SANTA CRUZ BIOTECHNOLOGY, INC.

Furin (B-6): sc-133142

SANTA CRUZ BIOTECHNOLOGY

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, proalbumin, 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.

REFERENCE

1. 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.
2. 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.
3. Rozan, L., et al. 2004. Plasticity of extended subsites facilitates divergent substrate recognition by Kex2 and Furin. J. Biol. Chem. 279: 35656-35663.

CHROMOSOMAL LOCATION

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

SOURCE

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

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Furin (B-6) is available conjugated to agarose (sc-133142 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-133142 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133142 PE), fluorescein (sc-133142 FITC), Alexa Fluor® 488 (sc-133142 AF488), Alexa Fluor® 546 (sc-133142 AF546), Alexa Fluor® 594 (sc-133142 AF594) or Alexa Fluor® 647 (sc-133142 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-133142 AF680) or Alexa Fluor® 790 (sc-133142 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

Furin (B-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 µg per 100-500 µg 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.

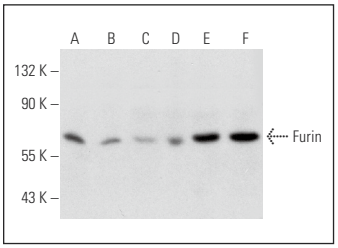
Molecular Weight of Furin precursor: 96 kDa.

Molecular Weight of mature Furin: 90 kDa.

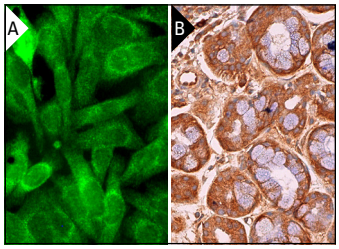
Molecular Weight of Furin splice variant: 60 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HEL 92.1.7 cell lysate: sc-2270 or NIH/3T3 whole cell lysate: sc-2210.

DATA



Furin (B-6): sc-133142. Western blot analysis of Furin expression in Hep G2 (**A**), HEL 92.1.7 (**B**), NIH/3T3 (**C**), SP2/0 (**D**), KNRK (**E**) and RBL-1 (**F**) whole cell lysates.



Furin (B-6): sc-133142. Immunofluorescence staining of formalin-fixed SW480 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human salivary gland tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Wang, J.W., et al. 2014. Preparation and properties of a papillomavirus infectious intermediate and its utility for neutralization studies. Virology 449: 304-316.
2. Condor Capcha, J.M., et al. 2021. Generation of SARS-CoV-2 spike pseudotyped virus for viral entry and neutralization assays: a 1-week protocol. Front. Cardiovasc. Med. 7: 618651.
3. Deben, C., et al. 2022. Expression of SARS-CoV-2-related surface proteins in non-small-cell lung cancer patients and the influence of standard of care therapy. Cancers 14: 4074.

STORAGE

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