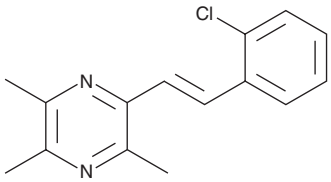
PRODUCT INFORMATION

(E)-2-(2-Chlorostyryl)-3,5,6-trimethylpyrazine

Item No. 9003202

CAS Registry No.: 1000672-89-8
Formal Name: 2-[(1E)-2-(2-chlorophenyl)ethenyl]-3,5,6-trimethyl-pyrazine
Synonym: CSTMP
MF: $C_{15}H_{15}ClN_2$
FW: 258.8
Purity: ≥98%
UV/Vis.: λ_{max}: 238, 278, 340 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

(E)-2-(2-Chlorostyryl)-3,5,6-trimethylpyrazine (CSTMP) is supplied as a crystalline solid. A stock solution may be made by dissolving the CSTMP in the solvent of choice. CSTMP is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of CSTMP in ethanol and DMSO is approximately 2 mg/ml and approximately 20 mg/ml in DMF.

CSTMP is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, CSTMP should first be dissolved in DMF and then diluted with the aqueous buffer of choice. CSTMP has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

CSTMP is a stilbene derivative with antioxidant and anticancer activities.[1-3] It stimulates proliferation of hydrogen peroxide-damaged ECV-304 cells (EC_{50} = 24.9 nM).[1] CSTMP reduces hydrogen peroxide-induced release of lactate dehydrogenase (LDH) in and increases viability of human umbilical vein endothelial cells (HUVECs) in a concentration-dependent manner *via* inhibition of apoptosis.[2] It reverses hydrogen peroxide-induced release of malondialdehyde (MDA) and decreases in superoxide dismutase (SOD) and glutathione peroxidase (GSH-Px) activities as well as increases constitutive nitric oxide synthase (cNOS) activity and nitric oxide (NO) production in HUVECs. CSTMP also induces cell death of A549 non-small cell lung cancer (NSCLC) cells in an IRE1α-dependent manner through induction of IRE1α-TRAF2-ASK1 complex-mediated endoplasmic reticulum (ER) stress and mitochondrial apoptosis.[3]

References

1. Deng, L., Guo, X., Zhai, L., *et al.* Ligustrazine derivatives. Part 4: Design, synthesis, and biological evaluation of novel ligustrazine-based stilbene derivatives as potential cardiovascular agents. *Chem. Biol. Drug Des.* **79(5)**, 731-739 (2012).
2. Zhai, L., Zhang, P., Sun, R.-Y., *et al.* Cytoprotective effects of CSTMP, a novel stilbene derivative, against H_2O_2-induced oxidative stress in human endothelial cells. *Pharmacol. Rep.* **63(6)**, 1469-1480 (2011).
3. Zhang, J., Liang, Y., Lin, Y., *et al.* IRE1α-TRAF2-ASK1 pathway is involved in CSTMP-induced apoptosis and ER stress in human non-small cell lung cancer A549 cells. *Biomed. Pharmacother.* **82**, 281-289 (2016).

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