

Product Information

Anti-Involucrin antibody, Mouse monoclonal
Clone SY5, purified from hybridoma cell culture

Product Number **SAB4200794**

Product Description

Monoclonal Anti-Involucrin (mouse IgG1 isotype) is derived from the SY5 hybridoma, produced by the fusion of mouse myeloma cells and splenocytes from a mouse immunized with purified human involucrin.¹ The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2. The antibody is purified from the culture supernatant of the hybridoma cells.

Monoclonal Anti-Involucrin specifically recognizes human² and mouse³ involucrin. The antibody does not react with mouse epidermis, thus enabling the use of the antibody for study of human xenografts in nude mice.¹ The antibody stains the upper spinous and granular layers in human skin and the cytoplasm of suprabasal terminally differentiated keratinocytes in stratified colonies.¹ The antibody is recommended for use in various immunological techniques, including immunoblot⁴ (~68 kDa), immunofluorescence,²⁻³ immunohistochemistry,⁴ and immunoprecipitation.¹

The skin serves as a vital barrier that protects the internal environment from external influences. As cells start to migrate out of the basal cell layer of the epidermis towards the surface of the skin, they lose the ability to divide and progress towards a terminal differentiation stage.⁵ During this process, keratinocytes go through marked morphological and structural changes. At the same time, the synthesis of important differentiation-dependent structural and catalytic proteins is initiated, which include keratins, filaggrin, transglutaminase, loricrin, and involucrin.

Involucrin (IVL) is a soluble cytoplasmic protein precursor of the epidermal cornified envelope that becomes crosslinked by transglutaminase during envelope assembly. Involucrin is expressed in a range of stratified squamous epithelia, including the cornea, which lacks a distinct cornified layer.¹ It serves as an early marker of keratinocyte differentiation and a component of the cornified envelope.⁵⁻⁸ It is specifically expressed in the suprabasal layers of the epidermis.

Involucrin accumulates in the spinous and granular layers as a non-crosslinked precursor and becomes covalently crosslinked to other proteins and lipids to form the cornified envelope scaffolding during the final stages of keratinocyte differentiation.^{7,9-10} Cells that have lost their ability to divide still continue to express involucrin.¹¹

In pathological conditions, involucrin expression may be altered. In psoriasis and other benign epidermal hyperplasias, involucrin expression appears closer to the basal layer than its normal expression. In squamous cell carcinomas and premalignant lesions, involucrin is abnormally increased and found to be reduced in severe dysplasias of the larynx and cervix.^{1,12}

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody Concentration: ~1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunohistochemistry: a working concentration of 2.5-5 µg/mL is recommended using human skin sections.

Note: In order to obtain best results in different techniques and preparations, it is recommended to determine optimal working concentration by titration test.

References

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