

# Tivantinib

**Catalog No: tcsc0030**



## Available Sizes

**Size:** 5mg

**Size:** 10mg

**Size:** 50mg

**Size:** 100mg

**Size:** 200mg

**Size:** 500mg



## Specifications

**CAS No:**

905854-02-6

**Formula:**

$C_{23}H_{19}N_3O_2$

**Pathway:**

Protein Tyrosine Kinase/RTK

**Target:**

c-Met/HGFR

**Purity / Grade:**

>98%

**Solubility:**

DMSO :  $\geq 100$  mg/mL (270.69 mM)

**Alternative Names:**

ARQ 197

**Observed Molecular Weight:**

369.42

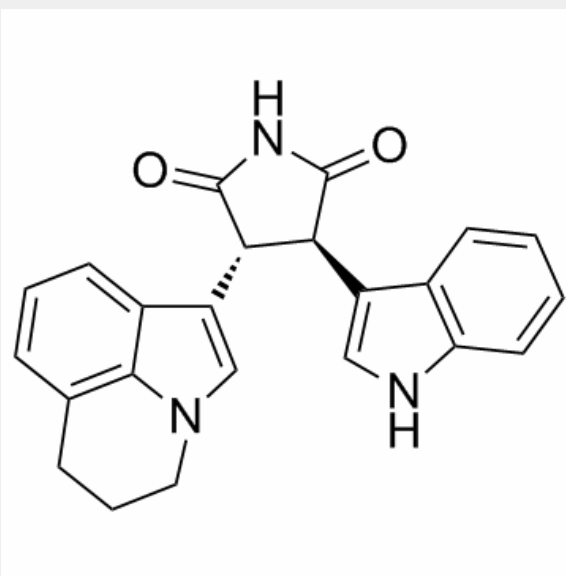
**Product Description**

Tivantinib is a novel and highly selective **c-Met** tyrosine kinase inhibitor with **K<sub>i</sub>** of 355 nM.

IC50 & Target: Ki: 355 nM (c-Met)<sup>[1]</sup>

**In Vitro:** Tivantinib (ARQ 197) selectively inhibits c-Met activity in cell-free and cell-based assays. c-Met-expressing cancer cell lines treated with Tivantinib display either a dose-dependent loss of proliferative capacity or caspase-dependent apoptosis that positively correlates with either ligand-dependent c-Met activity or constitutively active c-Met. To examine the biochemical mode of inhibition of Tivantinib, kinetic analyses are done using recombinant human c-Met in a filtermat-based assay. The K<sub>m</sub> of ATP is 50.5±2.2 μM, which is similar to the K<sub>m</sub> value of ATP. In these kinetic studies, Tivantinib inhibits human recombinant c-Met with a calculated inhibitory constant (K<sub>i</sub>) of ~355 nM. In vitro exposure to Tivantinib inhibits constitutive c-Met phosphorylation in HT29 and MKN-45 cells, and HGF-induced c-Met phosphorylation in MDA-MB-231 and NCI-H441 cells with an IC<sub>50</sub> of 100 to 300 nM<sup>[1]</sup>. Tivantinib is a low-molecular-weight compound, and is the first in class orally available selective inhibitor of c-Met<sup>[2]</sup>.

**In Vivo:** Pharmacodynamically, the phosphorylation of c-Met in human colon xenograft tumors (HT29) is strongly inhibited by Tivantinib (ARQ 197), as assessed by a dramatic reduction of c-Met autophosphorylation 24 hours after a single oral dose of 200 mg/kg of Tivantinib. This same dosage in mice shows that tumor xenografts are exposed to sustained plasma levels of Tivantinib, consistent with the observed pharmacodynamic inhibition of c-Met phosphorylation and inhibition of proliferation of c-Met harboring cancer cell lines. A C<sub>max</sub> of 5.73 μg/mL (13 μM), an area under the concentration-time curve of 12.1 μg/mL h, and a t<sub>1/2</sub> of 2.4 hours are measured. Plasma levels of Tivantinib 10 hours after dosing are determined to be 1.3 μM, >3-fold above the biochemical inhibitory constant of Tivantinib for c-Met<sup>[1]</sup>.



All products are for RESEARCH USE ONLY. Not for diagnostic & therapeutic purposes!