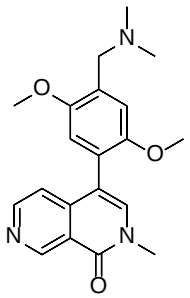
Product data sheet

MedKoo Cat#: 406829 Name: BI-9564 CAS#: 1883429-22-8 Chemical Formula: $C_{20}H_{23}N_3O_3$ Exact Mass: 353.1739 Molecular Weight: 353.42	
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:
BI-9564 is a potent and selective inhibitor of BRD9 and BRD7 bromodomains (Kds = 14.1 and 239 nM; IC50s = 75 nM and 3.4 µM, respectively). BI-9564 is useful in further exploring BRD9 bromodomain biology in both in vitro and in vivo settings. Selective inhibitors of bromodomain-containing protein 9 (BRD9) may have therapeutic potential in the treatment of human malignancies and inflammatory diseases.

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	5.0	14.15
DMF:PBS (pH 7.2) (1:1)	0.50	1.41
DMSO	5.44	15.39
Ethanol	9.0	25.47

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	2.83 mL	14.15 mL	28.29 mL
5 mM	0.57 mL	2.83 mL	5.66 mL
10 mM	0.28 mL	1.41 mL	2.83 mL
50 mM	0.06 mL	0.28 mL	0.57 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. Martin LJ, Koegl M, Bader G, Cockcroft XL, Fedorov O, Fiegen D, Gerstberger T, Hofmann MH, Hohmann AF, Kessler D, Knapp S, Knesl P, Kornigg S, Müller S, Nar H, Rogers C, Rumpel K, Schaaf O, Steurer S, Tallant C, Vakoc CR, Zeeb M, Zoephel A, Pearson M, Boehmelt G, McConnell D. Structure-Based Design of an in Vivo Active Selective BRD9 Inhibitor. J Med Chem. 2016 May 26;59(10):4462-75. doi: 10.1021/acs.jmedchem.5b01865. Epub 2016 Mar 10. PMID: 26914985; PMCID: PMC4885110.

In vivo study

1. Martin LJ, Koegl M, Bader G, Cockcroft XL, Fedorov O, Fiegen D, Gerstberger T, Hofmann MH, Hohmann AF, Kessler D, Knapp S, Knesl P, Kornigg S, Müller S, Nar H, Rogers C, Rumpel K, Schaaf O, Steurer S, Tallant C, Vakoc CR, Zeeb M, Zoephel A, Pearson M, Boehmelt G, McConnell D. Structure-Based Design of an in Vivo Active Selective BRD9 Inhibitor. J Med Chem. 2016 May 26;59(10):4462-75. doi: 10.1021/acs.jmedchem.5b01865. Epub 2016 Mar 10. PMID: 26914985; PMCID: PMC4885110.

7. Bioactivity

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Biological target:

BI-9564 is a BRD9/BRD7 bromodomains inhibitor with IC50s of 75 nM and 3.4 μM, respectively.

In vitro activity

Target engagement in the cell was demonstrated in a semiquantitative FRAP assay using a green fluorescent protein–BRD9 fusion protein expressed in U2OS cells. BI-9564 showed inhibition of BRD9 in cells at 100 nM. The cellular response to BRD9 inhibition was assessed in a broad cancer cell line panel. Treatment of the panel with BI-9564 resulted in selective growth inhibition of a significant proportion of AML cell lines tested (Supporting Information Figure 31).

Reference: J Med Chem. 2016 May 26;59(10):4462-75. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4885110/

In vivo activity

In order to evaluate the effect of BI-9564 in vivo, EOL-1 cells, stably transduced with a luciferase-expressing vector to allow continuous assessment of tumor load by bioluminescence, were injected in the tail vein of CIEA-NOG mice. Oral treatment with 180 mg/kg of BI-9564 was initiated on day 5 and applied daily (q.d.) with an interruption at days 18 and 19. A significant ($p = 0.0086$) reduction in tumor growth (measured in average radiance [p/s/cm2/sr]) compared to that of controls was observed on day 18, resulting in a median tumor growth inhibition (TGI) value of 52% (Figure 6a). Imaging data on day 18 provided evidence of a significantly reduced disease burden (Figure 6b) in mice treated with BI-9564.

Reference: J Med Chem. 2016 May 26;59(10):4462-75. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4885110/