Small Molecules

Pifithrin-mu

p53 inhibitor

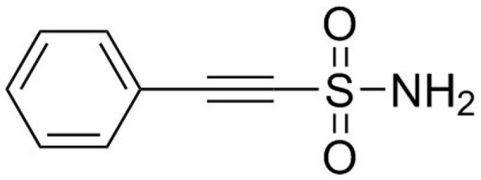
Catalog # 72802 10 mg
72804 50 mg

STEMCELL™ TECHNOLOGIES
Scientists Helping Scientists™ | WWW.STEMCELL.COM
TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713
INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM
FOR GLOBAL CONTACT DETAILS VISIT OUR WEBSITE

Product Description

Pifithrin-mu (PFT-μ) is an inhibitor of p53-mediated apoptosis, preventing p53 binding to Bcl-xL and Bcl-2 at the mitochondrial surface, without affecting p53 transactivational activities (Strom et al.). In vitro, PFT-μ binds both p53 (Kd = 0.82 mM) and Bcl-xL (Kd = 0.80 mM; Hagn et al.). PFT-μ also interacts selectively with heat shock protein 70 (HSP70), leading to disruption of the association between HSP70 and many of its co-chaperones and substrate proteins (Leu et al.).

Molecular Name: Pifithrin-mu
Alternative Names: 2-Phenylethynesulfonamide; PFT-μ; Pifithrin-μ
CAS Number: 64984-31-2
Chemical Formula: $C_8H_7NO_2S$
Molecular Weight: 181.2 g/mol
Purity: ≥ 98%
Chemical Name: Ethynesulfonamide, 2-phenyl-
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 ≤ 75 mM
· DMSO ≤ 75 mM
For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 552 µL 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

MAINTENANCE AND SELF-RENEWAL
· In combination with Rho-associated coiled-coil containing protein kinase (ROCK) inhibitor Y-27632 (Catalog #72302), improves cell recovery after cryopreservation (Xu et al.).
· Inhibits DNA damage-induced apoptosis in human embryonic stem cells (Qin et al.).

References

Hagn F et al. (2010) BclxL changes conformation upon binding to wild-type but not mutant p53 DNA binding domain. J Biol Chem 285(5): 3439–50.
Leu JI-J et al. (2009) A small molecule inhibitor of inducible heat shock protein 70. Mol Cell 36(1): 15–27.
Qin H et al. (2007) Regulation of apoptosis and differentiation by p53 in human embryonic stem cells. J Biol Chem 282(8): 5842–52.
Strom E et al. (2006) Small-molecule inhibitor of p53 binding to mitochondria protects mice from gamma radiation. Nat Chem Biol 2(9): 474–9.
Xu X et al. (2010) Enhancement of cell recovery for dissociated human embryonic stem cells after cryopreservation. Biotechnol Prog 26(3): 781–8.

Related Small Molecules

For a complete list of small molecules available from STEMCELL Technologies, visit www.stemcell.com/smallmolecules or contact us at techsupport@stemcell.com.

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