Product Data Sheet

Product Name: FAAH inhibitor 1
Cat. No.: GC36023

Chemical Properties

Cas. No.	326866-17-5		
SMILES	CC1=CC=C(N=C(C2=CC=C(NC(C3CCN(S(=O)(C4=CC=CS4)=O)CC3)=O)C=C2)S5)C5=C1		
Formula	$C_{24}H_{23}N_3O_3S_3$	M.Wt	497.65
Solubility	Soluble in DMSO	Storage	Store at -20°C,protect from light
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	FAAH inhibitor 1		

Protocol

Animal experiment [1]:

Animal models	Sprague-Dawley rats

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

Product Data Sheet

Preparation Method	Rats were removed from their home cages and briefly anesthetized with isoflurane. A dilute formalin solution (5%, 50μL) was then injected into the plantar surface of the right hindpaw. Rats were placed on an elevated mesh rack for observation. The amount of time spent licking or guarding the injected hindpaw was measured in seconds in 5min blocks for one hour following hindpaw injection. FAAH inhibitor 1 was dissolved in DMSO to a stock concentration of 10mM. The 10mM stock was further diluted into injectable doses (0.1 and 1.0mg/kg) using a vehicle solution comprising 10% ethanol, 10% cremophor, and 80% saline. Ketoprofen was dissolved in the same vehicle. Drugs were injected intraperitoneally in a volume of 1mL/kg. All drugs were administered 30min before hindpaw injection of formalin.
Dosage form	0.1, 1mg/kg; i.p.
Applications	Intraperitoneal administration of the higher dose of FAAH inhibitor 1 attenuates licking and guarding behaviors induced by an intraplantar injection of formalin. The lower dose of FAAH inhibitor 1 was ineffective suggesting a dose-dependent relationship in antinociception. The magnitude of antinociception produced by 1mg/kg of FAAH inhibitor 1 is comparable to antinociception produced by a high dose of ketoprofen (30mg/kg).

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

References:
[1] Wilt S, Kodani S, Valencia L, et al. Further exploration of the structure-activity relationship of dual soluble epoxide hydrolase/fatty acid amide hydrolase inhibitors[J]. Bioorganic & medicinal chemistry, 2021, 51: 116507.

Background

FAAH Inhibitor 1 is a selective, reversible inhibitor of fatty acid amide hydrolase (FAAH), with an IC_{50} value of 18±8nM[1]. FAAH Inhibitor 1 exhibits no off-target activity against other serine hydrolases and is suitable for use in research on neurological disorders[2, 3]. FAAH Inhibitor 1 acts as a dual inhibitor of both FAAH and soluble epoxide hydrolase (sEH)[4].

In vivo, FAAH Inhibitor 1 (1mg/kg), administered via intraperitoneal injection in a rat model of formalin-induced acute inflammatory pain, attenuated the licking and guarding behaviors elicited by plantar formalin injection; the resulting analgesic effect was comparable to that of ketoprofen (a conventional non-steroidal anti-inflammatory drug)[4].

References:
[1] Wang X, Sarris K, Kage K, et al. Synthesis and evaluation of benzothiazole-based

analogues as novel, potent, and selective fatty acid amide hydrolase inhibitors[J]. Journal of medicinal chemistry, 2009, 52(1): 170-180.
[2] Dider S, Ji J, Zhao Z, et al. Molecular mechanisms involved in the side effects of fatty acid amide hydrolase inhibitors: a structural phenomics approach to proteome-wide cellular off-target deconvolution and disease association[J]. NPJ systems biology and applications, 2016, 2(1): 16023.
[3] Papa A, Pasquini S, Contri C, et al. Polypharmacological approaches for CNS diseases: focus on endocannabinoid degradation inhibition[J]. Cells, 2022, 11(3): 471.
[4] Wilt S, Kodani S, Valencia L, et al. Further exploration of the structure-activity relationship of dual soluble epoxide hydrolase/fatty acid amide hydrolase inhibitors[J]. Bioorganic & medicinal chemistry, 2021, 51: 116507.

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