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# Produktinformation

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## Zuschläge

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- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand


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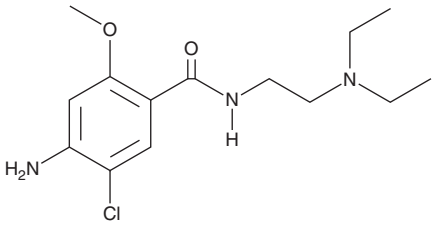
# PRODUCT INFORMATION

## Metoclopramide

*Item No. 39844*

| | |
|---|---|
| **CAS Registry No.:** | 364-62-5 |
| **Formal Name:** | 4-amino-5-chloro-N-[2-(diethylamino) ethyl]-2-methoxy-benzamide |
| **MF:** | $C_{14}H_{22}ClN_3O_2$ |
| **FW:** | 299.8 |
| **Purity:** | ≥98% |
| **Supplied as:** | A 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

Metoclopramide is supplied as a solid. A stock solution may be made by dissolving the metoclopramide in the solvent of choice, which should be purged with an inert gas. Metoclopramide is soluble in the organic solvent DMSO. Metoclopramide is slightly soluble in acetonitrile.

Metoclopramide is slightly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

### Description

Metoclopramide is a dual antagonist of the serotonin (5-HT) receptor subtype 5-$HT_3$ and dopamine $D_2$ receptor ($IC_{50}$s = 308 and 483 nM, respectively).[1] It also reversibly inhibits acetylcholinesterase (AChE) isolated from human postmortem caudate nucleus ($K_i$s = 9.3 and 82 µM for competitive and non-competitive inhibition, respectively).[2] Oral administration of metoclopramide inhibits emesis induced by the DNA cross-linking agent cisplatin (Item No. 13119) in ferrets ($ED_{50}$ = 6,170 µg/kg) and the dopamine receptor agonist apomorphine in dogs ($ED_{50}$ = 0.45 mg/kg).[1,3] Metoclopramide also inhibits apomorphine-induced climbing and stereotypy in mice ($ED_{50}$s = 2.2 and 6.5 mg/kg, respectively).[4] Formulations containing metoclopramide have been used in the treatment of gastroesophageal reflux disease (GERD) and diabetic gastroparesis.

### References


1. Hirokawa, Y., Harada, H., Yoshikawa, T., *et al.* Synthesis and structure-activity relationships of 4-amino-5-chloro-N-(1,4-dialkylhexahydro-1,4-diazepin-6-yl)-2-methoxybenzamide derivatives, novel and potent serotonin 5-$HT_3$ and dopamine $D_2$ receptors dual antagonist. *Chem. Pharm. Bull. (Tokyo)* **50(7)**, 941-959 (2002).
2. Chemnitius, J.M., Haselmeyer, K.H., Gonska, B.D., *et al.* Indirect parasympathomimetic activity of metoclopramide: Reversible inhibition of cholinesterases from human central nervous system and blood. *Pharmacol. Res.* **34(1-2)**, 65-72 (1996).
3. Youssefyeh, R.D., Campbell, H.F., Klein, S., *et al.* Development of high-affinity 5-$HT_3$ receptor antagonists. 1. Initial structure-activity relationship of novel benzamides. *J. Med. Chem.* **35(5)**, 895-903 (1992).
4. Altar, C.A., Boyar, W.C., Wasley, A., *et al.* Dopamine neurochemical profile of atypical antipsychotics resembles that of D-1 antagonists. *Naunyn Schmiedebergs Arch. Pharmacol.* **338(2)**, 162-168 (1988).





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