Pharmacological induction of apoptosis with Camptothecin

Research Use Only

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Materials

- A cell line or primary cells susceptible to apoptosis induction.
- RPMI-1640 medium supplemented with 10% FCS
- 1 mM stock solution of Camptothecin prepared in DMSO
- Tissue culture flasks or tissue culture plates

Experimental Procedure

1. Prepare cells in fresh RPMI-1640 medium with 10% FCS at a concentration of 0.5 x 10^6 cells/ml in desired tissue culture flasks or tissue culture plates.

2. Add an appropriate amount of 1 mM Camptothecin to the cell suspension to achieve a final concentration of 4-6 μM. The negative control should consist of cells maintained in medium with an equivalent dilution of DMSO only.

3. Incubate cells for the amount of time optimal for your cell type in a humidified, 5% CO_2 incubator at 37°C. It is recommended that you first do a time course to get an idea of how sensitive you cells are to undergo apoptosis

4. Harvest cells by centrifugation and proceed with appropriate assay to evaluate the induction of apoptosis.

   Note: Other pharmacological reagents that have been shown to induce apoptosis include: Actinomycin D, Aphidocolin, Cycloheximide, Dexamethasone, 5-Fluorouracil, Hydroxyurea, and Staurosporine.

References

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Morris EJ, Geller HM. 1996. Induction of neuronal apoptosis by camptothecin, an inhibitor of DNA topoisomerase-I: evidence for cell cycle-independent toxicity. J Cell Biol. 1996 Aug;134(3):757-70.

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