Small Molecules

FAK Inhibitor 14

Focal adhesion kinase 1 (FAK1) inhibitor

Catalog # 73132 500 mg
73134 5 g

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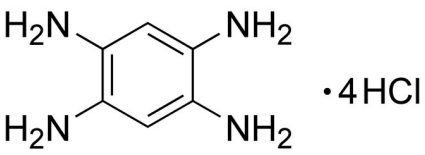
Product Description

FAK Inhibitor 14 is a direct inhibitor of focal adhesion kinase 1 (FAK1) autophosphorylation at Y397 (IC_{50} ≅ 1 µM; Golubovskaya et al.). There is no known significant effect on the activity of a range of other kinases, including the homolog PYK-2 (Golubovskaya et al.). This product is supplied as the tetrahydrochloride salt of the molecule.

Molecular Name: FAK Inhibitor 14 (Tetrahydrochloride)
Alternative Names: Focal Adhesion Kinase; Y15
CAS Number: 4506-66-5
Chemical Formula: $C_6H_{10}N_4 \cdot 4HCl$
Molecular Weight: 284.0 g/mol
Purity: ≥ 95%
Chemical Name: benzene-1,2,4,5-tetrayltetraamine tetrahydrochloride
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:
· Water ≤ 70 mM
· DMSO ≤ 70 mM
For example, to prepare a 10 mM stock solution in water, resuspend 100 mg in 35.2 mL of water.

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.

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

CANCER RESEARCH
· Demonstrates anti-tumor activity in multiple cell lines and in xenograft tumor models (Beierle et al.; Golubovskaya et al.; Hochwald et al.; O'Brien et al.).
DISEASE MODELING
· Decreases phenylephrine-activated stiffening of mouse aortic tissue, a model of early cardiovascular disease (Saphirstein et al.).

References

Beierle EA et al. (2010) Inhibition of focal adhesion kinase decreases tumor growth in human neuroblastoma. Cell Cycle 9(5): 1005–15.
Golubovskaya VM et al. (2008) A small molecule inhibitor, 1,2,4,5-benzenetetraamine tetrahydrochloride, targeting the y397 site of focal adhesion kinase decreases tumor growth. J Med Chem 51(23): 7405–16.
Hochwald SN et al. (2009) A novel small molecule inhibitor of FAK decreases growth of human pancreatic cancer. Cell Cycle 8(15): 2435–43.
O'Brien S et al. (2014) FAK inhibition with small molecule inhibitor Y15 decreases viability, clonogenicity, and cell attachment in thyroid cancer cell lines and synergizes with targeted therapeutics. Oncotarget 5(17): 7945–59.
Saphirstein RJ et al. (2013) The focal adhesion: a regulated component of aortic stiffness. PLoS One 8(4): e62461.

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