XL388 is supplied as a crystalline solid. A stock solution may be made by dissolving the XL388 in the solvent of choice. XL388 is soluble in the organic solvent DMSO (warmed), at a concentration of approximately 5 mg/ml.

Description

XL388 is an orally bioavailable and ATP-competitive inhibitor of mammalian target of rapamycin (mTOR; IC\textsubscript{50} = 9.9 nM).\textsuperscript{1} It is selective for mTOR over a panel of more than 140 kinases, including various PI3Ks (IC\textsubscript{50} = >3,000 nM). It inhibits mTOR complex 1 (mTORC1) and mTORC2 \textit{in vitro} (IC\textsubscript{50} = 8 and 166 nM, respectively).\textsuperscript{2} XL388 induces cytotoxicity in MG-63, U2OS, and Saos-2 osteosarcoma and 786-0 kidney cancer cells and increases apoptosis in 786-0 and MG-63 cells in a concentration-dependent manner.\textsuperscript{3,4} It also induces cell cycle arrest at the G\textsubscript{1} phase and increases autophagy in MG-63 cells.\textsuperscript{3} XL388 (50 and 100 mg/kg) reduces tumor growth in an MCF-7 breast cancer mouse xenograft model and inhibits phosphorylation of the mTORC1 and mTORC2 substrates p70S6K, S6, 4E-BP1, and Akt in MCF-7 and PC-3 xenograft tumors when administered at a dose of 100 mg/kg.\textsuperscript{1} XL388 (20 mg/kg) also reduces tumor growth in U2OS and 786-0 mouse xenograft models.\textsuperscript{3,4}

References