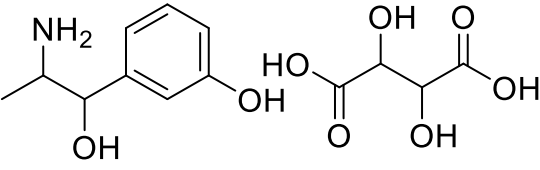


Product data sheet



| | |
|---|--|
| MedKoo Cat#: 318195 Name: Metaraminol Bitartrate CAS#: 33402-03-8 (tartrate) Chemical Formula: C ₁₃ H ₁₉ NO ₈ Molecular Weight: 317.29 |  |
| Product supplied as: | Powder |
| Purity (by HPLC): | ≥ 98% |
| Shipping conditions | Ambient temperature |
| Storage conditions: | Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks. |

1. Product description:

Metaraminol bitartrate is a sympathomimetic agent that acts predominantly at alpha-1 adrenergic receptors. It has been used primarily as a vasoconstrictor in the treatment of hypotension.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

| Solvent | Max Conc. mg/mL | Max Conc. mM |
|---------|-----------------|--------------|
| DMSO | TBD | TBD |

4. Stock solution preparation table:

| Concentration / Solvent Volume / Mass | 1 mg | 5 mg | 10 mg |
|---------------------------------------|---------|----------|----------|
| 1 mM | 3.15 mL | 15.76 mL | 31.52 mL |
| 5 mM | 0.63 mL | 3.15 mL | 6.30 mL |
| 10 mM | 0.32 mL | 1.58 mL | 3.15 mL |
| 50 mM | 0.06 mL | 0.32 mL | 0.63 mL |

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Alabaster VA, Bakhle YS. The removal of noradrenaline in the pulmonary circulation of rat isolated lungs. *Br J Pharmacol.* 1973 Feb;47(2):325-31. doi: 10.1111/j.1476-5381.1973.tb08330.x. PMID: 4722046; PMCID: PMC1776564.
2. Gulati OD, Parikh HM, Ringe SY, Sherlekar ML. An investigation of alpha-methyl amino-acids and their derivatives on isolated tissue preparations. *Br J Pharmacol.* 1970 Dec;40(4):689-701. doi: 10.1111/j.1476-5381.1970.tb10647.x. PMID: 5495174; PMCID: PMC1702915.

In vivo study

1. Iwabuchi Y, Aoki C, Masuhara T. Effects of metaraminol on the secretion of fluid and glycoproteins from the rat submandibular gland. *Jpn J Pharmacol.* 1989 Apr;49(4):491-500. doi: 10.1254/jjp.49.491. PMID: 2724688.
2. Johnson GE, Pugsley TA. Effects of chronic metaraminol treatment on the sympathetic activity of intact and adrenal demedullated rats kept in warm or cold environments. *Br J Pharmacol.* 1970 Nov;40(3):418-25. doi: 10.1111/j.1476-5381.1970.tb10623.x. PMID: 5497793; PMCID: PMC1703157.

7. Bioactivity

Biological target:

Metaraminol is an adrenergic agonist that acts predominantly at alpha adrenergic receptors and also stimulates the release of norepinephrine.

Product data sheet



In vitro activity

The ability of α -methyl amino-acids and their corresponding amines to restore the sympathomimetic actions of tyramine, and the uptake of the aminoacids and the amines, were studied in isolated tissue preparations obtained from reserpine pretreated animals. Lower concentrations of metaraminol restored the responses to tyramine (Fig. 1) while higher concentrations (10, μ g/ml and 30 μ g/ml for 30 min; nine trials) failed to restore the responses to the same doses of tyramine. This appeared surprising and, therefore, the influence of metaraminol in modifying the responses to tyramine and noradrenaline was studied in nine preparations obtained from normal rats. Higher concentrations of metaraminol completely blocked the relaxant effect of tyramine but the response to noradrenaline was not affected. Lower concentration of metaraminol, however, failed to modify responses to tyramine or noradrenaline. It is important to note (Fig. 2) that following metaraminol and α -methylnoradrenaline responses to the lowest dose of tyramine were not only restored but were highly potentiated and the restored responses were now significantly ($P < 0.05$) greater than normal responses. Metaraminol could restore the responses to tyramine of isolated rat ileum, perfused rabbit ear and heart preparations. Thus, like noradrenaline, metaraminol too can be taken up and released by tissues of reserpine treated animals.

Reference Br J Pharmacol. 1970 Dec;40(4):689-701. <https://pubmed.ncbi.nlm.nih.gov/5495174/>

In vivo activity

Rats were placed at 27°C or 40°C and given metaraminol ((10 mg/kg/day) in their drinking water for 8 weeks. One experiment was run using adrenal demedullated rats. These animals were treated with metaraminol, as mentioned above, and kept at 40°C for 4 weeks. Body temperature and metabolic rate were determined at selected intervals. Urine was collected on day 7 of each week and analysed for adrenaline, noradrenaline, metanephrine, normetanephrine and 3-methoxy-4-hydroxyphenylglycol (MHPG). All animals survived the metaraminol treatment and no change in metabolic rate or body temperature was seen. Metaraminol depressed the growth rate of the rats. Metaraminol caused a fall in tissue noradrenaline concentrations, with only negligible quantities being found in brain, heart, lung, liver, kidney and spleen. The increase in MHPG excretion, seen during metaraminol treatment, suggests an increased rate of noradrenaline turnover. Daily metaraminol treatment for several weeks increased the catecholamine content of the intact adrenals and the adrenaline levels of the previously demedullated adrenal glands. In the present study, chronic daily treatment with metaraminol resulted in high tissue levels of the drug and virtual depletion of noradrenaline.

Reference: Br J Pharmacol. 1970 Nov;40(3):418-25. <https://pubmed.ncbi.nlm.nih.gov/5497793/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.