

Small Molecules

TWS119

WNT pathway activator; Inhibits GSK3 β

Catalog # 73512
73514

1 mg
10 mg



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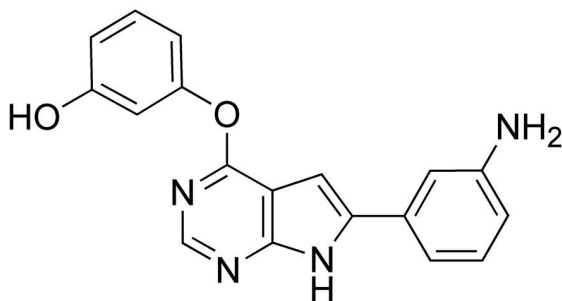
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Product Description

TWS119 is a potent disubstituted pyrrolopyrimidine inhibitor of glycogen synthase kinase 3 beta (GSK3 β) with an IC₅₀ of 30 nM and K_d of 126 nM (Ding et al.). GSK3 is a serine/threonine kinase that is a key inhibitor of the WNT pathway; therefore TWS119 functions as a WNT pathway activator.

Molecular Name:	TWS119
Alternative Names:	GSK 3B Inhibitor XII
CAS Number:	601514-19-6
Chemical Formula:	C ₁₈ H ₁₄ N ₄ O ₂
Molecular Weight:	318.3 g/mol
Purity:	≥ 90%
Chemical Name:	3-[[6-(3-aminophenyl)-7H-pyrrolo[2,3-d]pyrimidin-4-yl]oxy]phenol
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 ≤ 60 mM · Absolute ethanol ≤ 0.9 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 314 μ L of 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

- Maintains the bi-potent, quiescent state in hepatic stellate cells of Wistar rats (Kordes et al.).

DIFFERENTIATION

- Induces differentiation of mouse embryonal carcinoma and embryonic stem cells to neurons (Ding et al.).
- Induces production of T memory stem cell-like (T-SCM) cells from mouse or human CD8+ T cells with evidence of increased persistence, proliferation, and anti-tumor activity after adoptive transfer of mouse-derived T-SCM (Forget et al.; Gattinoni et al.).

CANCER RESEARCH

- Inhibits cell proliferation and induces apoptosis in human alveolar rhabdomyosarcoma cells (Zeng et al.).

References

- Ding S et al. (2003) Synthetic small molecules that control stem cell fate. *Proc Natl Acad Sci U S A* 100(13): 7632–7.
- Forget M-A et al. (2012) Stimulation of Wnt/ β -catenin pathway in human CD8+ T lymphocytes from blood and lung tumors leads to a shared young/memory phenotype. *PLoS One* 7(7): e41074.
- Gattinoni L et al. (2009) Wnt signaling arrests effector T cell differentiation and generates CD8+ memory stem cells. *Nat Med* 15(7): 808–13.
- Kordes C et al. (2008) Canonical Wnt signaling maintains the quiescent stage of hepatic stellate cells. *Biochem Biophys Res Commun* 367(1): 116–23.
- Zeng F-Y et al. (2010) Glycogen synthase kinase 3 regulates PAX3-FKHR-mediated cell proliferation in human alveolar rhabdomyosarcoma cells. *Biochem Biophys Res Commun* 391(1): 1049–55.

Related Small Molecules

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