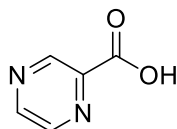


Pyrazine carboxylic acid

Code No.: **BIA-P2421**

Pack sizes: **25 mg, 100 mg**



Synonyms : Pyrazinoic acid, 1,4-Diazinecarboxylic acid, 2-Carboxypyrazine, 2-Pyrazinoic acid, NSC 13146, NSC 27192, Pyrazinic acid

Specifications

CAS #	: 98-97-5
Molecular Formula	: C₅H₄N₂O₂
Molecular Weight	: 124.1
Source	: Synthetic
Appearance	: White solid
Purity	: >95% by HPLC
Long Term Storage	: -20°C
Solubility	: Soluble in methanol or DMSO

Application Notes

Pyrazine carboxylic acid (pyrazinoic acid) is the active moiety of the antitubercular drug, pyrazinamide. Susceptible strains of *Mycobacterium tuberculosis* convert pyrazinamide to pyrazine carboxylic acid via nicotinamidase/pyrazinamidase. Pyrazine carboxylic acid inhibits fatty acid synthase type I in replicating tubercle bacilli, reaching 60% inhibition of fatty acid synthesis at pH 5.5. Pyrazine carboxylic acid targets the ribosomal protein S1 (RpsA) involved in protein translation and the ribosome-sparing process of trans-translation. Pyrazine carboxylic acid depletes cellular ATP reserves, inhibits renal tubular secretion of uric acid and is used as a chemical scaffold for new anti-TB drugs.

References

1. Pyrazinamide and pyrazinoic acid activity against tubercle bacilli in cultured human macrophages and in the BACTEC system. Salfinger M. et al. *J Infect Dis.* 1990, 162, 201.
2. Pyrazinoic acid and its n-propyl ester inhibit fatty acid synthase type I in replicating tubercle bacilli. Zimhony O. et al. *Antimicrob Agent Chemother.* 2007, 51, 752.
3. Pyrazinamide inhibits trans-translation in *Mycobacterium tuberculosis*. Shi W. et al. *Science* 2011, 333, 1630.
4. Pyrazinoic acid decreases the proton motive force, respiratory ATP synthesis activity, and cellular ATP levels. Lu P. et al. *Antimicrob Agent Chemother.* 2011, 55, 5354.
5. Identification and functional characterization of uric acid transporter Urat1 (Slc22a12) in rats. Sato M. et al. *Biochim Biophys Acta* 2011, 1808, 1441.