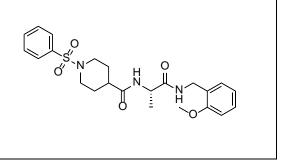# Product data sheet

MedKoo Cat#: 565383
Name: BC-1382
CAS#: 1013753-99-5
Chemical Formula: $C_{23}H_{29}N_3O_5S$
Exact Mass: 459.1828
Molecular Weight: 459.56

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:

BC-1382 is a potent ubiquitin E3 ligase HECTD2 inhibitor which specifically disrupts the HECTD2/PIAS1 interaction.

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

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.18 mL	10.88 mL	21.76 mL
5 mM	0.44 mL	2.18 mL	4.35 mL
10 mM	0.22 mL	1.09 mL	2.18 mL
50 mM	0.04 mL	0.22 mL	0.44 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. Coon TA, McKelvey AC, Lear T, Rajbhandari S, Dunn SR, Connelly W, Zhao JY, Han S, Liu Y, Weathington NM, McVerry BJ, Zhang Y, Chen BB. The proinflammatory role of HECTD2 in innate immunity and experimental lung injury. Sci Transl Med. 2015 Jul 8;7(295):295ra109. doi: 10.1126/scitranslmed.aab3881. PMID: 26157031; PMCID: PMC4706383.

In vivo study

1. Coon TA, McKelvey AC, Lear T, Rajbhandari S, Dunn SR, Connelly W, Zhao JY, Han S, Liu Y, Weathington NM, McVerry BJ, Zhang Y, Chen BB. The proinflammatory role of HECTD2 in innate immunity and experimental lung injury. Sci Transl Med. 2015 Jul 8;7(295):295ra109. doi: 10.1126/scitranslmed.aab3881. PMID: 26157031; PMCID: PMC4706383.

7. Bioactivity

Biological target: BC-1382 is an ubiquitin E3 ligase HECTD2 inhibitor.

In vitro activity

BC-1382 was tested in an in vitro binding assay (Fig. 7C). The result suggested that BC-1382 is a potent inhibitor of HECTD2 with IC50 (median inhibitory concentration) ≈ 5 nM toward disrupting the HECTD2/PIAS1 interaction. BC-1382 drastically increased PIAS1 protein level in a nonstimulus condition with IC50 ≈100 nM (fig. S8B). PIAS3, PIAS4, and HECTD2 protein levels appeared to be unchanged. BC-1382 did not alter mRNA levels of PIAS1, PIAS4, or HECTD2 (fig. S8C). BC-1382 also improved PIAS1 protein stability by increasing its t1/2 (fig. S8D). BC-1382 suppressed LPS-induced PIAS1 degradation and restored PIAS1 protein

levels at 800 nM (fig. S8E). Last, BC-1382 was able to suppress LPS-induced proinflammatory cytokines released by human peripheral blood mononuclear cells (PBMCs) (fig. S8F).

Reference: Sci Transl Med. 2015 Jul 8;7(295):295ra109. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4706383/

In vivo activity

To assess the in vivo anti-inflammatory activity of BC-1382, it was tested using P. aeruginosa– and LPS-induced pneumonia models. Briefly, C57BL/6J mice were challenged intratracheally with PA103 (104 CFU per mouse) or LPS (3 mg/kg). BC-1382 was given through intraperitoneal injection (10 mg/kg) at the same time. BC-1382 did not appear to affect BAL bacteria (Fig. 7D). However, it significantly decreased lavage protein concentrations, lavage cell counts, and cell infiltrates in both PA103-stimulated (Fig. 7, E, F, and H) and LPS-stimulated (fig. S9, A, B, and D) mice. Further, BC-1382 significantly decreased lavage cytokine levels in both models (Fig. 7G and fig. S9C).

Reference: Sci Transl Med. 2015 Jul 8;7(295):295ra109. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4706383/

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.