SANTA CRUZ BIOTECHNOLOGY, INC.

# Furin (T-20): sc-12484

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*The Power to Question*

## BACKGROUND

Furin (FUR, PACE, PCSK3, SPC1, Kex2p) is a calcium-dependent serine endoprotease that belongs to the subtilisin-like proprotein convertase family. The members of this family process latent precursor proteins into their biologically active products. Furin cleaves at paired basic amino acid processing sites within proparathyroid hormone, transforming growth factor β1 precursor, pro-albumin, pro-β-secretase, membrane type-1 matrix metalloproteinase, β subunit of pro-nerve growth factor and von Willebrand factor. Furin can directly cleave proMMP-2 within the *trans*-Golgi network leading to an inactive form of matrix metalloproteinase-2 (MMP-2). Furin is synthesized as an inactive zymogen that may minimize the occurrence of premature enzymatic activity that would lead to alternative protein activation or degradation. The inhibitory mechanism is based on the presence of an inactivating prosegment at the $NH_2$ terminal of the Furin. After initial autocatalytic cleavage, the prosegment remains tightly associated until it reaches the *trans*-Golgi network where the dissociation of the prosegment and activation of Furin occurs.

## REFERENCES


1. Nakayama, K. 1997. Furin: a mammalian subtilisin/Kex2p-like endoprotease involved in processing of a wide variety of precursor proteins. Biochem. J. 327: 625-635.
2. Hatsuzawa, K., et al. 1990. Structure and expression of mouse Furin, a yeast Kex2-related protease. Lack of processing of coexpressed prorenin in GH4C1 cells. J. Biol. Chem. 265: 22075-22078.
3. Rozan, L., et al. 2004. Plasticity of extended subsites facilitates divergent substrate recognition by Kex2 and Furin. J. Biol. Chem. 279: 35656-35663.
4. Podsiadlo, P., et al. 2004. Furin inhibition by compounds of copper and zinc. J. Biol. Chem. 279: 36219-36227.
5. Wickham, L., et al. 2005. β-amyloid protein converting enzyme 1 and brain-specific type II membrane protein BRI3: binding partners processed by Furin. J. Neurochem. 92: 93-102.


## CHROMOSOMAL LOCATION

Genetic locus: FURIN (human) mapping to 15q26.1; Furin (mouse) mapping to 7 D3.

## SOURCE

Furin (T-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Furin of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12484 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

Furin (T-20) is recommended for detection of Furin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Furin (T-20) is also recommended for detection of Furin in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Furin siRNA (h): sc-40595, Furin siRNA (m): sc-40596, Furin shRNA Plasmid (h): sc-40595-SH, Furin shRNA Plasmid (m): sc-40596-SH, Furin shRNA (h) Lentiviral Particles: sc-40595-V and Furin shRNA (m) Lentiviral Particles: sc-40596-V.

Molecular Weight of Furin precursor: 96 kDa.

Molecular Weight of mature Furin:90 kDa.

Molecular Weight of Furin splice variant: 60 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or mouse liver extract: sc-2256.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.