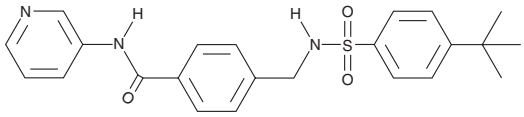
PRODUCT INFORMATION

STF-31

Item No. 11173

CAS Registry No.: 724741-75-7
Formal Name: 4-[[[[4-(1,1-dimethylethyl)phenyl]sulfonyl]amino]methyl]-N-3-pyridinyl-benzamide
MF: $C_{23}H_{25}N_3O_3S$
FW: 423.5
Purity: ≥98%
UV/Vis.: λ_{max}: 231, 264 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

STF-31 is supplied as a crystalline solid. A stock solution may be made by dissolving the STF-31 in the solvent of choice, which should be purged with an inert gas. STF-31 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of STF-31 in these solvents is approximately 1, 20, and 25 mg/ml, respectively.

STF-31 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, STF-31 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. STF-31 has a solubility of approximately 0.2 mg/ml in a 1:5 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Glucose transporter 1 (Glut1) is an inducible carrier of pentoses and hexoses, including glucose. STF-31 is an inhibitor of Glut1 (IC_{50} = ~1 µM) that blocks glucose uptake.[1] It induces necrosis in cancer cells that lack the von Hippel-Lindau tumor suppressor gene, which overexpress Glut1.[1] Although STF-31 binds Glut1, suggesting a direct effect, STF-31 also inhibits nicotinamide phosphoribosyltransferase, an enzyme that induces Glut1 expression.[1-3] STF-31 is also toxic to human pluripotent stem cells (hPSCs) and can be used to selectively eliminate hPSCs from mixed cultures.[4]

References

1. Chan, D.A., Sutphin, P.D., Nguyen, P., *et al.* Targeting GLUT1 and the Warburg effect in renal cell carcinoma by chemical synthetic lethality. *Sci. Transl. Med.* **3(94)**, 1-9 (2011).
2. Adams, D.J., Ito, D., Rees, M.G., *et al.* NAMPT is the cellular target of STF-31-like small-molecule probes. *ACS Chem. Biol.* **9(10)**, 2247-2254 (2014).
3. Garten, A., Petzold, S., Körner, A., *et al.* Nampt: Linking NAD biology, metabolism, and cancer. *Trends Endocrinol. Metab.* **20(3)**, 130-138 (2009).
4. Boheler, K.R., Bhattacharya, S., Kropp, E.M., *et al.* A human pluripotent stem cell surface N-glycoproteome resource reveals markers, extracellular epitopes, and drug targets. *Stem Cell Reports* **3**, 185-203 (2014).

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