Product Information

Chymostatin

Microbial

C7268

Product Description

CAS Number: 9076-44-2

Synonym: *N*-(*N*α-Carbonyl-Cpd-X-Phe-al)-Phe

Synonym Notes:

- Identities of amino acid X:
  - Chymostatin A: X = L-leucine (Leu)
  - Chymostatin B: X = L-valine (Val)
  - Chymostatin C: X = L-isoleucine (Ile)
- Cpd = capreomycidine
- Capreomycidine = [S,S]-α-(2-Iminohexahydro-4-pyrimidyl)glycine)

Molecular Weights of Chymostatin components:

- Chymostatin A: 607.7
- Chymostatin B: 593.7
- Chymostatin C: 607.7

Molecular Formulas of Chymostatin components:

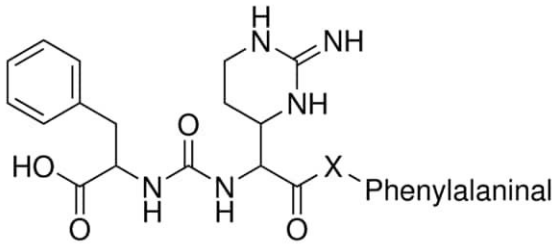
- Chymostatin A: $C_{31}H_{41}O_6N_7$
- Chymostatin B: $C_{30}H_{39}O_6N_7$
- Chymostatin C: $C_{31}H_{41}O_6N_7$

Chymostatin is an enzyme inhibitor that occurs naturally in several actinomycetes species,[1] such as:

- *Streptomyces hygroscopicus* (Strain Number MC521-C8)
- *Streptomyces lavendulae* (Strain Number MC524-C1)

Chymostatin is a mixture of hydrophobic tetrapeptide aldehydes, with 3 principal components,[2] labeled A, B and C,[3] which differ each by one particular amino acid. An approximate chymostatin composition has been reported as follows:[4]

- ~ 80% chymostatin A
- ~ 15% chymostatin B
- ~ 5% chymostatin C



Chymostatin A X = Leu

Chymostatin B X = Val

Chymostatin C X = Ile

Chymostatin is a strong inhibitor of many proteinases, including chymotrypsin, chymotrypsin-like serine proteinases, chymases and lysosomal cysteine proteinases such as cathepsins B, H and L.[5-7] It weakly inhibits human leucocyte elastase.[8] Chymostatin is effective at a final concentration of 6-60 µg/mL (10-100 µM), although the working solution is not stable, as the terminal aldehyde is subject to oxidation.

Several dissertations[9-12] have cited use of product C7268 in their protocols.

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store the lyophilized product at –20 °C.

Solubility

Chymostatin is tested for solubility in glacial acetic acid at 10 mg/mL. One publication cites preparation of chymostatin stock solutions in DMSO, at 5 mg in 250 µL (equivalent to 20 mg/mL).[13] Use of solvents purged of oxygen may mitigate risk of oxidation of the aldehyde group(s) of chymostatin.

Stock solutions of chymostatin can be made in 0.1 M HCl. One publication has reported preparation of 10 mM stock solutions in DMSO, with storage for up to one month at –20 °C.[14] Dilute solutions (10-100 µM) are stable for several hours.[1]

References

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