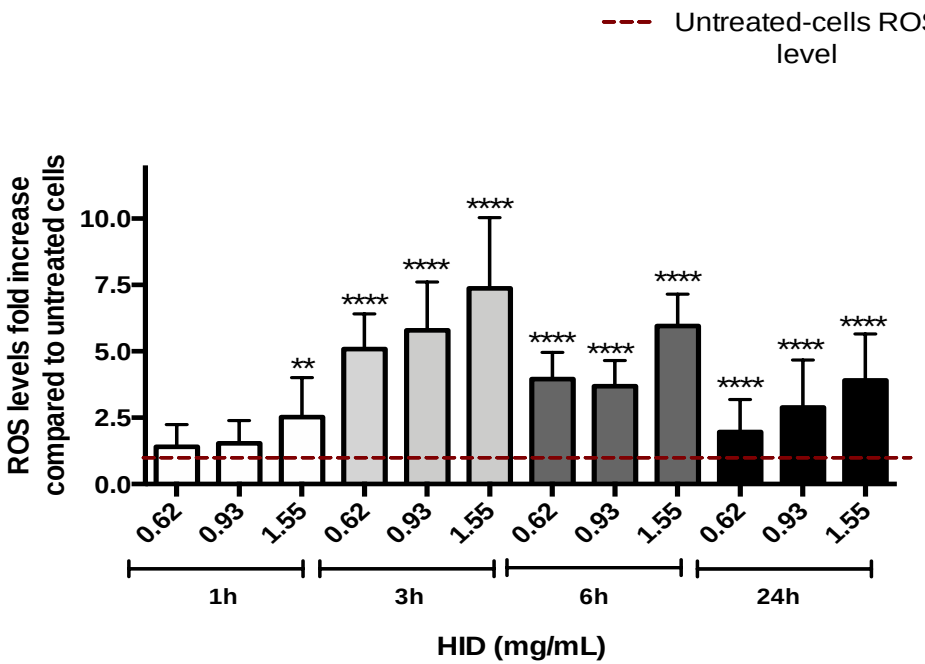


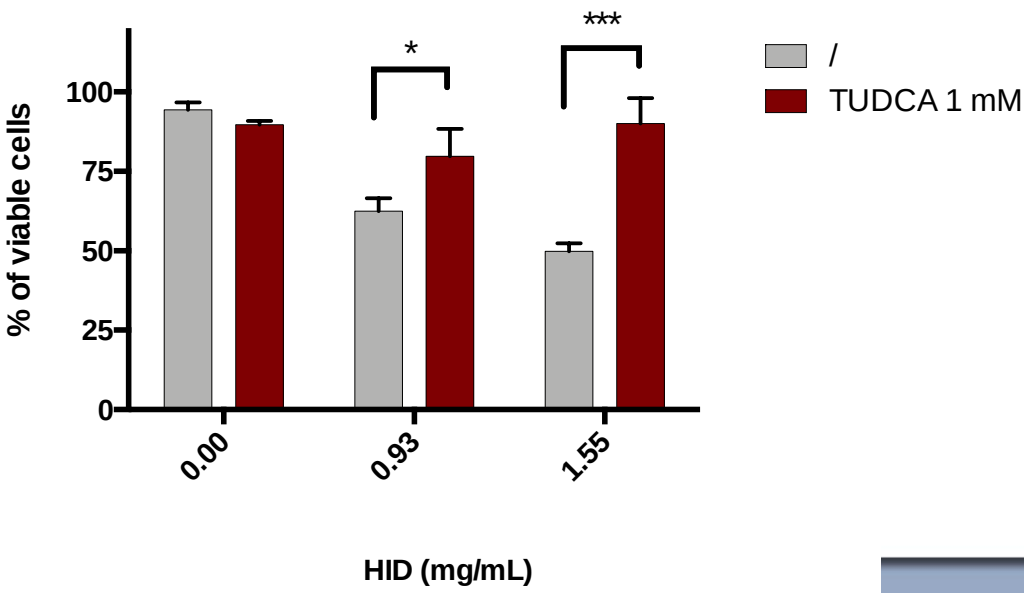
Stress ossidativo

Stress del reticolo endoplasmatico

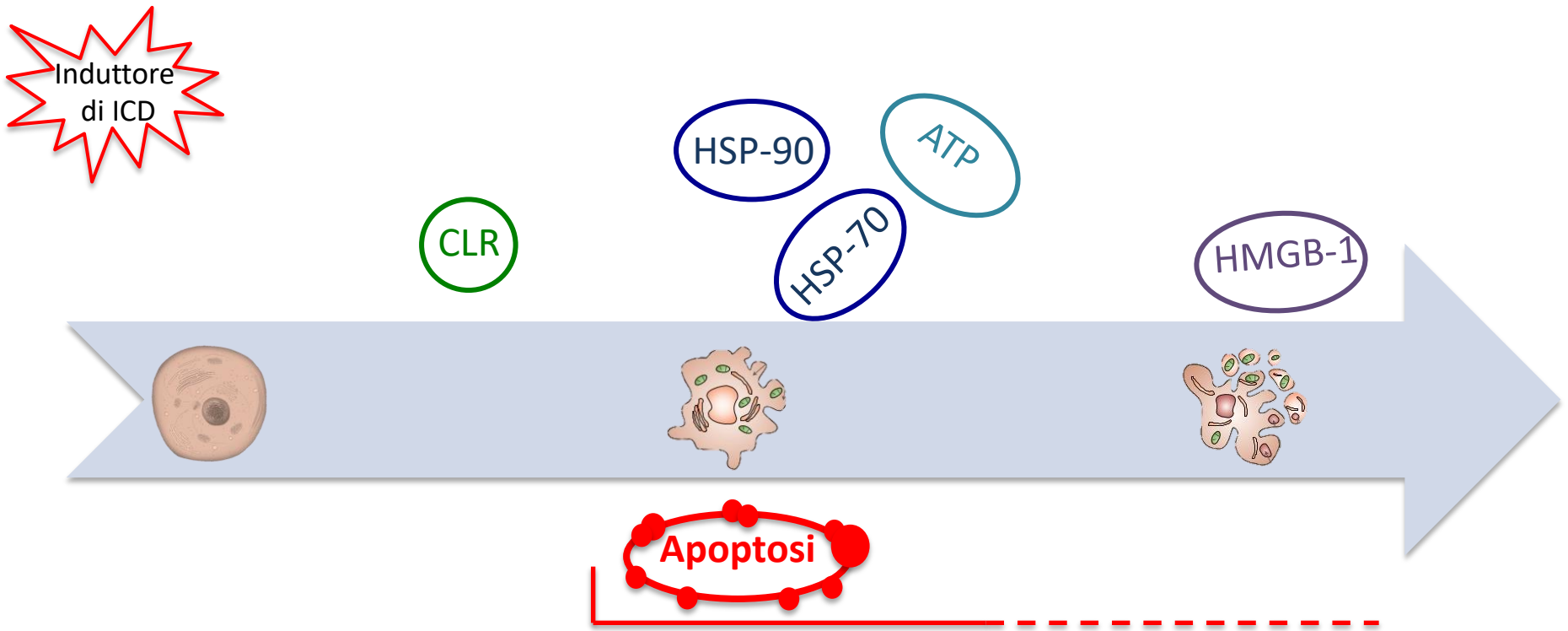
Livelli intracellulari di ROS

Vitalità cellulare con o senza inibitori dello stress del RE



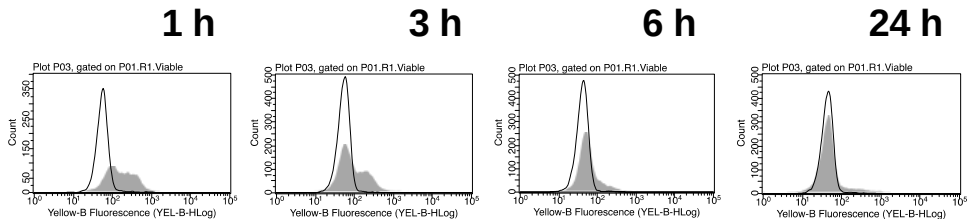


DAMPs

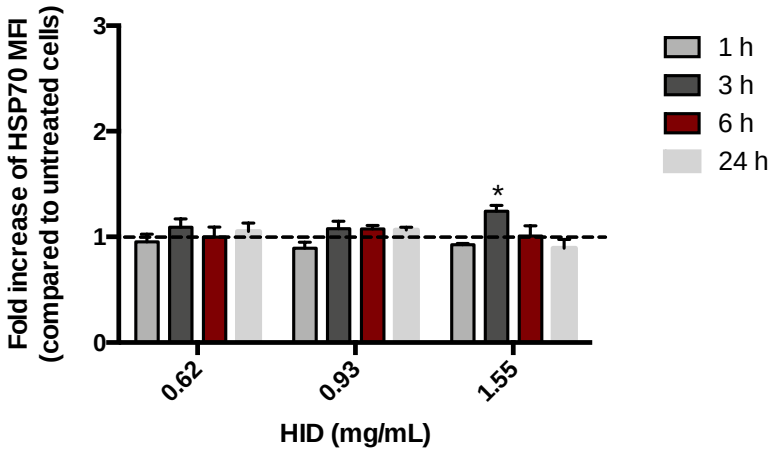


DAMPs

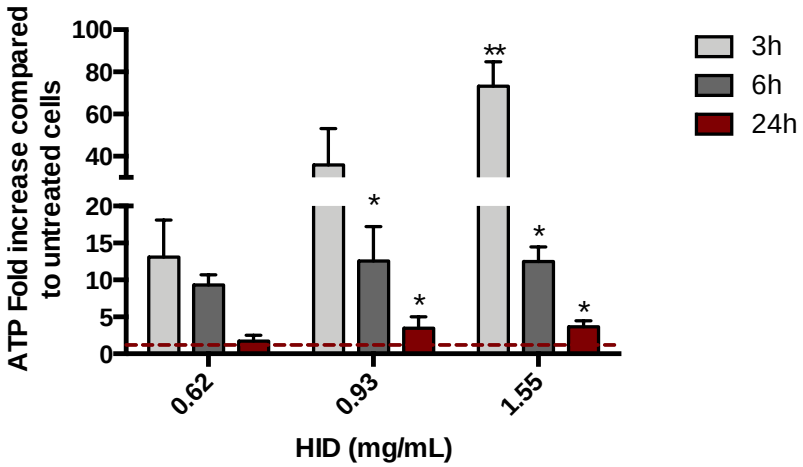
CLR; HID 1,55 mg/mL



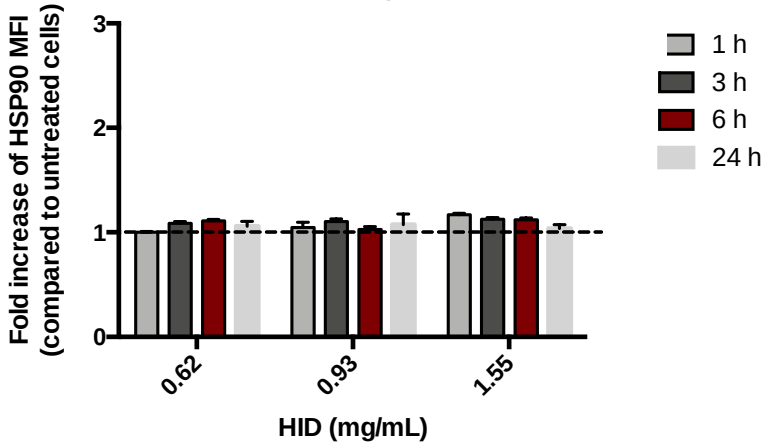
Hsp70



ATP

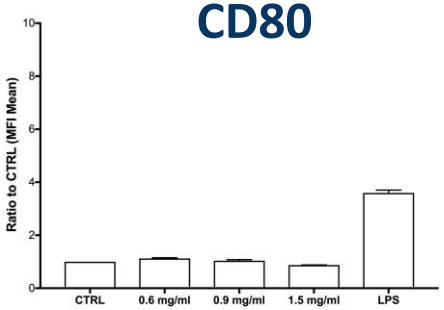


Hsp90

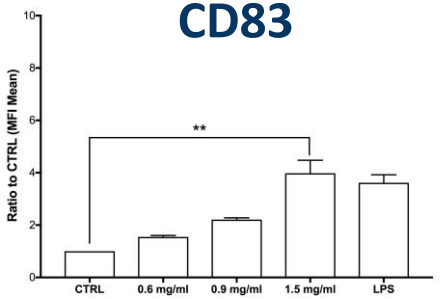


Maturazione cellule dendritiche

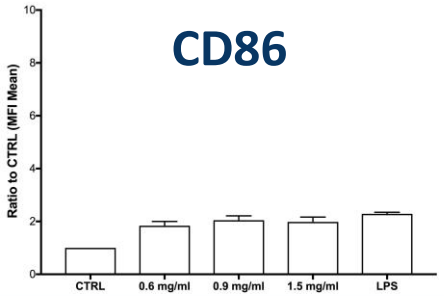
CD80

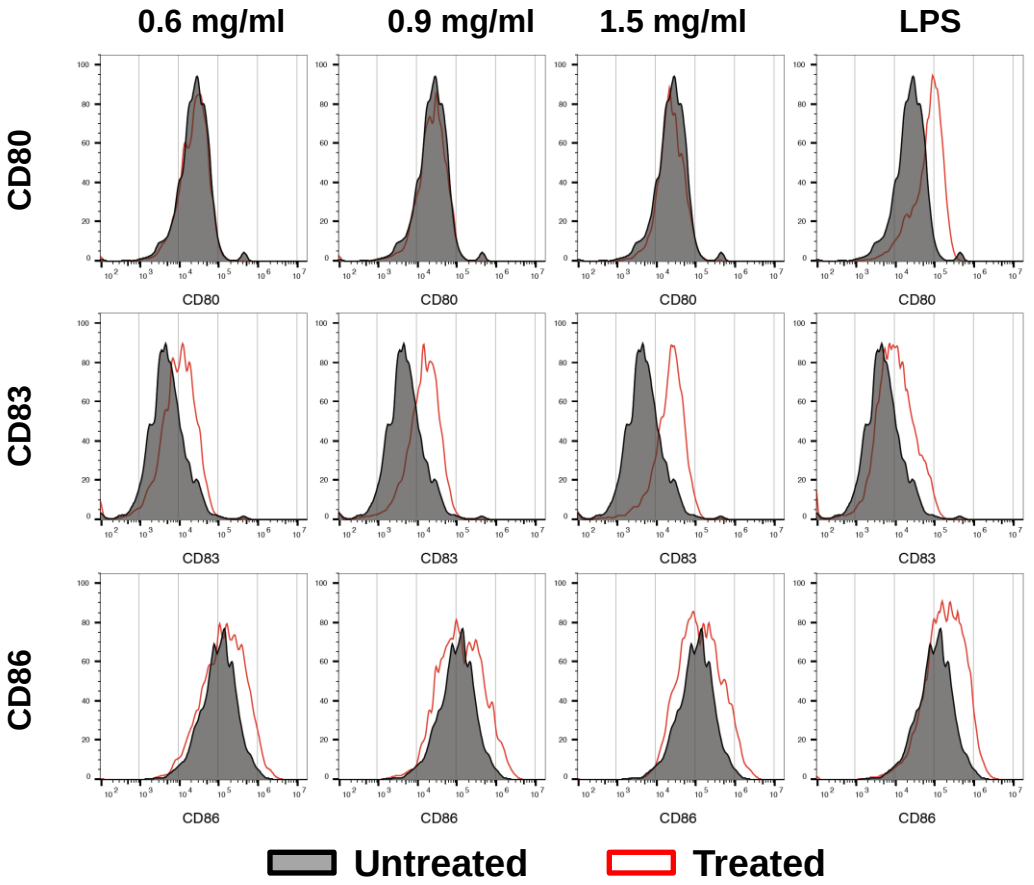


CD83



CD86





Conclusioni:

1. HID possiede una significativa **attività citotossica e pro-apoptotica** su cellule di adenocarcinoma colon-rettale umano (dld-1).

2. HID aumenta significativamente i livelli intracellulari di **ROS** e induce **stress del RE**.

3. HID induce la traslocazione sulla membrana cellulare esterna di **CLR**, **Hsp70** e promuove la liberazione nella matrice extracellulare di **ATP**.

4. Le cellule dld-1 trattate con HID inducono la **maturazione delle cellule dendritiche**.

Acknowledgment

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