Small Molecules

Tivantinib

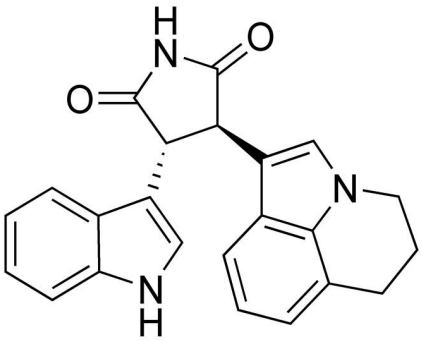
HGF pathway inhibitor; Inhibits MET

Catalog #	73482	1 mg
	73484	10 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

Tivantinib is a staurosporine derivative which binds to inactive, dephosphorylated c-MET receptor tyrosine kinase, in a manner that is not competitive with ATP (Munshi et al.; Eathiraj et al.). It is selective for c-MET (Ki ≅ 355 nM) in a screen of 230 kinases (Munshi et al.). It also shows cytotoxic activity which is distinct from its inhibition of c-MET (Basilico et al.; Katayama et al.). It has also been shown to bind directly to the colchicine binding pocket of tubulin, thereby reducing tubulin polymerization (Aoyama et al.).

Molecular Name:	Tivantinib
Alternative Names:	ARQ 197
CAS Number:	905854-02-6
Chemical Formula:	$C_{23}H_{19}N_3O_2$
Molecular Weight:	369.4 g/mol
Purity:	≥ 98%
Chemical Name:	(3R,4R)-3-(5,6-dihydro-4H-pyrrolo[3,2,1-ij]quinolin-1-yl)-4-(1H-indol-3-yl)-2,5-pyrrolidinedione
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:	· DMSO ≤ 50 mM · Absolute ethanol ≤ 13 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 271 µL 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

CANCER RESEARCH
· Induces apoptosis of human myeloma CD138+ plasma cells in vitro, and demonstrates efficacy in a mouse xenograft model of myeloma (Zaman et al.).
· Inhibits metastatic growth of breast cancer cells in bone and reduces tumor-induced osteolysis, in a mouse xenograft model (Previdi et al.).
· Perturbs microtubule dynamics, induces G2/M arrest, and promotes apoptosis independently of c-MET inhibition in a variety of cancer cell lines (Basilico et al.).

References

Aoyama A et al. (2014) Tivantinib (ARQ 197) exhibits antitumor activity by directly interacting with tubulin and overcomes ABC transporter-mediated drug resistance. Mol Cancer Ther 13(12): 2978–90.
Basilico C et al. (2013) Tivantinib (ARQ197) displays cytotoxic activity that is independent of its ability to bind MET. Clin Cancer Res 19(9): 2381–92.
Eathiraj S et al. (2011) Discovery of a novel mode of protein kinase inhibition characterized by the mechanism of inhibition of human mesenchymal-epithelial transition factor (c-Met) protein autophosphorylation by ARQ 197. J Biol Chem 286(23): 20666–76.
Katayama R et al. (2013) Cytotoxic activity of tivantinib (ARQ 197) is not due solely to c-MET inhibition. Cancer Res 73(10): 3087–96.
Munshi N et al. (2010) ARQ 197, a novel and selective inhibitor of the human c-Met receptor tyrosine kinase with antitumor activity. Mol Cancer Ther 9(6): 1544–53.
Previdi S et al. (2012) Breast cancer-derived bone metastasis can be effectively reduced through specific c-MET inhibitor tivantinib (ARQ 197) and shRNA c-MET knockdown. Mol Cancer Ther 11(1): 214–23.
Zaman S et al. (2015) Targeting the pro-survival protein MET with tivantinib (ARQ 197) inhibits growth of multiple myeloma cells. Neoplasia 17(3): 289–300.

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.

STEMCELL TECHNOLOGIES INC.'S QUALITY MANAGEMENT SYSTEM IS CERTIFIED TO ISO 13485. PRODUCTS ARE FOR RESEARCH USE ONLY AND NOT INTENDED FOR HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USES UNLESS OTHERWISE STATED.

Copyright © 2017 by STEMCELL Technologies Inc. All rights reserved including graphics and images. STEMCELL Technologies & Design, STEMCELL Shield Design, and Scientists Helping Scientists are trademarks of STEMCELL Technologies Canada Inc. All other trademarks are the property of their respective holders. While STEMCELL has made all reasonable efforts to ensure that the information provided by STEMCELL and its suppliers is correct, it makes no warranties or representations as to the accuracy or completeness of such information.