
Product Data Sheet

Product Name: b-Casomorphin (1-3)

Cat. No.: GP10125

Chemical Properties

Cas. No. 72122-59-9

Chemical Name 2-[[1-[2-amino-3-(4-hydroxyphenyl)propanoyl]pyrrolidine-2-carbonyl]amino]-3-phenylpropanoic acid

SMILES C1CC(N(C1)C(=O)C(CC2=CC=C(C=C2)O)N)C(=O)NC(CC3=CC=CC=C3)C(=O)OFormula $C_{23}H_{27}N_3O_5$

M.Wt 425.48

Solubility $\geq 42.5\text{mg/mL}$ in DMSOStorage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure **Background**

b-Casomorphin (1-3), ($C_{23}H_{27}N_3O_5$), a tri-peptide with the sequence H₂N-Tyr-Pro-Phe-OH, MW= 425.48. Casomorphins are peptides derived from the digestion of milk protein casein. The distinguishing characteristic of casomorphins is that they have an opioid effect. The most important casomorphins from bovine milk are those released from the digestion of β -casein into β -casomorphins, sometimes denoted as BCM followed by a numeral indicating the number of amino acids in the sequence. Each variant fits into one of two main categories known as A1 and A2. In cattle, A1-type β -caseins have the amino acid histidine at position 67, whereas the A2-type β -caseins have the amino acid proline at position 67. Laboratory experiments show that the casomorphin known as BCM7 is released only from the A1-type β -caseins[1]. The potential release of BCM7 is about 0.4 grams per litre of milk (assuming as above that there are 12g of β -casein per litre). Human digestion may break down casomorphins into inactive dipeptides by the enzyme dipeptidyl peptidase-4[2]. This enzyme is found in the digestive tract and in some endocrine cells. Casein has been documented to break down in the stomach to produce the peptide casomorphin (above stated that "Human digestion may break down

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Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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casomorphins into inactive dipeptides by the enzyme dipeptidyl peptidase-4"), an opioid that acts as a histamine releaser[3].

References:

1. Jinsmaa Y, Yoshikawa M, 1999; "Enzymatic release of neocasomorphin and beta-casomorphin from bovine beta-casein"; Peptides 20:957-962
2. Converse PJ, Hamosh A, McKusick VA(2005). DIPEPTIDYL PEPTIDASE IV; DPP4. Online Mendelian Inheritance in Man.
3. Kurek M, Przybilla B, Hermann K, Ring J (1992). "A naturally occurring opioid peptide from cow's milk, beta-casomorphine-7, is a direct histamine releaser in man". Int Arch Allergy Immunol 97 (2): 115-120.g.

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