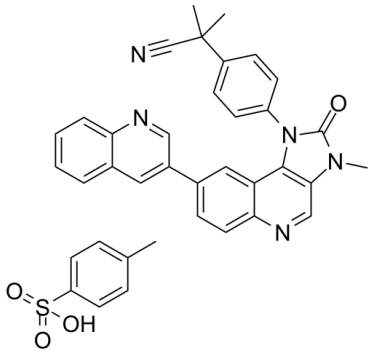
Data Sheet

Product Name:	Dactolisib (Tosylate)
Cat. No.:	CS-0711
CAS No.:	1028385-32-1
Molecular Formula:	C37H31N5O4S
Molecular Weight:	641.74
Target:	Autophagy; mTOR; PI3K
Pathway:	Autophagy; PI3K/Akt/mTOR
Solubility:	H2O : < 0.1 mg/mL (insoluble); DMSO : 34 mg/mL (52.98 mM; Need ultrasonic and warming)



BIOLOGICAL ACTIVITY:

Dactolisib Tosylate (BEZ235 Tosylate) is a dual **PI3K** and **mTOR** kinase inhibitor with **IC_{50}** values of 4, 75, 7, 5 nM for PI3Kα, β, γ, δ, respectively. Dactolisib Tosylate (BEZ235 Tosylate) inhibits **mTORC1** and **mTORC2**. IC50 & Target: IC50: 4nM (PI3Kα), 75 nM (PI3Kβ), 7 nM (PI3Kγ), 5 nM (PI3Kδ)[1]

mTORC1, mTORC2[1] **In Vitro:** Dactolisib (BEZ235) is an imidazo[4,5-c]quinoline derivative that inhibits PI3K and mTOR kinase activity by binding to the ATP-binding cleft of these enzymes. The IC_{50}s for PI3Kα, β, γ, δ are 4, 75, 7, 5 nM, respectively. It is also found to be as active against the mutant $PI3K\alpha^{E545K}$ or $PI3K\alpha^{H1047R}$ with IC_{50}s of 5.7 and 4.6 nM, respectively. In human tumor cell lines, it is able to effectively and specifically block the dysfunctional activation of the PI3K pathway, inducing G1 arrest. PTEN-null cell lines PC3M and U87MG shows a dose-dependent reduction in cell proliferation when treated with increasing concentrations of Dactolisib (BEZ235), with an average GI_{50} of 10 to 12 nM[1]. **In Vivo:** Dactolisib (BEZ235) is well tolerated, displays disease stasis when administered orally, and enhances the efficacy of other anticancer agents. At a dose of 50 mg/kg, Dactolisib (BEZ235) appears rapidly in plasma with a C_{max} of 1.68 μM at 0.5 h and a C_{24h} of 0.03 μM[1].

PROTOCOL (Extracted from published papers and Only for reference)

Animal Administration: [1]Mice: The NVP-Dactolisib (BEZ235) powder is dissolved in NMP on sonication, and the remaining volume of polyethylene glycol 300 is added to a concentration of 5 mg/mL. The application volume is 10 mL/kg. For analytics, frozen tissues are minced and then homogenized in an equal volume of ice-cold PBS and centrifugation, supernatants are analyzed. Samples are then eluted with a linear gradient of 10% to 90% (v/v) acetonitrile in water containing 0.05% (v/v) trifluoroacetic acid over a period of 20 min at a flow rate of 1 mL/min. The compounds are detected by UV absorbance at 340 nm, and concentrations are determined by the external standard method using peak heights[1].

References:

[1]. Maira SM, et al. Identification and characterization of NVP-BEZ235, a new orally available dual phosphatidylinositol 3-kinase/mammalian target of rapamycin inhibitor with potent in vivo antitumor activity. Mol Cancer Ther, 2008, 7(7), 1851-1863.

CAIndexNames:

Benzeneacetonitrile, 4-[2,3-dihydro-3-methyl-2-oxo-8-(3-quinolinyl)-1H-imidazo[4,5-c]quinolin-1-yl]-α,α-dimethyl-, 4-methylbenzenesulfonate (1:1)

SMILES:

CN(C1=C2C3=CC(C4=CC5=CC=CC=C5N=C4)=CC=C3N=C1)C(N2C6=CC=C(C=C6)C(C)(C#N)C)=O.CC7=CC=C(S(=O)(O)=O)C=C7

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 732-484-9848 Fax: 888-484-5008 E-mail: sales@ChemScene.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA