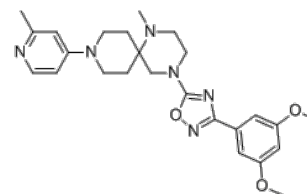

Product Name	: MRK-740
Cat. No.	: PC-73122
CAS No.	: 2387510-80-5
Molecular Formula	: C ₂₅ H ₃₂ N ₆ O ₃
Molecular Weight	: 464.57
Target	: Histone Methyltransferase (HMTase)
Solubility	: 10 mM in DMSO



Biological Activity

MRK-740 (MRK740) is a first-in-class, potent, selective and cell-active **PRDM9** inhibitor with IC₅₀ of 80 nM. MRK-740 is much less potent at inhibiting PRDM7 (IC₅₀=45 μM), does not inhibit 11 other PRDM family members, also shows selectivity against a panel of 108 enzymes and receptors. MRK-740 binds in the substrate-binding pocket (SPR K_d=87 nM), with unusually extensive interactions with the cofactor SAM, conferring SAM-dependent substrate-competitive inhibition. MRK-740 engages PRDM9 and inhibits PRDM9-dependent trimethylation of ectopic H3K4 (EC₅₀=0.8 μM) and endogenous H3K4 in HEK293T cells, with minimal impact on cell viability. MRK-740 specifically inhibits PRDM9-dependent methylation on endogenous chromatin, but does not affect H3K4 methylation activity from non-PRDM9 sources. MRK-740 does not affect proliferation of cancer cell lines. MRK-740 is a chemical probe for the PRDM subfamily of methyltransferases.

References

Allali-Hassani A, et al. *Nat Commun.* 2019 Dec 17;10(1):5759.

Caution: Product has not been fully validated for medical applications. Lab Use Only!

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