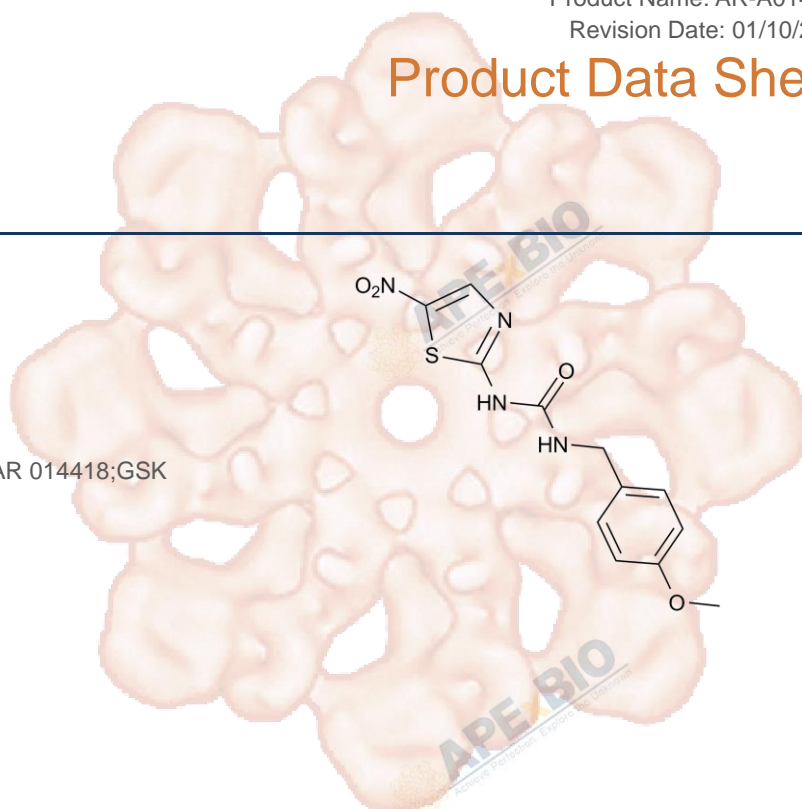


Product Data Sheet

AR-A014418

Cat. No.:	A3184
CAS No.:	487021-52-3
Formula:	C ₁₂ H ₁₂ N ₄ O ₄ S
M.Wt:	308.31
Synonyms:	AR-AO 14418; AR 0133418; AR 014418; GSK-3β; inhibitor
Target:	PI3K/Akt/mTOR Signaling
Pathway:	GSK-3
Storage:	Store at -20°C



Solvent & Solubility

insoluble in EtOH; insoluble in H₂O; ≥15.4 mg/mL in DMSO

In Vitro

Preparing Stock Solutions	Solvent		Mass		
	Concentration		1mg	5mg	10mg
	1 mM		3.2435 mL	16.2174 mL	32.4349 mL
	5 mM		0.6487 mL	3.2435 mL	6.4870 mL
	10 mM		0.3243 mL	1.6217 mL	3.2435 mL

Please refer to the solubility information to select the appropriate solvent.

Biological Activity

Shortsummary

GSK3β inhibitor, ATP-competitive and selective

IC₅₀ & Target

104 +/- 27 nM (GSK-3)

Cell Viability Assay

In Vitro

Cell Line:	3T3 fibroblasts were engineered to stably express four-repeat tau protein
Preparation method:	The solubility of this compound in DMSO is >15.4 mg/mL. General tips for obtaining a higher concentration: Please warm the tube at 37°C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

	Reacting conditions:	100 nM to 50 μ M for 24 h
	Applications:	AR-A014418 could inhibit the tau phosphorylation at a GSK3-specific site in cells that were stably expressing human four-repeat tau protein. AR-A014418 could also protect N2A neuroblastoma cells against cell death, which was mediated through inhibition of the phosphatidylinositol 3-kinase/protein kinase B survival pathway.
In Vivo	Animal experiment	
	Animal models:	Male Sprague–Dawley rats
	Dosage form:	30 μ mol/kg, i.p.
	Applications:	The subacute intraperitoneal injections of AR-A014418 reduced immobility time in rats exposed to the forced swim test, a well-established model for antidepressant efficacy. In addition, the specificity of this effect was supported by the finding that AR-A014418 could decrease both spontaneous and amphetamine-induced activity.
	Other notes:	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

Product Citations

- Chen YJ, Huang CH, et al. "The suppressive effect of arsenic trioxide on TET2-FOXP3-Lyn-Akt axis-modulated MCL1 expression induces apoptosis in human leukemia cells." *Toxicol Appl Pharmacol.* 2018 Nov 1;358:43-55.PMID:30213730
- Lee YC, Chen YJ, et al. "Amsacrine-induced apoptosis of human leukemia U937 cells is mediated by the inhibition of AKT- and ERK-induced stabilization of MCL1. Apoptosis." 2016 Oct 19.PMID:27757735

See more customer validations on www.apexbt.com.

References

- [1] Bhat R, Xue Y, Berg S, Hellberg S, Orm M, Nilsson Y, Radester AC, Jerning E, Markgren PO, Borgegrd T, Nyf M, Giménez-Cassina A, Hernández F, Lucas JJ, Díaz-Nido J, Avila J. Structural insights and biological effects of glycogen synthase kinase 3-specific inhibitor AR-A014418. *J Biol Chem.* 2003;278(46):45937-45.
- [2] Gould TD, Einat H, Bhat R, Manji HK. AR-A014418, a selective GSK-3 inhibitor, produces antidepressant-like effects in the forced swim test. *Int J Neuropsychopharmacol.* 2004;7(4):387-90.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage

temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.



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