



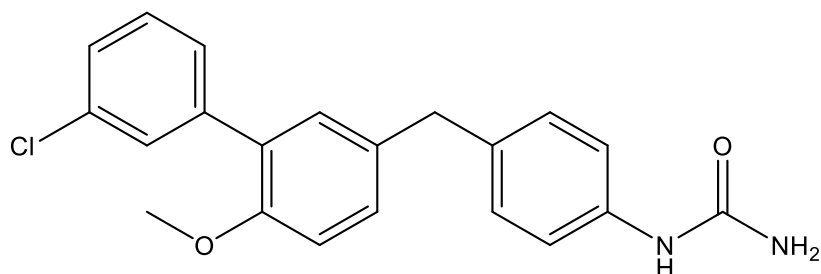
Catalog # 10-4367

D159687

CAS# 1155877-97-6

[4-[[3-(3-Chlorophenyl)-4-methoxyphenyl]methyl]phenyl]urea

Lot # FBS5035



D159687 is a potent ($IC_{50} = 28$ nM human PDE4D) and selective allosteric inhibitor of phosphodiesterase 4D (PDE4D) that increases cAMP levels and displays efficacy in cognition tests in mice and monkeys.^{1,2} It reversed cognitive deficits in a mouse model of traumatic brain injury.³ D159687 induced weight and fat mass loss in aged mice without changing lean mass.⁴ It also mitigated liver fibrosis by suppressing the expression of inflammatory and profibrogenic genes.⁵

- 1) Burgin *et al.* (2010), *Design of phosphodiesterase 4D (PDE4D) allosteric modulators for enhancing cognition with improved safety*; Nat. Biotechnol. **28** 63
- 2) Sutcliffe *et al.* (2014), *Efficacy of selective PDE4D negative allosteric modulations in the object retrieval task in female cynomolgus monkeys (Macaca fascicularis)*; PLoS One **9** e102449
- 3) Titus *et al.* (2018), *A negative allosteric modulator of PDE4D enhances learning after traumatic brain injury*; Neurobiol. Learn Mem. **148** 38
- 4) Muo *et al.* (2018), *Compound D159687, a phosphodiesterase 4D inhibitor, induces weight and fat mass loss in aged mice without changing lean mass, physical and cognitive function*; Biochem. Biophys. Res. Commun. **506** 1059
- 5) Kim *et al.* (2025), *Selective inhibition of long isoforms of phosphodiesterase 4D mitigates liver fibrosis in mouse models*; J. Clin. Invest. **136** 182571

PHYSICAL DATA

Molecular Weight:	366.85
Molecular Formula:	C ₂₁ H ₁₉ ClN ₂ O ₂
Purity:	>97% by HPLC
	NMR: (Conforms)
Solubility:	DMSO (4 mg/ml)
Physical Description:	White solid
Storage and Stability:	Store as supplied at -20°C for up to 2 years from the date of purchase. Solutions in DMSO may be stored at -20°C for up to 3 months.

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