



## Product Information

### Carboxypeptidase A from bovine pancreas

Product Number **C 0386**  
Storage Temperature cooler

#### Product Description

Enzyme Commission (EC) Number: 3.4.17.1

CAS Number: 11075-17-5

Molecular Weight: 34.3 kDa<sup>1</sup>

pI: 6.0<sup>2</sup>

Extinction Coefficient:  $E^{1\%} = 18.8$  (278 nm,  
10% NaCl)<sup>3</sup>

Synonyms: carboxypolypeptidase, peptidyl-L-amino  
acid hydrolase

This product is supplied as a crystalline suspension in deionized water. The addition of toluene at 5 ml per gallon prevents microbial growth.

Carboxypeptidase A is a protease which will hydrolyze C terminal amino acids, primarily aromatic and aliphatic, from proteins. It has little or no action upon Asp, Glu, Arg, Lys, or Pro residues.<sup>4</sup> It is a metalloenzyme containing 1 mole of zinc per mole of enzyme and consists of a single chain polypeptide.<sup>5</sup> In addition to being able to hydrolyze peptide bonds, carboxypeptidase A also possesses esterase activity.<sup>6</sup>

The following substrates may be utilized with carboxypeptidase A: hippuryl-DL-B-phenyllactate ( $K_m = 0.088$  mM, Product No. H 9755), hippuryl-L-phenylalanine ( $K_m = 1.91$  mM, Product No. H 6875), furylacryloylphenyllactate ( $K_m = 0.132$  mM), and carbobenzoxyglycyl-L-phenylalanine ( $K_m = 5.83$  mM). The pH optimum with hippuryl-L-phenylalanine is 7.5.<sup>7</sup>

Inhibitors of carboxypeptidase A include: phenylacetate, 2-phenylpropionate, 3-phenylbutyrate, D-phenylalanine, D-histidine, hydrocinnamate,

p-nitrophenylacetate, indoleacetate, 2-indolepropionate, 3-indolepropionate, 2-cyclohexylpropionate, and 1,10-phenanthroline.<sup>5,7</sup>

Carboxypeptidase A can be utilized in conjunction with carboxypeptidase B for C-terminal protein sequencing since carboxypeptidase B readily cleaves at arginine and lysine, and the two enzymes have a similar pH optimum.<sup>8</sup>

#### Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

#### Preparation Instructions

This product is soluble in 1 M NaCl (1 mg/ml), yielding a clear, colorless solution.

#### References

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4. *Enzymatic Nomenclature*, Webb, E. C., ed., Academic Press (San Diego, CA: 1992), p. 383.
5. Felber, J. P., et al., The mechanism of inhibition of carboxypeptidase A by 1,10-Phenanthroline. *Biochemistry*, **1**, 231-238 (1962).

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7. Methods of Enzymatic Analysis, Vol. 1, 2nd ed., Bergmyer, H. E., ed., Academic Press (New York, NY: 1974), pp. 436-437.
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