Small Molecules

Pifithrin-mu

p53 inhibitor

Catalog # 72802 10 mg
72804 50 mg

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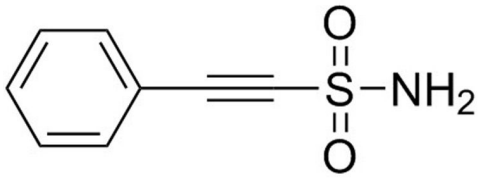
Product Description

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. For product expiry date, please contact techsupport@stemcell.com.
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, improves cell recovery after cryopreservation (Xu et al.).
· Inhibits DNA damage-induced apoptosis in human embryonic stem (ES) 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.

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