Small Molecules

HPI-1

Hedgehog pathway inhibitor

Catalog # 72492 5 mg
72494 25 mg

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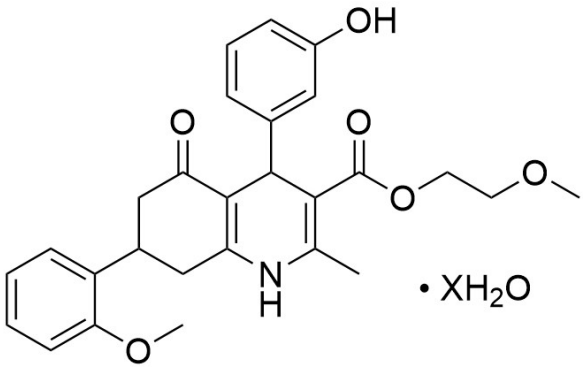
Product Description

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.). This product is supplied as the hydrate form of the molecule.

Molecular Name:	HPI-1 (Hydrate)
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:	Not applicable
Chemical Formula:	$C_{27}H_{29}NO_6 \bullet XH_2O$
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 hydrate
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:	· DMSO ≤ 6.4 mM · Absolute ethanol ≤ 40 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).