Furin

RR

Catalog #	Size	Concentration	Price	Qty
P8077S	50 units	2,000 units/ml	**$127.00**	1
P8077L	250 units	2,000 units/ml	**$508.00**	1

Categories: Proteases

Applications: *E.coli* Protein Expression, Protein Digestion, Protein Expression Approaches

Product Information | Protocols & Manuals | Other Tools & Resources | Quality & Safety

- Description
- Related Products
- References
- Properties and Usage
- Notes

Description

Furin is a ubiquitous subtilisin-like proprotein convertase. It is the major processing enzyme of the secretory pathway and is localized in the trans-golgi network (1,2). Substrates of Furin include blood clotting factors, serum proteins and growth factor receptors such as the insulin-like growth factor receptor (3). The minimal cleavage site is Arg-X-X-Arg'. However, the enzyme prefers the site Arg-X-(Lys/Arg)-Arg'. An additional arginine at the P6 position appears to enhance cleavage (4). Furin is inhibited by EGTA, α1- Antitrypsin Portland (5) and polyarginine compounds (6).

Product Source
Isolated from Spodoptera frugiperda (Sf9) cells infected with recombinant baculovirus carrying truncated human furin (kindly provided by R. Fuller) (3).

Properties and Usage

Unit Definition
One unit is defined as the amount of Furin that will release 1 pmol of AMC from the fluorogenic peptide BOC-RVRR-AMC (Bachem #I-1645) in one minute (1 pmol of AMC/min) at 30°C.

Unit Assay Conditions: 100 mM HEPES (pH 7.5 @ 25°C), 0.5% Triton X-100, 1 mM $CaCl_2$, 1 mM 2-mercaptoethanol, 100 µM BOC-RVRR-AMC and enzyme in a 100 µl volume at 30°C.

Fusion Protein Digestion: One unit will cut 25 µg test substrate to 95% completion in 6 hours or less, while 0.5 units will cut 25 µg of test substrate to 95% completion in 16 hours or less.

Fusion Protein Digestion Conditions: Furin is added to 25 µg of an MBP fusion protein test substrate, MBP-ΔSal. The reaction is carried out in 25 ul, 100 mM Hepes (pH 7.5 @25°C), 0.5%Triton X-100, 1mM $CaCl_2$, 1mM 2-mercaptoethanol at 25°C

Storage Temperature
-20°C

Molecular Weight
Theoretical: 52.7 kDa

Related Products

Companion Products

- Enterokinase, light chain
- Factor Xa Protease
- Genenase I

Notes

1. Both Furin and *Onchocerca volvulus* Blisterase will cleave peptide substrates with the sequence, Arg-X- (Lys/Arg)-Arg. However, the ability of either enzyme to cleave a particular protein substrate depends on its tertiary structure as well as on the amino acids immediately surrounding the cleavage site (7).

References

1. van den Ouweland, A.M.W. et al. (1990). *Nucl. Acids Res*. 18, 664.
2. Steiner, D.F. (1998). *Curr. Opin. Chem. Biol*. . 2
3. Bravo, D.A. et al. (1994). *J. Biol. Chem*. . 269, 25830-25837.
4. Krysan, D.J. et al. (1999). *J. Biol. Chem*.. 274, 23229-23234.
5. Jean, F. et al. (1998). *Proc. Natl. Acad. Sci. USA*. 95, 7293-7298.
6. Cameron, A. et al. (2000). *J. Biol. chem*. . 275, 36741-36749.
7. Poole, C.B. et al. (2003). *J. Biol. Chem*. . 278, 36183-36190.

Datacards

Datacards

The Product Summary Sheet, or Data Card, includes details for how to use the product, as well as details of its formulation and quality controls. The following file naming structure is used to name the majority of these document files: [Catalog Number]Datasheet-Lot[Lot Number]. For those product lots not listed below, please contact NEB at info@neb.com or fill out the Technical Support Form for appropriate document.

- P8077Datasheet-Lot0471203
- P8077Datasheet-Lot0491208
- P8077Datasheet-Lot0541305
- P8077Datasheet-Lot0561309
- P8077Datasheet-Lot0561405
- P8077Datasheet-Lot0581506

Selection Tools

Selection Tools

- Protease Selection Chart

Safety Data Sheet

Datacards

Safety Data Sheet

The following is a list of Safety Data Sheet (SDS) that apply to this product to help you use it safely.

- Furin

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