

# Furin (G-6): sc-133141

## 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 parathyroid hormone, transforming growth factor  $\beta$ 1 precursor, proalbumin, pro- $\beta$ -secretase, membrane type-1 matrix metalloproteinase,  $\beta$  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<sub>2</sub>-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

- 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.
- 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

Furin (G-6) is a mouse monoclonal antibody raised against amino acids 575-794 of Furin of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Furin (G-6) is available conjugated to agarose (sc-133141 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-133141 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133141 PE), fluorescein (sc-133141 FITC), Alexa Fluor® 488 (sc-133141 AF488), Alexa Fluor® 546 (sc-133141 AF546), Alexa Fluor® 594 (sc-133141 AF594) or Alexa Fluor® 647 (sc-133141 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-133141 AF680) or Alexa Fluor® 790 (sc-133141 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## STORAGE

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

## APPLICATIONS

Furin (G-6) is recommended for detection of Furin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

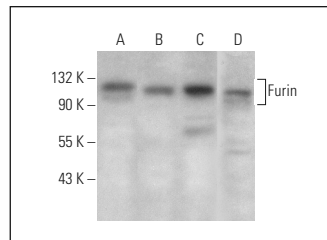
Molecular Weight of Furin precursor: 96 kDa.

Molecular Weight of mature Furin: 90 kDa.

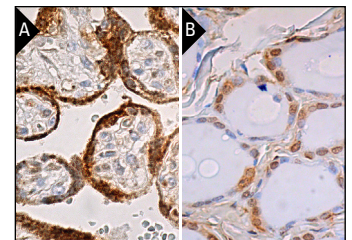
Molecular Weight of Furin splice variant: 60 kDa.

Positive Controls: PC-3 cell lysate: sc-2220, human placenta extract: sc-363772 or c4 whole cell lysate: sc-364186.

## DATA



Furin (G-6): sc-133141. Western blot analysis of Furin expression in PC-3 (A), C6 (B) and c4 (C) whole cell lysates and human placenta tissue extract (D).



Furin (G-6): sc-133141. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of trophoblastic cells (A). Furin (G-6) HRP: sc-133141 HRP. Direct immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic and nuclear staining of glandular cells. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214 (B).

## SELECT PRODUCT CITATIONS

- Ettheto, M., et al. 2020. Epigallocatechin-3-Gallate (EGCG) improves cognitive deficits aggravated by an obesogenic diet through modulation of unfolded protein response in APP<sup>swe</sup>/PS1<sup>dE9</sup> mice. *Mol. Neurobiol.* 57: 1814-1827.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.