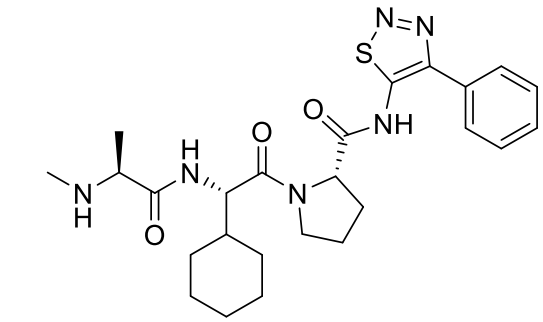
Product data sheet

MedKoo Cat#: 205764 Name: GDC-0152 free base CAS#: 873652-48-3 (free base) Chemical Formula: $C_{25}H_{34}N_6O_3S$ Exact Mass: 498.24131 Molecular Weight: 498.646	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
GDC-0152 is a second mitochondrial activator of caspases (Smac) mimetic inhibitor of IAPs (Inhibitor of Apoptosis Proteins) with potential antineoplastic activity. Smac mimetic GDC-0152 binds to the Smac binding groove on IAPs, including the direct caspase inhibitor X chromosome-linked IAP (XIAP) and the cellular IAPs 1 and 2, which may inhibit their activities and promote the induction of apoptosis through apoptotic signaling pathways. IAPs are overexpressed by many cancer cell types and suppress apoptosis by binding to and inhibiting active caspases-3, -7 and -9 via their baculoviral lAP repeat (BIR) domains.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	25.0	50.14
DMF:PBS (pH 7.2) (1:1)	0.5	1.00
DMSO	69.67	139.71
Ethanol	53.0	106.29

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	2.01 mL	10.03 mL	20.05 mL
5 mM	0.40 mL	2.01 mL	4.01 mL
10 mM	0.20 mL	1.00 mL	2.01 mL
50 mM	0.04 mL	0.20 mL	0.40 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Witkop EM, Wikfors GH, Proestou DA, Lundgren KM, Sullivan M, Gomez-Chiarri M. Perkinsus marinus suppresses in vitro eastern oyster apoptosis via IAP-dependent and caspase-independent pathways involving TNFR, NF-kB, and oxidative pathway crosstalk. Dev Comp Immunol. 2022 Apr;129:104339. doi: 10.1016/j.dci.2022.104339. Epub 2022 Jan 5. PMID: 34998862.
2. Soubéran A, Cappaï J, Chocry M, Nuccio C, Raujol J, Colin C, Lafitte D, Kovacic H, Quillien V, Baeza-Kallee N, Rougon G, Figarella-Branger D, Tchoghandjian A. Inhibitor of Apoptosis Proteins Determines Glioblastoma Stem-Like Cell Fate in an Oxygen-Dependent Manner. Stem Cells. 2019 Jun;37(6):731-742. doi: 10.1002/stem.2997. Epub 2019 Mar 28. PMID: 30920104.

In vivo study

Product data sheet

1. Shekhar TM, Burvenich IJG, Harris MA, Rigopoulos A, Zanker D, Spurling A, Parker BS, Walkley CR, Scott AM, Hawkins CJ. Smac mimetics LCL161 and GDC-0152 inhibit osteosarcoma growth and metastasis in mice. BMC Cancer. 2019 Sep 14;19(1):924. doi: 10.1186/s12885-019-6103-5. PMID: 31521127; PMCID: PMC6744692.
2. Flygare JA, Beresini M, Budha N, Chan H, Chan IT, Cheeti S, Cohen F, Deshayes K, Doerner K, Eckhardt SG, Elliott LO, Feng B, Franklin MC, Reisner SF, Gazzard L, Halladay J, Hymowitz SG, La H, LoRusso P, Maurer B, Murray L, Plise E, Quan C, Stephan JP, Young SG, Tom J, Tsui V, Um J, Varfolomeev E, Vucic D, Wagner AJ, Wallweber HJ, Wang L, Ware J, Wen Z, Wong H, Wong JM, Wong M, Wong S, Yu R, Zobel K, Fairbrother WJ. Discovery of a potent small-molecule antagonist of inhibitor of apoptosis (IAP) proteins and clinical candidate for the treatment of cancer (GDC-0152). J Med Chem. 2012 May 10;55(9):4101-13. doi: 10.1021/jm300060k. Epub 2012 Mar 28. PMID: 22413863; PMCID: PMC3366583.

7. Bioactivity

Biological target:

GDC-0152 is a potent IAPs inhibitor, and binds to the BIR3 domains of XIAP, cIAP1, cIAP2 and the BIR domain of ML-IAP with Ki values of 28 nM, 17 nM, 43 nM and 14 nM, respectively.

In vitro activity

IAP inhibitor GDC-0152 treatment for 3 or 4 h significantly increased granulocyte cell death at the 100 μM dose only (One-way ANOVA, Tukey HSD, $p < 0.02$), indicating potential cytotoxicity at this concentration.

Reference: Dev Comp Immunol. 2022 Apr;129:104339. https://pubmed.ncbi.nlm.nih.gov/34998862/

In vivo activity

Bioluminescence readings during the first 5 weeks after implantation demonstrated that GDC-0152 strongly suppressed tumor growth (Fig. 1a). Tumors regrew after GDC-0152 treatment ceased, as reflected by the weights of the tumors and the bioluminescence reading taken a week after the last drug administration. Confirming the anti-osteosarcoma activity of GDC-0152 detected using bioluminescence and via tumor weights at endpoint (Fig. 1a), tumors in GDC-0152-treated mice were less metabolically active and significantly smaller than the untreated tumors (Fig. 1b-e).

Reference: BMC Cancer. 2019 Sep 14;19(1):924. https://pubmed.ncbi.nlm.nih.gov/31521127/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.