

# Small Molecules

**ABT-263**

B cell lymphoma 2 family inhibitor

Catalog #100-1173

25 mg



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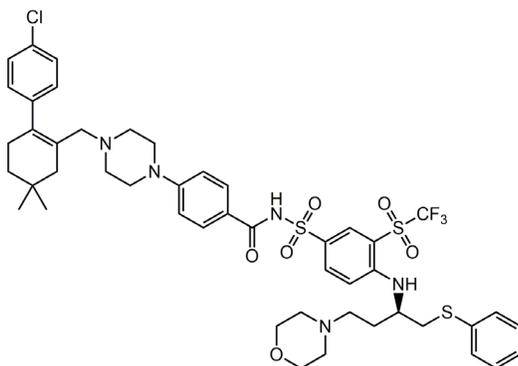
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## Product Description

ABT-263 is a chemotherapeutic agent and an inhibitor of B cell lymphoma 2 (Bcl-2), B cell lymphoma-extra large (Bcl-xL), and Bcl-2-like protein 2 (Bcl-W) ( $K_i = < 1$  nM,  $< 0.5$ , and  $< 1$  nM, respectively). Bcl-2 and Bcl-xL are anti-apoptotic proteins that regulate cell death by interacting with pro-apoptotic proteins like Bcl-2-like protein 11 (BIM) to induce or inhibit apoptosis (Tse et al.). ABT-263 displaces Bcl-xL from binding to BIM to allow cells to undergo apoptosis (Lagares et al.).

Alternative Names:	Navitoclax
CAS Number:	923564-51-6
Chemical Formula:	$C_{47}H_{55}ClF_3N_5O_6S_3$
Molecular Weight:	974.6 g/mol
Purity:	$\geq 98\%$
Chemical Name:	4-[4-[[2-(4-chlorophenyl)-5,5-dimethyl-1-cyclohexen-1-yl]methyl]-1-piperazinyl]-N-[[4-[[[(1R)-3-(4-morpholinyl)-1-[(phenylthio)methyl]propyl]amino]-3-[(trifluoromethyl)sulfonyl]phenyl]sulfonyl]-benzamide

Structure:



## Properties

Physical Appearance:	A white powder
Storage:	Product stable at $-20^{\circ}\text{C}$ as supplied. As a precaution, STEMCELL recommends storing all small molecules away from direct light. For long-term storage, store with a desiccant. Stable as supplied for 12 months from date of receipt.
Solubility:	<ul style="list-style-type: none"><li>• <math>\text{DMSO} \leq 25</math> mM</li></ul> For example, to prepare a 10 mM stock solution in DMSO, resuspend 10 mg in 1.03 mL of DMSO. Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported; however, as a general guide we recommend storage in DMSO at $-20^{\circ}\text{C}$ . Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application. Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

## Published Applications

### IMMUNOLOGY

- Reduces expression of mitochondrial antiviral signaling protein (MAVS) in macrophages (Kim et al.).
- Induces apoptosis in influenza A virus-infected cells by activating the caspase 9 mediated mitochondrial apoptosis pathway (Kakkola et al.).

### CANCER RESEARCH

- Inhibits tumor growth in small cell lung cancer xenograft models (Aguilar et al.).
- Acts as a selective senolytic in vitro by inducing apoptosis in senescent tumor cells after induction into senescence by chemotherapy or radiation (Saleh et al.).
- Promotes apoptosis in senescent murine Lewis lung carcinoma (LLC) cells (Saleh et al.).
- Induces G1/G0-phase arrest, apoptosis, and autophagy in human esophageal cancer cells (EC109, HKESC-2, and CaES-17) in vitro (Lin et al.).

## References

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- Kakkola L et al. (2013) Anticancer compound ABT-263 accelerates apoptosis in virus-infected cells and imbalances cytokine production and lowers survival rates of infected mice. *Cell Death Dis* 4(7): e742.
- Kim SH et al. (2021) Mitochondrial antiviral signaling protein is crucial for the development of pulmonary fibrosis. *Eur Respir J* 57(4): 2000652.
- Lagares D et al. (2017) Targeted apoptosis of myofibroblasts with the BH3 mimetic ABT-263 reverses established fibrosis. *Sci Transl Med* 9(420): eaal3765.
- Lin Q et al. (2017) ABT-263 induces G1/G0-phase arrest, apoptosis and autophagy in human esophageal cancer cells in vitro. *Acta Pharmacol Sin* 38(12): 1632–41.
- Saleh T et al. (2020) Clearance of therapy-induced senescent tumor cells by the senolytic ABT-263 via interference with BCL-XL–BAX interaction. *Mol Oncol* 14(10): 2504–19.
- Tse C et al. (2008) ABT-263: a potent and orally bioavailable Bcl-2 family inhibitor. *Cancer Res* 68(9): 3421–8.

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