

Product Data Sheet

Product Name: CYM 5520

Cat. No.: GC15765

Chemical Properties

Cas. No. 1449747-00-5

Chemical Name 1-[2-[2,5-dimethyl-1-(phenylmethyl)-1H-pyrrol-3-yl]-2-oxoethyl]-1,6-dihydro-6-oxo-3-pyridinecarbonitrile

SMILES O=C1C=CC(C#N)=CN1CC(C2=C(C)N(CC3=CC=CC=C3)C(C)=C2)=O

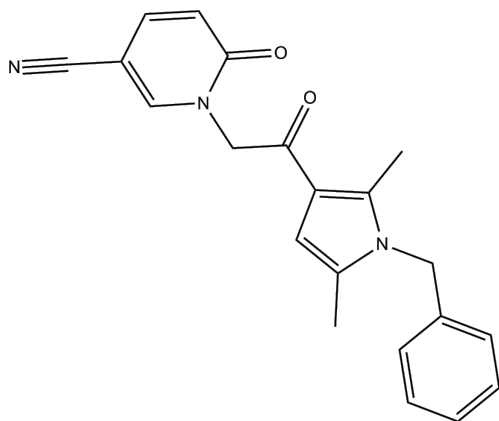
Formula $C_{21}H_{19}N_3O_2$ M.Wt 345.4

Solubility $\leq 30\text{mg/ml}$ in DMSO; 30mg/ml in dimethyl formamide Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C 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



Protocol

Cell experiment [1]:

Cell lines Human HCC-derived HuH7 cells.

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

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 The cultured cells were seeded (1×10^5 cells/well) onto the upper chamber in the serum-free RPMI-1640 medium. When indicated, the cells were pretreated with CYM 5520, in the upper chamber for 60min at 37°C. Then, HGF (30ng/ml) was added to the lower chamber for 23h at 37°C. The migrated cells adherent to the underside of the membrane were fixed with 4% paraformaldehyde and stained with 4',6-diamidino-2-phenylindole (DAPI) solution.

Reaction Conditions 10μM; 60min.

Applications CYM 5520 significantly suppressed the HGF-induced migration of HuH7 cells.

Animal experiment [2]:

Animal models Mice

Preparation Method Mice were housed in SPF cages without any pathogens and with access to mouse chow and water ad libitum. Treatment was started 5 weeks after ovariectomy (OVX). CYM 5520 was administered intraperitoneally at 10mg/kg/day for 5 consecutive days per week for 6 weeks.

Dosage form 10mg/kg; i.p.; 5 days/week; 6 weeks.

Applications CYM 5520 correct osteopenia and stimulate osteoblast activity in OVX mice.

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

References:

- [1]. Matsushima-Nishiwaki, Rie, et al. "Sphingosine 1-phosphate (S1P) reduces hepatocyte growth factor-induced migration of hepatocellular carcinoma cells via S1P receptor 2." PLoS One 13.12 (2018): e0209050.
- [2]. Weske, Sarah, et al. "Agonist-induced activation of the S1P receptor 2 constitutes a novel osteoanabolic therapy for the treatment of osteoporosis in mice." Bone 125 (2019): 1-7.

Background

CYM 5520 is a selective and allosteric sphingosine 1-phosphate receptor 2 (S1PR2) agonist with an EC₅₀ of 480nM^[1]. CYM 5520 is used in research on S1PR2-mediated bone metabolism/bone regeneration, tumor migration, inflammatory immune regulation, and receptor signaling pathways.

In vitro, CYM 5520 (10μM; 60min) significantly suppressed HGF-induced migration of HuH7 cells^[2]. Treatment of HEK293T cells with CYM 5520 (10μM; 2h) induced a marked increase in phospho-ERK1/2 levels (a downstream marker of S1P2 activation)^[3].

In vivo, CYM 5520 (10mg/kg; i.p.; 5 days/week; 6 weeks) corrected osteopenia and stimulated osteoblast activity in OVX C57Bl6J mice^[4]. CYM 5520 (1mg/kg; i.p.; once daily; 28 days) increased the mRNA expression of osteoblast differentiation markers, including ALP, OPN, BSP, and osteocalcin, in the tibia of 8-week-old male mice^[5].

References:

- [1]. Satsu, Hideo, et al. "A sphingosine 1-phosphate receptor 2 selective allosteric agonist." Bioorganic & medicinal chemistry 21.17 (2013): 5373-5382.
- [2]. Matsushima-Nishiwaki, Rie, et al. "Sphingosine 1-phosphate (S1P) reduces hepatocyte growth factor-induced migration of hepatocellular carcinoma cells via S1P receptor 2." PLoS One 13.12 (2018): e0209050.
- [3]. Pitman, Melissa R., et al. "The sphingosine 1-phosphate receptor 2/4 antagonist JTE-013 elicits off-target effects on sphingolipid metabolism." Scientific reports 12.1 (2022): 454.
- [4]. Weske, Sarah, et al. "Agonist-induced activation of the S1P receptor 2 constitutes a novel osteoanabolic therapy for the treatment of osteoporosis in mice." Bone 125 (2019): 1-7.
- [5]. Matsuzaki, Etsuko, et al. "Sphingosine-1-phosphate receptor 2 agonist induces bone formation in

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

rat apicoectomy and alveolar bone defect model." Journal of Dental Sciences 17.2 (2022): 787-794.

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA