Small Molecules

PS-48

PI3K/AKT pathway activator; Activates PDK1

Catalog # 72832 10 mg
72834 50 mg

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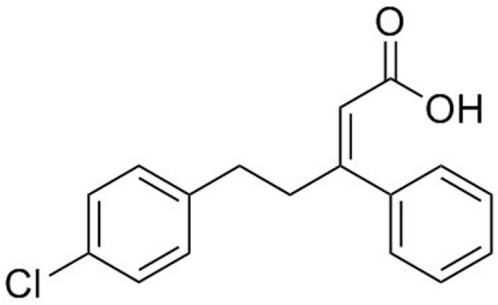
Product Description

PS-48 is a phosphoinositide-dependent protein kinase-1 (PDK1) activator. It acts by binding to the HM/PIF binding pocket of PDK1 rather than the ATP-binding site (Kd = 10.3 µM; Hindie et al.; Stroba et al.). PDK1 is a master kinase upstream of the AGC kinases (AKT, S6K, RSK, SGK, and PKC) in response to increases in the second messenger PtdIns-(3,4,5)-P_3 (Bayascas).

Molecular Name:	PS-48
Alternative Names:	Not applicable
CAS Number:	1180676-32-7
Chemical Formula:	$C_{17}H_{15}ClO_2$
Molecular Weight:	286.8 g/mol
Purity:	≥ 98%
Chemical Name:	(Z)-5-(4-chlorophenyl)-3-phenylpent-2-enoic acid
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 ≤ 100 mM · DMSO ≤ 100 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 349 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

REPROGRAMMING
· In combination with A-83-01 and PD0325901, enhances reprogramming of neonatal human epidermal keratinocytes transduced with OCT4 and KLF4 (Zhu et al.).

References

Bayascas JR. (2010) PDK1: the major transducer of PI 3-kinase actions. Curr Top Microbiol Immunol 346: 9–29.
Hindie V et al. (2009) Structure and allosteric effects of low-molecular-weight activators on the protein kinase PDK1. Nat Chem Biol 5(10): 758–64.
Stroba A et al. (2009) 3,5-Diphenylpent-2-enoic acids as allosteric activators of the protein kinase PDK1: structure-activity relationships and thermodynamic characterization of binding as paradigms for PIF-binding pocket-targeting compounds. J Med Chem 52(15): 4683–93.
Zhu S et al. (2010) Reprogramming of human primary somatic cells by OCT4 and chemical compounds. Cell Stem Cell 7(6): 651–5.

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