

Small Molecules

CAY10585

Hypoxia Inducible Factor-1 α (HIF1 α) inhibitor

Catalog # 72432

10 mg



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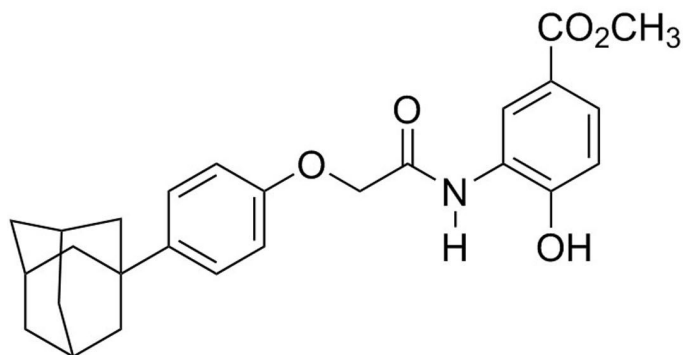
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Product Description

CAY10585 is a novel small molecule inhibitor of hypoxia inducible factor 1 (HIF-1), a heterodimeric transcription factor composed of HIF-1 α and HIF-1 β subunits. Whereas the HIF-1 β subunit is constitutively expressed, the HIF-1 α subunit is regulated by cellular oxygen levels: under normoxic conditions HIF-1 α is targeted for destruction by the ubiquitin-proteasome system, whereas under hypoxic conditions HIF-1 α accumulates and dimerizes with HIF-1 β to promote the transcription of a number of genes involved in angiogenesis, glycolysis, growth factor signaling, tumor invasion, and metastasis. CAY10585 blocks HIF-1 accumulation and prevents HIF-1 transcriptional activity (IC₅₀ values of 2.6 and 0.7 μ M in Hep3B and AGS cell reporter assays, respectively; Lee et al.).

Molecular Name:	CAY10585
Alternative Names:	HIF-1 α inhibitor; Hypoxia Inducible Factor-1 α Inhibitor
CAS Number:	934593-90-5
Chemical Formula:	C ₂₆ H ₂₉ NO ₅
Molecular Weight:	435.5 g/mol
Purity:	≥ 97%
Chemical Name:	4-hydroxy-3-[[2-(4-tricyclo[3.3.1.1 ^{3,7}]dec-1-ylphenoxy)acetyl]amino]-benzoic acid, methyl ester
Structure:	



Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect from prolonged exposure to light. For product expiry date, please contact techsupport@stemcell.com.
Solubility:	· DMSO ≤ 20 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 230 μ L of fresh DMSO.

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

DIFFERENTIATION

- Inhibits BMP9- and HIF-1-induced osteogenic differentiation in mesenchymal stem cells (Hu et al.).
- Rescues cardiomyocyte differentiation in Fgfr1(-/-) mouse embryonic stem cells (Crescini et al.).

References

- Crescini E et al. (2013) Ascorbic acid rescues cardiomyocyte development in Fgfr1(-/-) murine embryonic stem cells. *Biochim Biophys Acta* 1833(1): 140–7.
- Hu N et al. (2013) BMP9-regulated angiogenic signaling plays an important role in the osteogenic differentiation of mesenchymal progenitor cells. *J Cell Sci* 126(2): 532–41.
- Lee K et al. (2007) (Aryloxyacetylamino)benzoic acid analogues: A new class of hypoxia-inducible factor-1 inhibitors. *J Med Chem* 50(7): 1675–84.
- Safran M & Kaelin WG. (2003) HIF hydroxylation and the mammalian oxygen-sensing pathway. *J Clin Invest* 111(6): 779–83.
- Wang GL et al. (1995) Hypoxia-inducible factor 1 is a basic-helix-loop-helix-PAS heterodimer regulated by cellular O₂ tension. *Proc Natl Acad Sci* 92(12): 5510–5514.

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