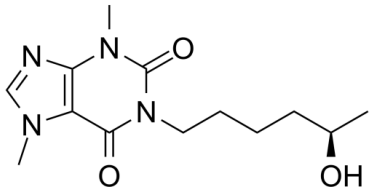
Data Sheet

Product Name:	(R)-Lisofylline
Cat. No.:	CS-0034091
CAS No.:	100324-81-0
Molecular Formula:	$C_{13}H_{20}N_4O_3$
Molecular Weight:	280.32
Target:	STAT
Pathway:	JAK/STAT Signaling; Stem Cell/Wnt
Solubility:	DMSO : 100 mg/mL (356.74 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

(R)-Lisofylline ((R)-Lisophylline) is a (R)-enantiomer of the metabolite of Pentoxifylline with anti-inflammatory properties. (R)-Lisofylline is a **lysophosphatidic acid acyltransferase** inhibitor with an **IC_{50}** of 0.6 μM and interrupts IL-12 signaling-mediated **STAT4** activation. (R)-Lisofylline has the potential for type 1 diabetes, autoimmune disorders research[1][2]. IC50 & Target: IC50: 0.6 μM (Lysophosphatidic acid acyltransferase)[1]

STAT4[1] **In Vitro:** (R)-Lisofylline blocks IL-12-driven Th1 differentiation and T cell proliferation in vitro, yet has no effect on IL-12 secretion from APCs ex vivo or in vitro[3]. **In Vivo:** (R)-Lisofylline reduces the impairment of insulin secretion induced by IL-1β in cultured rat islet cells, suppresses IFN-γ production, the onset of diabetes, and macrophage infiltration into islets from NOD mice, as well as Lisofylline improves insulin response and lowers glucose levels in Streptozotocin-treated rats after the oral glucose tolerance test[1].

(R)-Lisofylline prevents β cell dysfunction in NOD mice by inhibition of STAT4 phosphorylation which interrupts IL-12 signaling. (R)-Lisofylline ameliorates experimental allergic encephalomyelitis in mice[1].

(R)-Lisofylline also improves survival in mice injected with a lethal dose of LPS and ameliorates sepsis-induced lung injury in minipigs. In rats given IL-1 intratracheally (R)-Lisofylline pretreatment reduces lung leak but does not decrease neutrophil accumulation in lungs[1].

(R)-Lisofylline also suppresses release of TNF-α in vivo in mice and ex vivo in human blood stimulated with endotoxin derived from Salmonella or Escherichia coli[1].

References:

[1]. Elżbieta Wyska, et al. Physiologically Based Modeling of Lisofylline Pharmacokinetics Following Intravenous Administration in Mice. Eur J Drug Metab Pharmacokinet. 2016 Aug;41(4):403-12.

[2]. B M Hybertson, et al. Lisofylline Prevents Leak, but Not Neutrophil Accumulation, in Lungs of Rats Given IL-1 Intratracheally. J Appl Physiol (1985). 1997 Jan;82(1):226-32.

[3]. J J Bright, et al. Prevention of Experimental Allergic Encephalomyelitis via Inhibition of IL-12 Signaling and IL-12-mediated Th1 Differentiation: An Effect of the Novel Anti-Inflammatory Drug Lisofylline. J Immunol. 1998 Dec 15;161(12):7015-22.

CAIndexNames:

1H-Purine-2,6-dione, 3,7-dihydro-1-[(5R)-5-hydroxyhexyl]-3,7-dimethyl-

SMILES:

O=C(N1CCCC[C@H](O)C)N(C)C2=C(N(C)C=N2)C1=O

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 610-426-3128 Fax: 888-484-5008 E-mail: sales@ChemScene.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA