Product Data Sheet

Product Name: SR 1555 (hydrochloride)
Cat. No.: GC14418

Chemical Properties

Cas. No.	2309312-90-9		
Chemical Name	1-(4-((4'-(1,1,1,3,3,3-hexafluoro-2-hydroxypropan-2-yl)-[1,1'-biphenyl]-4-yl)methyl)piperazin-1-yl)ethanone, monohydrochloride		
SMILES	O=C(C)N(CC1)CCN1CC2=CC=C(C3=CC=C(C(O)(C(F)(F)F)C(F)(F)F)C=C3)C=C2.Cl		
Formula	$C_{22}H_{22}F_6N_2O_2$ • HCl	M.Wt	496.9
Solubility	≤1.6mg/ml in ethanol;3mg/ml in DMSO;5mg/ml in dimethyl formamide	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	SR 1555 (hydrochloride)		

Background

SR 1555 is a novel RORγ-specific synthetic ligand [1].

Retinoic acid receptor-related nuclear receptor (ROR) belongs to the nuclear receptor superfamily, a group of structurally related, ligand-dependent transcription factors. RORs function as key regulators of many physiological processes that occur during embryonic development and in the adult [2]. RORγ plays a dominant role in T cell differentiation, particularly in the development of TH17 cells, which are implicated in autoimmune diseases such as multiple sclerosis and rheumatoid arthritis [3].

In vitro: In a GAL4-NR chimeric co-transfection assay, SR1555 was devoid of LXR, FXR, and RORα activity, but it dose-dependently repressed the activity at RORγ with an IC50 of ≈ 1.5 μM. In competitive radioligand binding assays, SR1555 bound to RORγ with an IC50 of 1 μM. SR1555 specifically targeted RORγ and inhibited its transcriptional activity

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leading to suppression of IL-17 gene expression. EL4 cells treated SR1555 (10 μM) for 24 h inhibited Il17a gene expression by greater than 70%, demonstrating that SR1555 could inhibit the expression of this TH17 mediated cytokine [1]. SR1555 not only inhibited TH17 cell development and function but also increased the frequency of T regulatory cells [1].

References:

[1] Solt L A, Kumar N, He Y, et al. Identification of a selective RORγ ligand that suppresses Th17 cells and stimulates T regulatory cells[J]. ACS chemical biology, 2012, 7(9): 1515-1519.

[2] Jetten A M, Ueda E. The ROR nuclear orphan receptor subfamily: critical regulators of multiple biological processes[J]. Progress in nucleic acid research and molecular biology, 2001, 69: 205-247.

[3] Ivanov I I, McKenzie B S, Zhou L, et al. The orphan nuclear receptor RORγt directs the differentiation program of proinflammatory IL-17+ T helper cells[J]. Cell, 2006, 126(6): 1121-1133.