Overview

Product name
Anti-Cytokeratin 14 antibody [EP1612Y]

Description
Rabbit monoclonal [EP1612Y] to Cytokeratin 14

Host species
Rabbit

Tested applications
Suitable for: WB, IP, Flow Cyt, IHC-P, ICC/IF

Species reactivity
Reacts with: Human

Immunogen
Synthetic peptide within Human Cytokeratin 14 aa 400-500 (C terminal). The exact sequence is proprietary.

Positive control

General notes
A trial size is available to purchase for this antibody.

Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

This product is a recombinant rabbit monoclonal antibody.

Properties

Form
Liquid

Storage instructions
Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.

Storage buffer
pH: 7.20
Preservative: 0.05% Sodium azide
Constituents: 0.1% BSA, 40% Glycerol, 9.85% Tris glycine, 50% Tissue culture supernatant

Purity
Tissue culture supernatant

Clonality
Monoclonal

Clone number
EP1612Y

Isotype
IgG
Function

The nonhelical tail domain is involved in promoting KRT5-KRT14 filaments to self-organize into large bundles and enhances the mechanical properties involved in resilience of keratin intermediate filaments in vitro.

Tissue specificity

Detected in the basal layer, lowered within the more apically located layers specifically in the stratum spinosum, stratum granulosum but is not detected in stratum corneum. Strongly expressed in the outer root sheath of anagen follicles but not in the germinative matrix, inner root sheath or hair. Found in keratinocytes surrounding the club hair during telogen.

Involvement in disease

Defects in KRT14 are a cause of epidermolysis bullosa simplex Dowling-Meara type (DM-EBS) [MIM:131760]. DM-EBS is a severe form of intraepidermal epidermolysis bullosa characterized by generalized herpetiform blistering, milia formation, dystrophic nails, and mucous membrane involvement.

Defects in KRT14 are a cause of epidermolysis bullosa simplex Weber-Cockayne type (WC-EBS) [MIM:131800]. WC-EBS is a form of intraepidermal epidermolysis bullosa characterized by blistering limited to palmar and plantar areas of the skin.

Defects in KRT14 are a cause of epidermolysis bullosa simplex Koebner type (K-EBS) [MIM:131900]. K-EBS is a form of intraepidermal epidermolysis bullosa characterized by generalized skin blistering. The phenotype is not fundamentally distinct from the Dowling-Meara type, although it is less severe.

Defects in KRT14 are the cause of epidermolysis bullosa simplex autosomal recessive (AREBS) [MIM:601001]. AREBS is an intraepidermal epidermolysis bullosa characterized by localized blistering on the dorsal, lateral and plantar surfaces of the feet.

Defects in KRT14 are the cause of Naegeli-Franceschetti-Jadassohn syndrome (NFJS) [MIM:161000]; also known as Naegeli syndrome. NFJS is a rare autosomal dominant form of ectodermal dysplasia. The cardinal features are absence of dermatoglyphics (fingerprints), reticular cutaneous hyperpigmentation (starting at about the age of 2 years without a preceding inflammatory stage), palmoplantar keratoderma, hypohidrosis with diminished sweat gland function and discomfort provoked by heat, nail dystrophy, and tooth enamel defects.

Defects in KRT14 are the cause of dermatopathia pigmentosa reticularis (DPR) [MIM:125595]. DPR is a rare ectodermal dysplasia characterized by lifelong persistent reticulate hyperpigmentation, noncicatricial alopecia, and nail dystrophy.

Sequence similarities

Belongs to the intermediate filament family.

Our Abpromise guarantee covers the use of ab51054 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<table>
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<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
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<tbody>
<tr>
<td>WB</td>
<td>⭐⭐⭐⭐⭐</td>
<td>1/20000. Detects a band of approximately 48 kDa (predicted molecular weight: 52 kDa).</td>
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<tr>
<td>IP</td>
<td></td>
<td>1/50.</td>
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| Flow Cyt    | ⭐⭐⭐⭐⭐    | 1/100. 
|             |           | ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody. |
| IHC-P       | ⭐⭐⭐⭐⭐    | Use at an assay dependent concentration. |
| ICC/IF      | ⭐⭐⭐⭐⭐    | 1/100. |

Target
Cellular localization

Cytoplasm. Nucleus. Expressed in both as a filamentous pattern.

Images

ab51054 staining Cytokeratin 14 in human skin tissue by Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections).

Tissue was fixed in paraformaldehyde and a heat mediated antigen retrieval step was performed using citrate buffer, pH 6.0. Samples were then permeabilized using 0.1% saponin/PBS, blocked with 4% BSA for 30 minutes at 25°C and then incubated with ab51054 at a 1/200 dilution for 16 hours at 4°C. The secondary used was a Texas Red conjugated goat anti-rabbit polyclonal used at a 1/100 dilution.

ICC/IF image of ab51504 stained A431 (Human epidermoid carcinoma cell line) cells.

The cells were fixed in 100% methanol (5 min) and then incubated in 1% BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilize the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab51504, 1/100 dilution) overnight at +4°C. The secondary antibody (green) was ab96899, DyLight® 488 goat anti-rabbit IgG (H+L) used at a 1/250 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43 µM.
Anti-Cytokeratin 14 antibody [EP1612Y] (ab51054) at 1/20000 dilution + A431 (Human epidermoid carcinoma cell line) cell lysate at 10 µg

Secondary
Goat anti-Rabbit-HRP at 1/2000 dilution

**Predicted band size:** 52 kDa  
**Observed band size:** 48 kDa  
*why is the actual band size different from the predicted?*

Overlay histogram showing A431 (Human epidermoid carcinoma cell line) cells stained with ab51054 (red line).

The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Triton for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab51054, 1/100 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rabbit IgG (H+L) (ab96899) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (1µg/1x10⁶ cells) used under the same conditions. Acquisition of >5,000 events was performed.

This antibody gave a positive signal in A431 cells fixed with 4% paraformaldehyde/permeabilized in 0.1% PBS-Triton used under the same conditions.

Please note: All products are “FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES”
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