Product Data Sheet

Product Name: Zileuton sodium
Cat. No.: GC14435

Chemical Properties

Cas. No.	118569-21-4		
SMILES	CC(N([O-])C(O)=N)C1=CC2=CC=CC=C2S1.[Na+]		
Formula	$C_{11}H_{11}N_2NaO_2S$	M.Wt	258.27
Solubility	Soluble in DMSO	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	Zileuton sodium		

Protocol

Animal experiment:

Rats: Rats are randomized into 6 groups (n=12 per group): sham I/R group, I/R group, zileuton+I/R group, zileuton+indomethacin+I/R group, zileuton+ketorolac+I/R group, and zileuton+nimesulide+I/R group. 5-LOX inhibitor zileuton (5 mg/kg, orally twice daily) is given alone or with non-selective COX inhibitor indomethacin (5 mg/kg, intraperitoneally), selective COX-1 inhibitor ketorolac (10 mg/kg, orally) or selective COX-2 inhibitor nimesulide (10 mg/kg, subcutaneously). COX inhibitors are given 15 minutes before zileuton administration. All drugs are given for 3 days prior to I/R or sham I/R procedure. Dose of zileuton (5 mg/kg, twice daily) is used in this study. Rats in sham I/R group receive the vehicle of zileuton orally. Zileuton is dissolved in dimethyl sulfoxide (DMSO) and further dilutions are made using saline to achieve a final DMSO concentration of 1%.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

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References:

[1]. Abueid L, et al. Inhibition of 5-lipoxygenase by zileuton in a rat model of myocardial infarction. Anatol J Cardiol. 2016 Nov 10
[2]. Kuvibidila S, et al. Hydroxyurea and Zileuton Differentially Modulate Cell Proliferation and Interleukin-2 Secretion by Murine Spleen Cells: Possible Implication on the Immune Function and Risk of Pain Crisis in Patients with Sickle Cell Disease. Ochsner
[3]. Gounaris E, et al. Zileuton, 5-lipoxygenase inhibitor, acts as a chemopreventive agent in intestinal polyposis, by modulating polyp

and systemic
inflammation. PLoS
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Background

Zileuton sodium (A 64077 sodium) is a potent and selective inhibitor of 5-lipoxygenase, exhibiting inflammatory activities.

In anti-CD3-treated cells, IL-2 decreases in Zileuton sodium (A 64077 sodium)-treated and untreated cells with increasing incubation time. Zileuton sodium (A 64077 sodium) likely reduces IL-2 levels by inhibiting 5-lipoxygenase, hence leukotriene B4 production, an IL-2 inducer[2].

In Zileuton sodium (A 64077 sodium) (5 mg/kg, p.o.) treated I/R rat, the effect of Zileuton to decrease NF-κB expression does not change significantly in the presence of COX inhibitors, and the group reveals significantly lower level of NF-κB staining. Zileuton (5 mg/kg, p.o.) treatment given to I/R rats decreases apoptotic index significantly. Zileuton has no significant effect on increased serum TNF-α levels in I/R group[1]. Zileuton sodium (A 64077 sodium) (1200 mg/kg) inhibits the polyp formation in APCΔ468 colon and small intestine. Zileuton treatment inhibits the proliferation rates of non epithelial cells in polyps, and increases the apoptosis rates in polyps in rat. There is significant increase in the number of apoptotic cells in the Zileuton-treated cells both in small intestine and in the colon. The reduced proliferation rate may significantly contribute to the reduction of polyposis in both the small intestine and colon of Zileuton-fed APCΔ468 mice[3].

References:
[1]. Abueid L, et al. Inhibition of 5-lipoxygenase by zileuton in a rat model of myocardial infarction. Anatol J Cardiol. 2016 Nov 10
[2]. Kuvibidila S, et al. Hydroxyurea and Zileuton Differentially Modulate Cell Proliferation and Interleukin-2 Secretion by Murine Spleen Cells: Possible Implication on the Immune Function and Risk of Pain Crisis in Patients with Sickle Cell Disease. Ochsner
[3]. Gounaris E, et al. Zileuton, 5-lipoxygenase inhibitor, acts as a chemopreventive agent in intestinal polyposis, by modulating polyp and systemic inflammation. PLoS One. 2015 Mar 6;10(3):e0121402