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PRODUCT INFORMATION



Calcitonin (human) (trifluoroacetate salt)

Item No. 24409

Formal Name: L-cysteinylglycyl-L-asparaginyl-L-leucyl-L-seryl-L-threonyl-L-cysteinyll-L-methionyl-L-leucylglycyl-L-threonyl-L-tyrosyl-L-threonyl-L-glutaminyl-L- α -aspartyl-L-phenylalanyl-L-asparaginyl-L-lysyl-L-phenylalanyl-L-histidyl-L-threonyl-L-phenylalanyl-L-prolyl-L-glutaminyl-L-threonyl-L-alanyl-L-isoleucylglycyl-L-valylglycyl-L-alanyl-L-prolinamide, cyclic (1 \rightarrow 7)-disulfide, trifluoroacetate salt

Synonyms: Ba 47175, Calcitonin (1-32) (human), hCT, Thyrocalcitonin (human)

MF: C₁₅₁H₂₂₆N₄₀O₄₅S₃ • XCF₃COOH

FW: 3,417.9

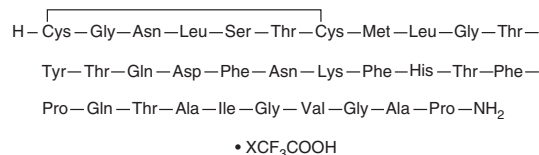
Purity: \geq 95%

Supplied as: A lyophilized powder

Storage: -20°C

Stability: \geq 2 years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.



Laboratory Procedures

Calcitonin (human) (trifluoroacetate salt) is supplied as a lyophilized powder. A stock solution may be made by dissolving the calcitonin (human) (trifluoroacetate salt) in water. The solubility of calcitonin (human) (trifluoroacetate salt) in water is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Calcitonin is a peptide hormone that lowers blood calcium levels and inhibits bone resorption.¹ It belongs to the calcitonin family of peptides, which also includes amylin (Item No. 24274), calcitonin gene-related peptide (Item No. 24405), and adrenomedullin.² The binding of human calcitonin to the calcitonin receptor (CTR) is modulated by receptor activity-modifying proteins (RAMPs).³ Calcitonin binds to CTR2 with IC₅₀ values of 8.5, 6.2, 10.7, and 5.8 nM alone and with RAMP1, 2, or 3, respectively. It induces cAMP accumulation in rabbit aortic endothelial cells (RAECs) expressing CTR2 alone, or co-transfected with RAMP1, 2, or 3 (EC₅₀s = 0.07, 0.08, 0.05, and 0.99 nM, respectively). In a bone resorption assay, human calcitonin inhibits pit formation in dentine by human giant cell tumor (GCT) cells, rabbit osteoclasts, and mouse osteoclasts (ID₅₀s = 0.19, 0.032, and 0.21 nM, respectively).⁴

References

1. Foster, G.V. Calcitonin. A review of experimental and clinical investigations. *Postgrad. Med. J.* **44(511)**, 411-422 (1968).
2. Wimalawansa, S.J. Amylin, calcitonin gene-related peptide, calcitonin, and adrenomedullin: A peptide superfamily. *Crit. Rev. Neurobiol.* **11(2-3)**, 167-239 (1997).
3. Muff, R., Bühlmann, N., Fischer, J.A., et al. An amylin receptor is revealed following co-transfection of a calcitonin receptor with receptor activity modifying proteins-1 or -3. *Endocrinology* **140(6)**, 2924-2927 (1999).
4. Lida, S., Kakudo, S., Mori, Y., et al. Human calcitonin has the same inhibitory effect on osteoclastic bone resorption by human giant cell tumor cells as salmon calcitonin. *Calcif. Tissue Int.* **59(2)**, 100-104 (1996).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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