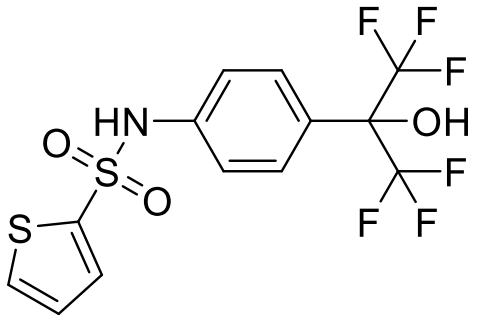
Product data sheet

MedKoo Cat#: 526818 Name: SR3335 CAS#: 293753-05-6 Chemical Formula: $C_{13}H_9F_6NO_3S_2$ Exact Mass: 404.9928 Molecular Weight: 405.33	
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:

SR3335, also known as ML 176, is a RORα selective inverse agonist. SR3335 directly binds to RORα, but not other RORs, and functions as a selective partial inverse agonist of RORα in cell-based assays. Furthermore, SR3335 suppresses the expression of endogenous RORα target genes in HepG2 involved in hepatic gluconeogenesis including glucose-6-phosphatase and phosphoenolpyruvate carboxykinase. SR3335 can be utilized as a chemical tool to probe the function of this receptor both in vitro and in vivo. SR3335 may hold utility for suppression of elevated hepatic glucose production in type 2 diabetics.

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	20	49.34
DMSO	16	39.47
Ethanol	33	81.42

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.47 mL	12.34 mL	24.67 mL
5 mM	0.49 mL	2.47 mL	4.93 mL
10 mM	0.25 mL	1.23 mL	2.47 mL
50 mM	0.05 mL	0.25 mL	0.49 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. Liang T, Qiu J, Li S, Deng Z, Qiu X, Hu W, Li P, Chen T, Liang Z, Zhou H, Gao B, Huang D, Liang A, Gao W. Inverse Agonist of Retinoid-Related Orphan Receptor-Alpha Prevents Apoptosis and Degeneration in Nucleus Pulposus Cells via Upregulation of YAP. Mediators Inflamm. 2021 Jul 28;2021:9954909. doi: 10.1155/2021/9954909. PMID: 34366712; PMCID: PMC8337132.

In vivo study

1. Rajput C, Cui T, Han M, Lei J, Hinde JL, Wu Q, Bentley JK, Hershenson MB. RORα-dependent type 2 innate lymphoid cells are required and sufficient for mucous metaplasia in immature mice. Am J Physiol Lung Cell Mol Physiol. 2017 Jun 1;312(6):L983-L993. doi: 10.1152/ajplung.00368.2016. Epub 2017 Mar 30. PMID: 28360114; PMCID: PMC5495952.
2. Kumar N, Kojetin DJ, Solt LA, Kumar KG, Nuhant P, Duckett DR, Cameron MD, Butler AA, Roush WR, Griffin PR, Burris TP. Identification of SR3335 (ML-176): a synthetic RORα selective inverse agonist. ACS Chem Biol. 2011 Mar 18;6(3):218-22. doi: 10.1021/cb1002762. Epub 2010 Dec 6. PMID: 21090593; PMCID: PMC3076127.

Product data sheet

7. Bioactivity

Biological target:

SR3335 competitively inhibits the binding of 25-hydroxycholesterol to the ligand binding domain (Ki = 220 nM) and inhibits constitutive transactivation activity (IC50 = 480 nM). It is without effect on RORβ, RORγ, farnesoid X receptor, or liver X receptor α.

In vitro activity

SR3335 is a promising drug in reversing the deleterious microenvironment in intervertebral disc degenerative disease (IDD) patients. SR3335 reversed the trend of increased apoptosis in nucleus pulposus (NP) cells induced by TNF-α treatment. Also, SR3335 mediated the effect in NP cells by regulating the YAP signaling pathway, especially by affecting the phosphorylation state of YAP.

Reference: Mediators Inflamm. 2021 Jul 28;2021:9954909. https://pubmed.ncbi.nlm.nih.gov/34366712/

In vivo activity

RORα inverse agonists such as SR3335 may hold utility for suppression of elevated hepatic glucose production in type 2 diabetics. SR3335-treated mice displayed lower plasma glucose levels following the pyruvate challenge, consistent with suppression of gluconeogenesis.

Reference: ACS Chem Biol. 2011 Mar 18;6(3):218-22. https://pubmed.ncbi.nlm.nih.gov/21090593/

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.