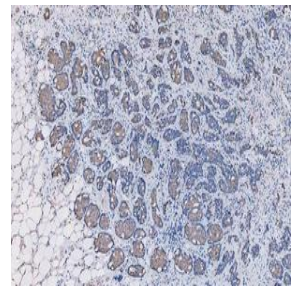
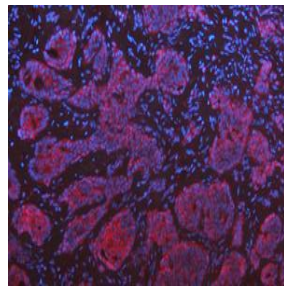
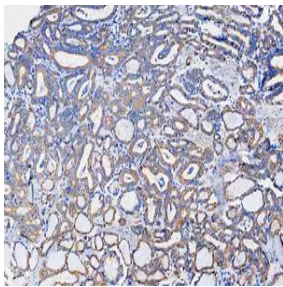
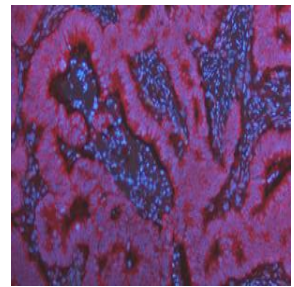
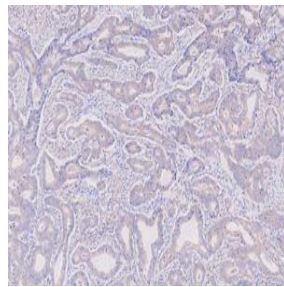
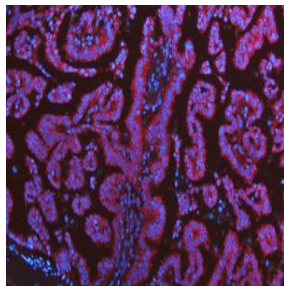


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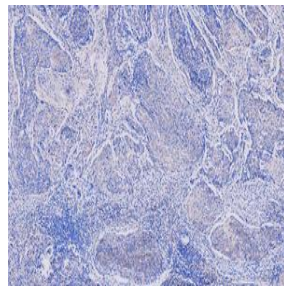
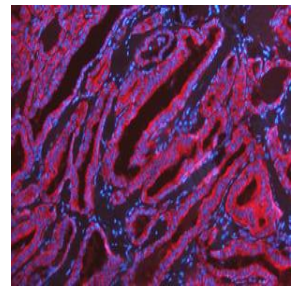


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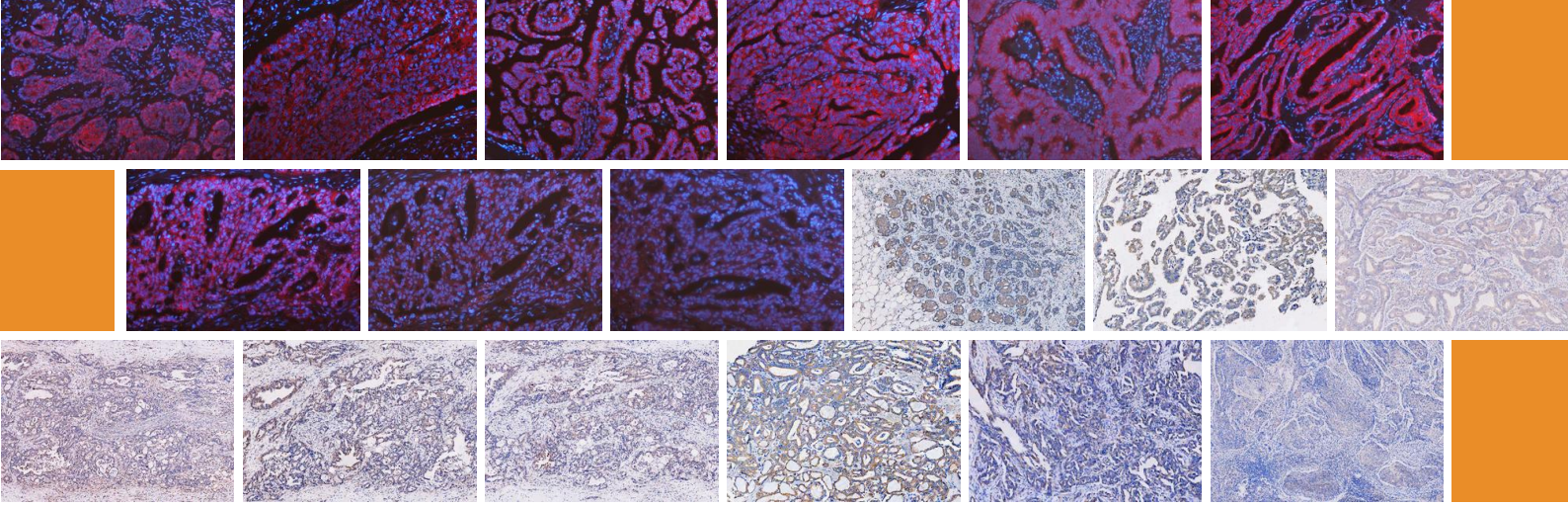


R

*All pictures displayed are experimental results of the product itself.



**KRT7 antibody,
optimized for IHC and
immunofluorescence**



KRT7 antibody, optimized for IHC and immunofluorescence

Summary

Boster Bio's KRT7 antibody (A02416-2) is a highly specific and sensitive tool optimized for immunohistochemistry (IHC) and immunofluorescence (IF). This antibody is validated across multiple normal and cancerous tissues and demonstrates consistent staining patterns verified by orthogonal RNA-seq data and comparison with other established antibodies.

This antibody is part of Boster Bio's PicoLumine™ Series, featuring hundreds of protein biomarkers optimized for immunohistochemistry, immunocytochemistry, and immunofluorescence. All antibodies in this product line have gone through the same level of validation as shown in this report. This product line is guaranteed under Boster Bio's **PicoLumine Guarantee**, that the antibody will work under the recommended condition on the indicated tissues and cell lines, or your money back.

Highlights

- **Specificity and Sensitivity:** High reproducibility and signal-to-noise ratio.
- **Optimized Protocols:** Reliable protocols for both IHC and IF.
- **PicoLumine Guarantee:** Guaranteed performance or your money back.

Antibody evaluation

Keratin 7 (KRT7), also known as cytokeratin 7, forms the main component of the intermediate filament cytoskeleton. KRT7 plays a key role in the regulation of tumor microenvironment and immune response, and abnormal KRT7 expression is associated with inhibitory immune microenvironment. KRT7 has the potential to be used as a diagnostic and prognostic indicator for a variety of cancers. The KRT7(A02416-2) results were excellent in immunofluorescence assays, and the antibody evaluation 4 out of 5 stars.

Antibody information

Antibody Name: Anti-KRT7 Antibody Picoband®

Host Species: Rabbit

Isotype: IgG (Polyclonal)

Catalog Number: A02416-2

Supplier: [Boster Bio](#)

Validation Findings Summary:

The KRT7 antibody demonstrated high specificity, sensitivity, and reproducibility in immunofluorescence assays. The optimized conditions provide reliable detection of KRT7 in pathologically relevant cell lines and tissues. Researchers can confidently use this antibody for KRT7 immunofluorescence studies, contributing to accurate and meaningful experimental outcomes.

Cytokeratin 7/KRT7 Introduction

Introduction and origin

KRT7 belongs to the cytokeratin type II family and is mainly expressed during differentiation in simple and stratified epithelial tissues. The gene responsible for encoding KRT7 is located in a specific region of chromosome 12q12-q13. KRT7 is mainly expressed in simple epithelial cells and their tumors. Type I and type II keratin are intermediate filament-forming proteins expressed in epithelial cells. The main roles of 6 keratin include maintaining cell integrity and regulating cell growth, migration, and apoptosis in normal tissues and cancers.

Function and effect

In a physiological context, KRT7 expression is associated with normal proliferation, migration, and epithelial-mesenchymal transition (EMT), all of which play important roles in embryo development, immune system response, and wound healing. However, their higher expression in cancer is associated with increased proliferation, migration, and EMT. The anomalous expression of KRT7 is linked to tumor progression and metastasis, resulting from oncogenic and epigenetic events. The exact function of KRT7 in the progression and metastasis of tumors is not yet clearly understood. KRT7 is expressed in most cancers, except colorectal carcinoma, prostate cancer, renal cancer, thymic carcinoma, carcinoid, and Merkel cell carcinoma. Thus, it is utilized as a diagnostic marker in tumor pathology.

Clinical significance

KRT7 plays a key role in the regulation of tumor microenvironment and immune response, and abnormal KRT7 expression is associated with inhibitory immune microenvironment. KRT7 has the potential to serve as a diagnostic and prognostic indicator for a variety of cancers. These findings help us understand the function of KRT7 in tumorigenesis and development and its potential clinical utility, thus making a significant contribution to KRT7 research and drug development.

Expected Staining Patterns

Cellular

Localization:

KRT7 is the protein predicted to be localized to the Intermediate filaments (approved), cytosol (supported).

[Location →](#)

Tissues with high expression of KRT7 (RNA):

KRT7 is known to have cytoplasmic and membranous expression mainly in glandular epithelium.

[Tissues expression →](#)

Cell lines with high expression of KRT7 :

According to data from ProteinAtlas.com, KRT7 is known to be detected in many cell lines.

[Cell lines expression →](#)

Antibody validation experiment design

Selection of validation tissues and cell lines

The tissue-positive controls in the following experiments are primarily based on suggestions from ProteinAtlas.com.

Positive tissues for IHC:

1. Human pancreas cancer (used for optimization with 3 concentrations of primary antibody)

Positive tissues for IF:

1. Human pancreas cancer (used for optimization with 3 concentrations of primary antibody)

Positive tissues for IHC (experimental verification):

1. Human thyroid cancer, human stomach cancer, human breast cancer, human lung cancer, human ovarian cancer, human cervical cancer

Positive tissues for IF (experimental verification):

1. Human thyroid cancer, human stomach cancer, human lung cancer, human breast cancer, human ovarian cancer, human cervical cancer

**optimization Method: we have tested 3 concentrations of the primary antibody on the selected tissue(s) to assess the best experiment conditions for immunohistochemistry and immunofluorescence. The conditions that produced the best signal with a low background were selected as the recommended experiment conditions.*

Reagents used in the experiment

1. Anti-KRT7 Antibody (A02416-2), Concentrations tested: 1 µg/mL, 5 µg/mL, 25 µg/mL.
2. EDTA Buffer (pH 8.0, Epitope Retrieval Solution): Used for heat-mediated antigen retrieval.
3. Inactivation: 3% H₂O₂ for 10 min.
4. Blocking Solution: normal goat serum.
5. Secondary Antibody (IF): DyLight 594 Conjugated AffiniPure Goat Anti-rabbit IgG (H+L) (BA1142), dilution: 1:100, Incubated for 30 minutes at 37°C.
6. Secondary Antibody (IHC-P): HRP-AffiniPure Goat Anti-Rabbit IgG, dilution: 1:500, Incubated for 30 minutes at 37°C.
7. Staining (IHC-P): Add a suitable amount of DAB reagent to the samples, Observe under the microscope, and control the color development time.
8. Counterstain: DAPI (IF, AR1176); hematoxylin (IHC-P).
9. Mounting Medium: anti-fade mounting medium.

Experiment protocols

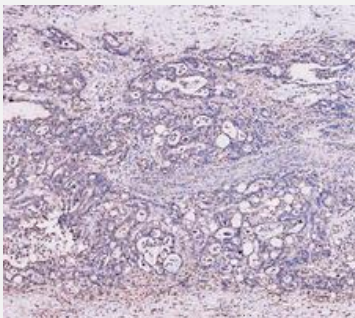
Immunohistochemistry:

Protocol reference

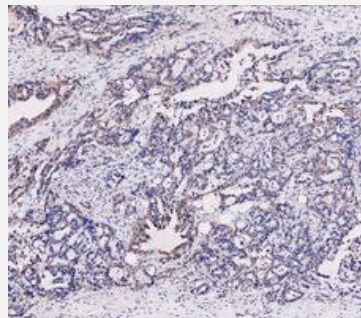
[Click to view](#)

IHC Optimization

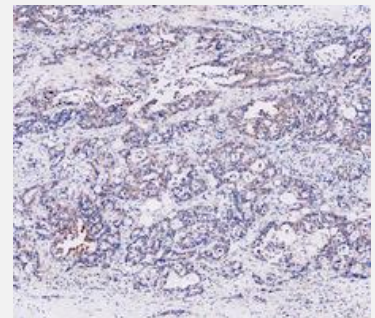
Human pancreas cancer tissue embedded in FFPE is used to optimize the concentration and incubation time for the antibody. 3 concentrations of rabbit anti-KRT7 Antibody (A02416-2) were used to incubate. 1 µg/mL, 5 µg/mL, 25 µg/mL overnight at 4°C. The results are as follows:



Antigen Retrieval: Heat
Primary ab: 25 µg/mL



Antigen Retrieval: Heat
Primary ab: 5 µg/mL



Antigen Retrieval: Heat
Primary ab: 1 µg/mL

Incubation: 4°C overnight

Secondary: BA3894

Imaging: Brightfield

[View Original Image →](#)

Incubation: 4°C overnight

Secondary: BA3894

Imaging: Brightfield

[View Original Image →](#)

Incubation: 4°C overnight

Secondary: BA3894

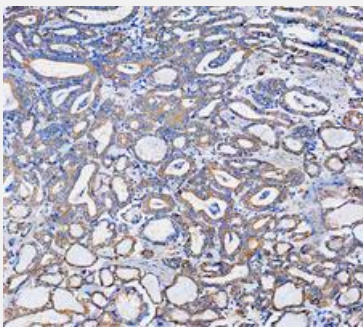
Imaging: Brightfield

[View Original Image →](#)

An in-house certified pathologist reviewed the result images and recommended the medium condition (5µg/mL) be used for immunofluorescence. This condition is used to perform immunohistochemistry on other relevant normal and cancerous tissues to ensure the antibody produces expected staining patterns.

IHC Additional validations:

Cancerous tissues

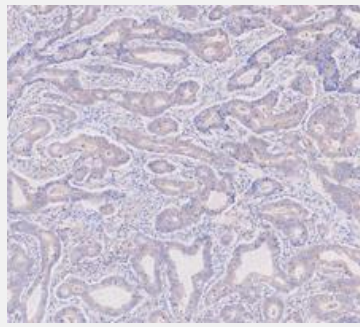


Human thyroid cancer

Expected: high level

Observed: high level

[View Original Image →](#)

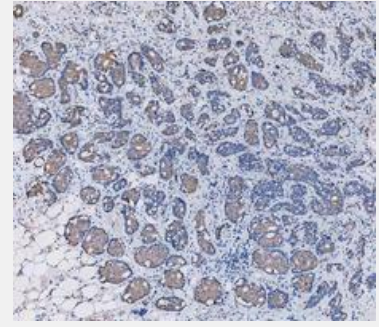


Human stomach cancer

Expected: medium level

Observed: high level

[View Original Image →](#)

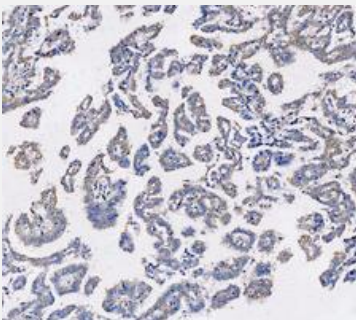


Human breast cancer

Expected: medium level

Observed: medium level

[View Original Image →](#)

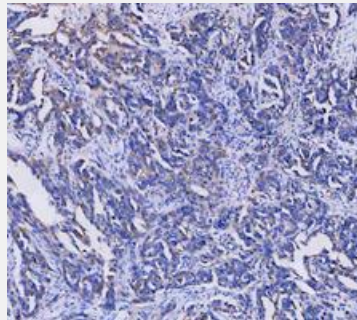


Human lung cancer

Expected: high level

Observed: high level

[View Original Image →](#)

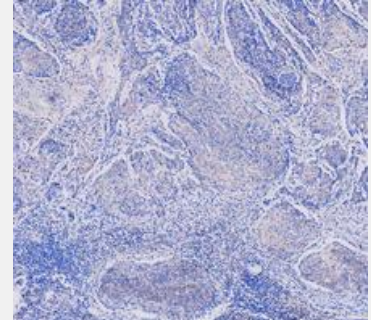


Human ovarian cancer

Expected: high level

Observed: medium level

[View Original Image →](#)



Human cervical cancer

Expected: high level

Observed: low level

[View Original Image →](#)

Tissue staining expectation reference

[Click to view](#)

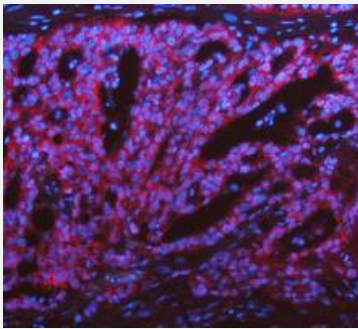
IHC scoring

5/4, Supported–Orthogonal, based on the following criteria:

1. IHC stains in the selected tissues are consistent with RNA level data.
2. IHC staining patterns in selected tissues match the expected staining patterns of this biomarker as shown in similar well-established antibodies.
3. IHC staining subcellular localization is consistent with the literature.

IF Optimization

The human pancreas cancer is used to optimize the concentration and incubation time for the antibody. 3 concentrations of rabbit anti-KRT7 (A02416-2) were used to incubate. 1µg/mL, 5µg/mL, 25µg/mL overnight at 4°C. The results are as follows:



Human pancreas cancer

Primary ab: 25µg/mL

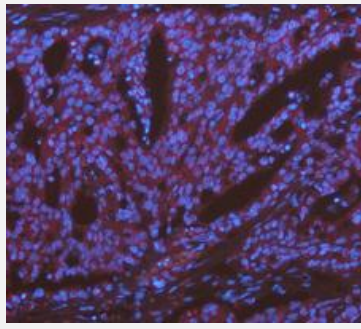
Incubation: 4°C overnight

Secondary: BA1142

Imaging: Fluorescent

Microscopy

[View Original Image →](#)



Human pancreas cancer

Primary ab: 5µg/mL

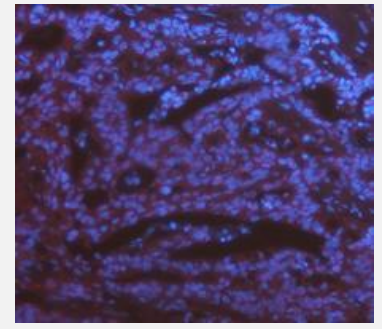
Incubation: 4°C overnight

Secondary: BA1142

Imaging: Fluorescent

Microscopy

[View Original Image →](#)



Human pancreas cancer

Primary ab: 1µg/mL

Incubation: 4°C overnight

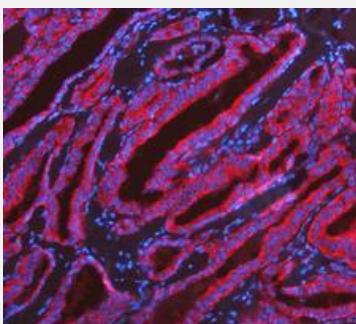
Secondary: BA1142

Imaging: Fluorescent

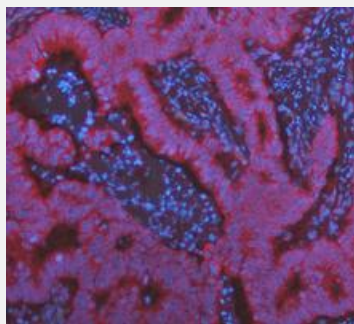
Microscopy

[View Original Image →](#)

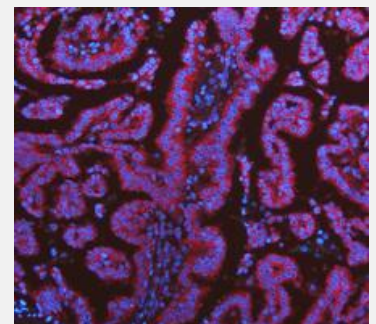
An in house certified pathologist reviewed the result images recommended the high condition (25µg/mL) be used for immunofluorescence. This condition is used to perform immunohistochemistry on other relevant tissues to ensure the antibody produces expected staining patterns.



Human thyroid cancer



Human stomach cancer



Human lung cancer

Expected: high level

Observed: high level

[View Original Image →](#)

Expected: high level

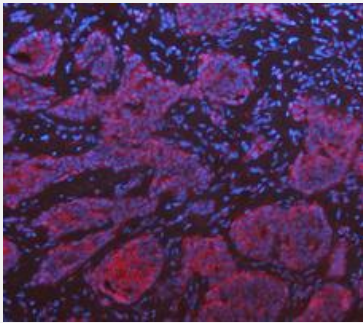
Observed: high level

[View Original Image →](#)

Expected: high level

Observed: high level

[View Original Image →](#)

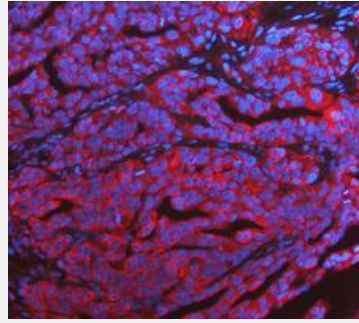


Human breast cancer

Expected: high level

Observed: high level

[View Original Image →](#)

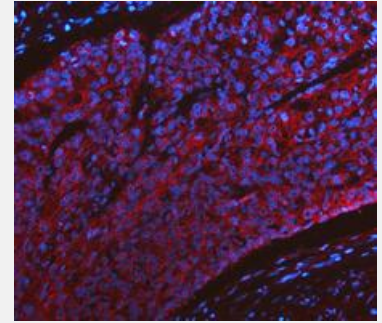


Human ovarian cancer

Expected: high level

Observed: high level

[View Original Image →](#)



Human cervical cancer

Expected: high level

Observed: medium level

[View Original Image →](#)

ICC/IF scoring

5/5, Supported–Orthogonal, based on the following criteria:

1. IF stains in the selected tissue line are consistent with RNA level data.
2. IF staining subcellular localization is consistent with literature and other established antibodies for this biomarker.

Company Profile



30+years of technique improvement



20000+ antibodies and 2000+ ELISA kits



60000+ cited publications



Driven by user's need

Boster Bio has been dedicated to providing affordable high-sensitivity, high-specificity ELISA kits, and WB/IHC compatible antibodies since its establishment in 2003. We offer antibodies rigorously validated for IHC, WB, ELISA, and Flow Cytometry, striving to deliver the highest-quality service and earn the trust of researchers globally. Low-cost antibody packages for rare organisms and free validation for antibodies are provided now. Free E-books, blogs, and educational pathway maps are also offered on our website. We are ready to serve any customer at any time.



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