

involucrin (A-5): sc-398952

BACKGROUND

Involucrin is a precursor protein of the keratinocyte cornified envelope, which is formed beneath the inner surface of the cell membrane during terminal differentiation. Involucrin first appears in the cell cytosol but ultimately becomes cross-linked to membrane proteins by transglutaminase. During keratinocyte terminal differentiation glutamine residues of involucrin become covalently cross-linked to other envelope precursors via covalent ϵ -(γ -glutamyl) lysine bonds. Moreover, its large size allows involucrin to cross-link molecules that are separated by substantial distances in the cornified envelope. These properties allow a single involucrin molecule to form multiple cross-links, in multiple spatial planes, with other envelope precursors. Involucrin is specifically expressed in Chinese hamster ovarian cells (fibroblasts), PtK2 rat kangaroo kidney cells (simple epithelial) and rat epidermal keratinocytes (stratifying squamous epithelial).

CHROMOSOMAL LOCATION

Genetic locus: IVL (human) mapping to 1q21.3; Ivl (mouse) mapping to 3 F1.

SOURCE

involucrin (A-5) is a mouse monoclonal antibody raised against amino acids 1-120 mapping at the N-terminus of involucrin of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

RESEARCH USE

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

APPLICATIONS

involucrin (A-5) is recommended for detection of involucrin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ 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 involucrin siRNA (h): sc-35697, involucrin siRNA (m): sc-43367, involucrin shRNA Plasmid (h): sc-35697-SH, involucrin shRNA Plasmid (m): sc-43367-SH, involucrin shRNA (h) Lentiviral Particles: sc-35697-V and involucrin shRNA (m) Lentiviral Particles: sc-43367-V.

Molecular Weight of involucrin precursor: 68 kDa.

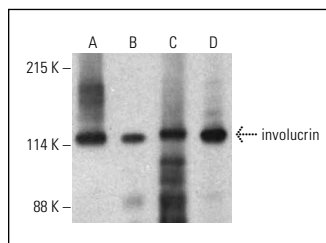
Molecular Weight of involucrin: 140 kDa.

Positive Controls: human cervix extract: sc-363756, RT-4 whole cell lysate: sc-364257 or SK-BR-3 cell lysate: sc-2218.

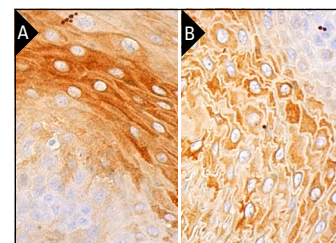
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



involucrin (A-5): sc-398952. Western blot analysis of involucrin expression in SK-BR-3 (A), RT-4 (B) and normal human keratinocyte (C) whole cell lysates and human cervix tissue extract (D).



involucrin (A-5): sc-398952. Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue (A) and human esophagus tissue (B) showing cytoplasmic staining of squamous epithelial cells. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214. Detected with m-IgG κ BP-B: sc-516142 and ImmunoCruz® ABC Kit: sc-516216.

SELECT PRODUCT CITATIONS

- Cai, B., et al. 2019. BMP2-mediated PTEN enhancement promotes differentiation of hair follicle stem cells by inducing autophagy. *Exp. Cell Res.* 385: 111647.
- Soonthornchai, W., et al. 2021. MicroRNA-378a-3p is overexpressed in psoriasis and modulates cell cycle arrest in keratinocytes via targeting BMP2 gene. *Sci. Rep.* 11: 14186.
- Wang, M., et al. 2022. Acquired semi-squamatization during chemotherapy suggests differentiation as a therapeutic strategy for bladder cancer. *Cancer Cell* 40: 1044-1059.e8.
- Hatterschide, J., et al. 2022. YAP1 activation by human papillomavirus E7 promotes basal cell identity in squamous epithelia. *Elife* 11: e75466.
- Hatterschide, J., et al. 2023. Monitoring cell fate in 3D organotypic human squamous epithelial cultures. *STAR Protoc.* 4: 102101.



See **involucrin (SY5): sc-21748** for involucrin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.