Small Molecules

HPI-1

Hedgehog pathway inhibitor

Catalog # 72492 5 mg
72494 25 mg

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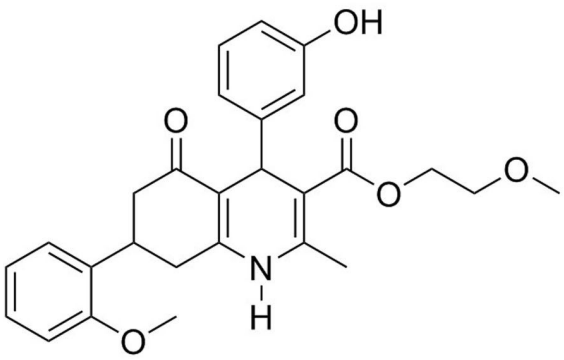
Product Description

HPI-1 is a Hedgehog (HH) pathway inhibitor that suppresses signaling through Sonic Hedgehog (SHH; IC_{50} = 1.5 µM) without significantly affecting WNT signaling (IC_{50} ≥ 30 µM; Hyman et al.). HPI-1 suppresses HH activation induced by loss of Suppressor of Fused or by GLI overexpression, suggesting action at post-translational modification of GLI protein or at the interaction of GLI with a co-factor (Hyman et al.). HPI-1 also inhibits signaling through the oncogenic Smoothened (SMO) mutant SMOM2 in neuron precursors, preventing cell proliferation (Hyman et al.).

Molecular Name:	HPI-1
Alternative Names:	Hedgehog pathway inhibitor 1; 1,4,5,6,7,8-hexahydro-4-(3-hydroxyphenyl)-7-(2-methoxyphenyl)-2-methyl-5-oxo-3-quinolinecarboxylic acid-2-methoxyethyl ester
CAS Number:	599150-20-6
Chemical Formula:	$C_{27}H_{29}NO_6$
Molecular Weight:	463.5 g/mol
Purity:	> 95%
Chemical Name:	1,4,5,6,7,8-hexahydro-4-(3-hydroxyphenyl)-7-(2-methoxyphenyl)-2-methyl-5-oxo-3-quinolinecarboxylic acid-2-methoxyethyl ester
Structure:	

Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect from prolonged exposure to light. Stable as supplied for 12 months from date of receipt.
Solubility:	· Absolute ethanol ≤ 40 mM · DMSO ≤ 6.4 mM For example, to prepare a 10 mM stock solution in absolute ethanol, resuspend 1 mg in 216 µL of absolute ethanol. Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application. Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

MAINTENANCE AND SELF-RENEWAL
· Demonstrates the importance of Hedgehog pathway by inhibiting proliferation mediated by the oncogenic Smoothened (SMO) mutant SMOM2 in cultured cerebellar granule neuron precursor cells (Hyman et al.).
CANCER RESEARCH
· Reduces growth of MDA-MB-231 breast cancer cells (Kwon et al.).

References

Hyman JM et al. (2009) Small-molecule inhibitors reveal multiple strategies for Hedgehog pathway blockade. Proc Natl Acad Sci USA 106(33): 14132–7.
Kwon Y-J et al. (2011) Gli1 enhances migration and invasion via up-regulation of MMP-11 and promotes metastasis in ERα negative breast cancer cell lines. Clin Exp Metastasis 28(5): 437–49.

Related Small Molecules

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This product is hazardous. Please refer to the Safety Data Sheet (SDS).