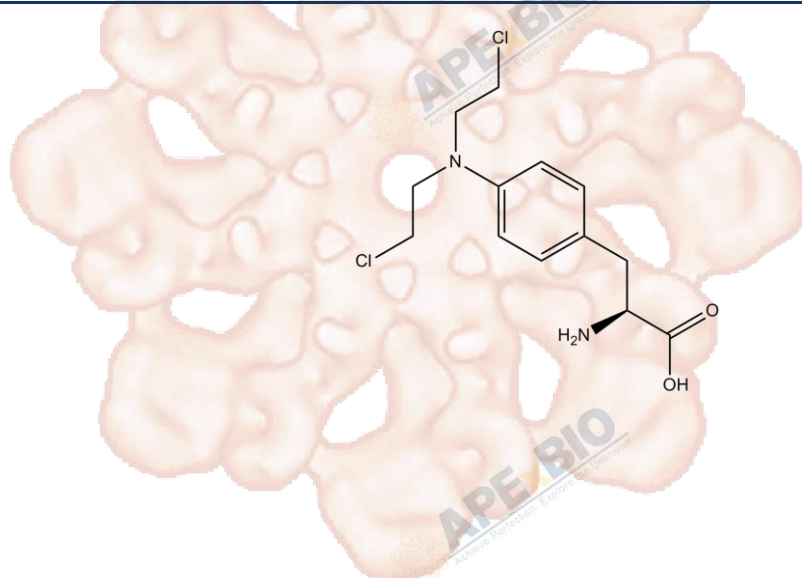


Product Data Sheet

Melphalan

Cat. No.:	A4473
CAS No.:	148-82-3
Formula:	C ₁₃ H ₁₈ Cl ₂ N ₂ O ₂
M.Wt:	305.2
Synonyms:	
Target:	Apoptosis
Pathway:	Other Apoptosis
Storage:	Store at RT



Solvent & Solubility

insoluble in H₂O; insoluble in EtOH; ≥6.85 mg/mL in DMSO

In Vitro

Preparing Stock Solutions	Solvent	Mass		
		1mg	5mg	10mg
	Concentration			
	1 mM	3.2765 mL	16.3827 mL	32.7654 mL
	5 mM	0.6553 mL	3.2765 mL	6.5531 mL
	10 mM	0.3277 mL	1.6383 mL	3.2765 mL

Please refer to the solubility information to select the appropriate solvent.

Biological Activity

Shortsummary

DNA alkylating agent

IC₅₀ & Target

Cell Viability Assay

In Vitro

Cell Line:	Human myeloma cell line RPMI 8226, neuroblastoma cell lines; SH-SY5Y, SK-N-AS, and SK-N-BE
Preparation method:	The solubility of this compound in DMSO is >6.9 mg/mL. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

	Reacting conditions:	30-min
	Applications:	Melphalan (5 and 10 pmol/l) resulted in an out-growth delay during the first 48 post-treatment. Melphalan treatment disclosed a relative increase of cells in S- and G-phases at 24 h followed by an accumulation of cells in G ₂ -phase at 48 h. Treatment with high melphalan concentrations (20 and 40 pmol/l) the accumulation in the G ₂ -phase was more persistent. Melphalan treatment (20 pmol/l) dramatically decreased late S- and G ₂ -phases. Exposure of a myeloma cell line (RPMI 8226) to a 30-minute pulse of melphalan (1-phenylalanine-mustard) resulted in a cell cycle progression delay characteristic for DNA cross-linking agents. Melphalan bound to DNA, RNA, and protein in cells in vitro. Melphalan induced chromosomal aberrations, sister chromatid exchange, micronuclei, mutations at the HPRT gene, and DNA damage in human cells in vitro. Melphalan induced transformation of C3H 10T1/2 and other cells. In cultured rodent cells, it induced chromosomal aberrations, sister chromatid exchange, gene mutations, and DNA damage. Melphalan induced aneuploidy and sex-linked recessive lethal mutations in Drosophila, and mutation in bacteria.
In Vivo	Animal experiment	
	Animal models:	Immunodeficient mice bearing human ovarian tumors from A2780 cells
	Dosage form:	Intraperitoneal injection, 11.7 mg/kg
	Applications:	In immunodeficient mice bearing human ovarian tumors from A2780 cells, melphalan (11.7 mg/kg, i.p.) severely inhibited the growth of previously untreated tumors, whereas the growth of tumors which had received prior treatment with melphalan was unaffected by the subsequent high dose.
	Other notes:	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

Product Citations

See more customer validations on www.apexbt.com.

References

- [1]. Fernberg J O, Lewensohn R, Skog S. Cell cycle arrest and DNA damage after melphalan treatment of the human myeloma cell line RPMI 8226[J]. European journal of haematology, 1991, 47(3): 161-167.
- [2]. MELPHALAN. Pharmaceuticals.Bookshelf

[3]. Caffrey P B, Zhang Y, Frenkel G D. Rapid development of drug resistance in human ovarian tumor xenografts after a single treatment with melphalan in Vivo[J]. Anticancer research, 1998, 18(4C): 3021-3025.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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