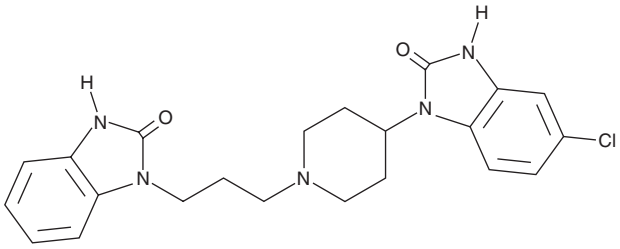
PRODUCT INFORMATION

Domperidone

Item No. 18875

CAS Registry No.:	57808-66-9
Formal Name:	5-chloro-1-[1-[3-(2,3-dihydro-2-oxo-1H-benzimidazol-1-yl)propyl]-4-piperidinyl]-1,3-dihydro-2H-benzimidazol-2-one
Synonyms:	KW 5338, NSC 299589
MF:	$C_{22}H_{24}ClN_5O_2$
FW:	425.9
Purity:	≥98%
UV/Vis.:	λ_{max}: 209, 287 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

Domperidone is supplied as a crystalline solid. A stock solution may be made by dissolving the domperidone in the solvent of choice, which should be purged with an inert gas. Domperidone is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of domperidone in these solvents is approximately 10 mg/ml.

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

Description

Domperidone is a dopamine D_2 receptor antagonist (K_i = 0.3 nM in CHO cells expressing the rat receptor).[1,2] It is selective for dopamine D_2 over D_3 receptors (K_i = 9.5 nM).[1] Domperidone (0.5-5 µg/kg) inhibits dipropyl dopamine-induced femoral vasodilation in dogs, indicating dopamine D_2 receptor antagonist activity, and has no effect on dopamine-induced vasodilation in the renal vascular bed in dogs when administered at doses up to 5 mg/kg, indicating a lack of activity at dopamine D_1 receptors.[2] Domperidone (0.5 mg/kg) prevents dopamine-induced decreases in gastric antral motility induced by pentagastrin (Item No. 28546) in dogs.[3] It inhibits apomorphine-induced emesis in dogs (ED_{50} = 0.031 mg/kg, p.o.).[4] Domperidone also increases serum levels of prolactin in male rats.[5]

References

1. Sokoloff, P., Giros, B., Martres, M.P., et al. Molecular cloning and characterization of a novel dopamine receptor (D_3) as a target for neuroleptics. *Nature* **137(6289)**, 146-151 (1990).
2. Kohli, J.D., Glock, D., and Goldberg, L.I. Selective DA_2 versus DA_1 antagonist activity of domperidone in the periphery. *Eur. J. Pharmacol.* **89(1-2)**, 137-141 (1983).
3. Bech, K., Hovendal, C.P., and Andersen, D. Effect of dopamine on pentagastrin-stimulated gastric antral motility in dogs with gastric fistula. *Scand. J. Gastroenterol.* **17(1)**, 103-107 (1982).
4. Niemegeers, C.J.E. Antiemetic specificity of dopamine antagonists. *Psychopharmacology (Berl).* **78(3)**, 210-213 (1982).
5. Meltzer, H.Y., Simonovic, M., and So, R. Effects of a series of substituted benzamides on rat prolactin secretion and ^{3}H-spiperone binding to bovine anterior pituitary membranes. *Life Sci.* **32(25)**, 2877-2886 (1983).

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