



LKT Laboratories, Inc.

2,3,5,6-Tetramethylpyrazine

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Product Information

Product ID T1778

CAS No. 1124-11-4

Chemical Name

Synonym Tetramethylpyrazine, Ligustrazine

Formula $C_8H_{12}N_2$

Formula Wt. 136.20

Melting Point

Purity $\geq 98\%$

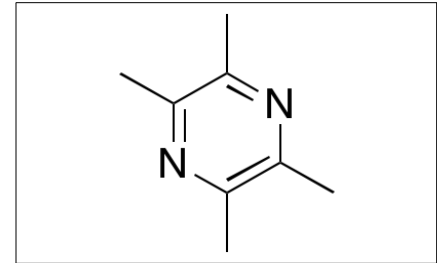
Solubility

Store Temp Ambient

Ship Temp Ambient

Description

Tetramethylpyrazine is a dihydropyrazine found in *Ligusticum walliichi* that exhibits neuromodulatory, antioxidative, cognition enhancing, nephroprotective, antifibrotic, anti-inflammatory, and anticancer chemotherapeutic activities. This compound also inhibits PDE10A2 and acts as an antagonist at adenosine 2A and 2B receptors. In vitro, tetramethylpyrazine promotes neural progenitor cell migration and increases PI3K, PKC, and ERK signaling. Tetramethylpyrazine also induces neuroblastoma differentiation by targeting Topoisomerase II β (topoII β). In animal models of chronic alcoholic encephalopathy, Tetramethylpyrazine improves learning and memory. Additionally, this compound inhibits arsenic-induced production of ROS and prevents apoptosis and mitochondrial dysfunction in kidney cells. Tetramethylpyrazine also ameliorates oxidative injury induced by methotrexate. In vitro, this compound inhibits proliferation of hepatic stellate cells. In animal models of hepatocellular carcinoma, tetramethylpyrazine inhibits tumor development and growth and induces cell cycle arrest and apoptosis.



Product ID	Size
T1778	1 g
T1778	25 g
T1778	100 g
T1778	500 g

References

- Yan YX, Zhao JX, Han S, et al. Tetramethylpyrazine induces SH-SY5Y cell differentiation toward the neuronal phenotype through activation of the PI3K/Akt/Sp1/TopoII β pathway. *Eur J Cell Biol.* 2015 Dec;94(12):626-41. PMID: 26518113.
- Kong X, Zhong M, Su X, et al. Tetramethylpyrazine Promotes Migration of Neural Precursor Cells via Activating the Phosphatidylinositol 3-Kinase Pathway. *Mol Neurobiol.* 2015 Nov 28. [Epub ahead of print]. PMID: 26614511.
- Zhang B, Lu C, Bai M, et al. Tetramethylpyrazine identified by network pharmacology approaches ameliorates methotrexate-induced oxidative organ injury. *J Ethnopharmacol.* 2015 Oct 1. [Epub ahead of print]. PMID: 26435225.
- Li H, Yang X, Shi W, et al. Protective Effects of Tetramethylpyrazine on Cerebrovascular Regulations in Rats with Chronic Alcoholic Encephalopathy. *Biomed Environ Sci.* 2015 Sep;28(9):691-5. PMID: 26464259.
- Gong X, Ivanov VN, Hei TK. 2,3,5,6-Tetramethylpyrazine (TMP) down-regulated arsenic-induced heme oxygenase -1 and ARS2 expression by inhibiting Nrf2, NF- κ B, AP-1 and MAPK pathways in human proximal tubular cells. *Arch Toxicol.* 2015 Sep 24. [Epub ahead of print]. PMID: 26404762.
- Hu J, Cao G, Wu X, et al. Tetramethylpyrazine Inhibits Activation of Hepatic Stellate Cells through Hedgehog Signaling Pathways In Vitro. *Biomed Res Int.* 2015;2015:603067. PMID: 26380286.

Caution: This product is intended for laboratory and research use only. It is not for human or drug use.