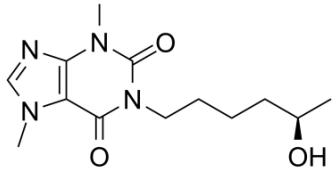
(R)-Lisofylline

Cat. No.:	HY-109854A
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
Storage:	Please store the product under the recommended conditions in the COA.



BIOLOGICAL ACTIVITY

Description	(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].
IC_{50} & 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.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA