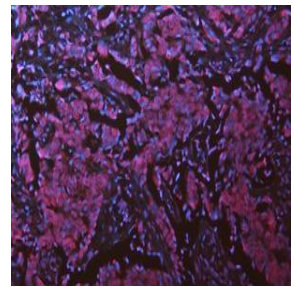
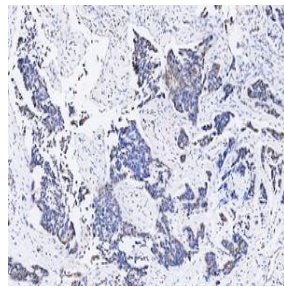
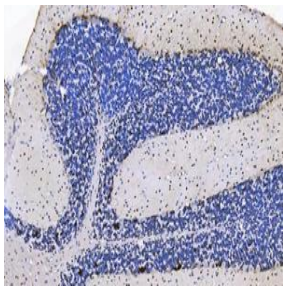
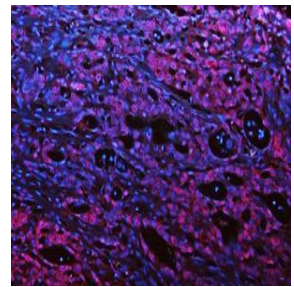
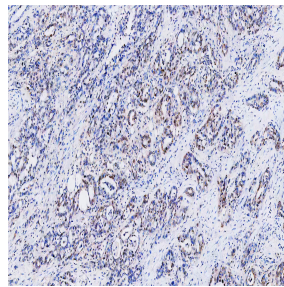
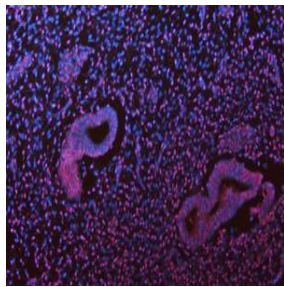


B

O

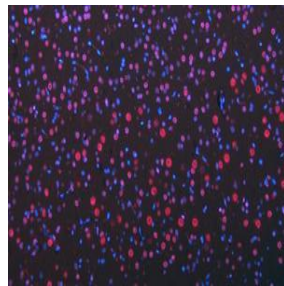
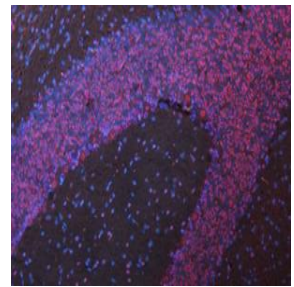


S



T

E

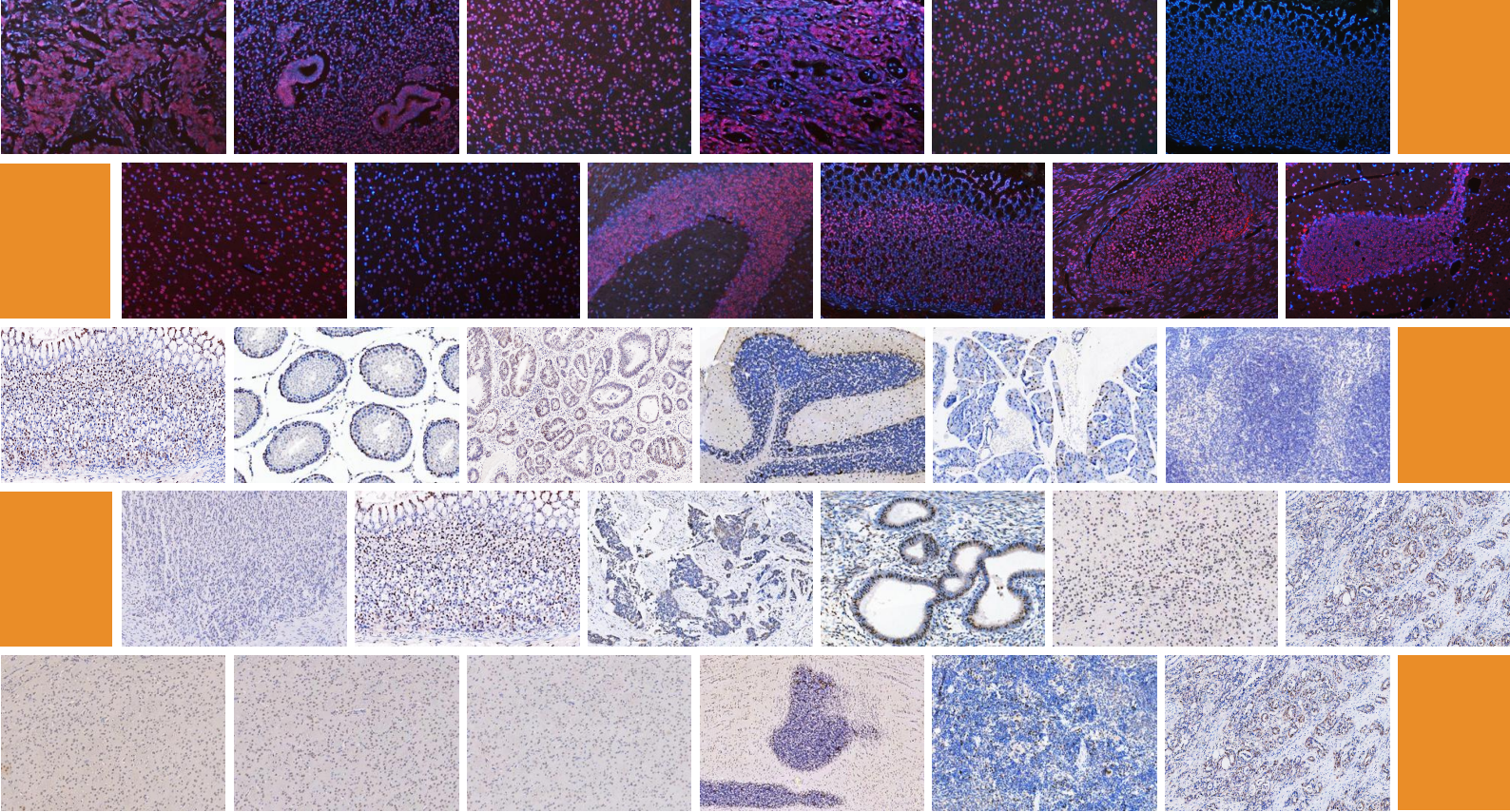


R

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



**MSI1 antibody,  
optimized for IHC and  
immunofluorescence**



# MSI1 antibody, optimized for IHC and immunofluorescence

## Summary

Boster Bio's MSI1 antibody (A05052-1) 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



MSI1 is a marker of neural stem cells, but it is also closely related to the occurrence and development of a variety of solid tumors. In this experiment, immunohistochemistry and immunofluorescence experiments were carried out using antibody MSI1 (A05052-1), and the verification results were basically consistent with the theoretical expression, and the antibody quality effect was good. Antibody evaluation 5 out of 5 stars.

# Antibody information



**Antibody Name:** Anti-MSI1 Antibody Picoband™

**Host Species:** Rabbit

**Isotype:** IgG (Polyclonal)

**Catalog Number:** A05052-1

**Supplier:** [Boster Bio](#)

## Validation Findings Summary:

The MSI1 antibody demonstrated high specificity, sensitivity, and reproducibility in immunofluorescence assays. The optimized conditions provide reliable detection of MSI1 in pathologically relevant cell lines and tissues. Researchers can confidently use this antibody for MSI1 immunofluorescence studies, contributing to accurate and meaningful experimental outcomes.

# MSI1 Introduction



## Introduction and origin

The MSI1 gene is located at 12q24 and 1q24.31, which contains 14 exons. MSI1 has been shown to be an important marker for mammalian neural stem cells, and is also expressed in breast, gastrointestinal and skin stem cells, and is a general marker for human stem cells.

The mechanism of action of Msi1 is complex, and many mechanisms are still unclear, and some studies have used pathway studio software to predict the protein targets encoded by mRNA of Msi1-related target genes, which are mainly related to cell cycle, apoptosis and proliferation.

## Function and effect

Musashi-1(msi1) has the effect of maintaining stem cell function in neural stem cells, and is expressed in adult stem cells of oral cavity, gastrointestinal tract, skin, hair follicles and other tissues and organs. Musashi-1 is closely related to the occurrence and development of tumors by regulating the Notch and Wnt/ $\beta$ -catenin signaling pathways. In recent years, the theory of cancer stem cells in the mechanism of tumorigenesis has attracted much attention. Musashi-1 has become an indispensable research object in cancer stem cell research as a stem cell candidate gene.

## Clinical significance

Musashi-1 (Msi1) is a newly reported tumor stem cell (TSC) marker. MSI1 is involved in the occurrence, development and metastasis of tumors through post-transcriptional regulation of a variety of genes, and is related to the prognosis and treatment of tumors.

However, the biological function and molecular mechanism of Msi1 are not fully understood, and the study of the regulatory mechanism of Msi1 is expected to provide new ideas for clinical diagnosis and treatment of tumors.

## Expected Staining Patterns

### Cellular Localization:

MSI1 is localized to the nucleoplasm (approved).

[Location →](#)

### Tissues with high expression of MSI1:

MSI1 is known to cytoplasmic and nuclear expression in several tissues, including CNS and retina.

[Tissues expression →](#)

### Cell lines with high expression of MSI1:

According to data from ProteinAtlas.com, MSI1 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. Rat brain(used for optimization with 3 concentrations of primary antibody)

### Positive tissues for IHC (experimental verification):

1. Mouse brain,mouse cerebellum,rat cerebellum,rat stomach,mouse stomach,rat testis,rat spleen; rat spleen,mouse pancreas,mouse spleen
2. Human ovarian cancer,human endometrial cancer,human stomach cancer,human pancreas cancer,human breast cancer

### Positive tissues for IF:

1. Rat brain(used for optimization with 3 concentrations of primary antibody)

### Positive tissues for IF (experimental verification):

1. Rat cerebellum,mouse brain, rat stomach
2. Human breast cancer,human endometrial cancer,human pancreatic 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-MSI1 Antibody (A05052-1), Concentrations tested: 1µg/mL, 2.5µg/mL, 25µg/mL.
2. EDTA Buffer (pH 8.0, Epitope Retrieval Solution): Used for heat-mediated antigen retrieval.
3. Inactivation:3% H<sub>2</sub>O<sub>2</sub> 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

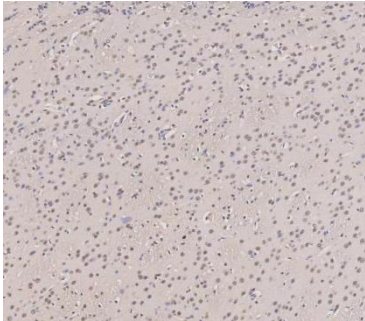
### Immunohistochemistry:

Protocol reference

[Click to view](#)

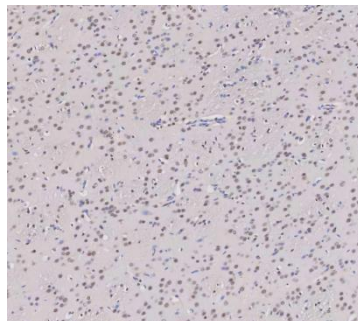
## IHC Optimization

Rat brain tissue embedded in FFPE is used to optimize the concentration and incubation time for the antibody. 3 concentrations of rabbit anti-MSI1 Antibody (A05052-1) were used to incubate. 1µg/mL, 2.5µg/mL, 25µg/mL overnight at 4°C. The results are as follows:



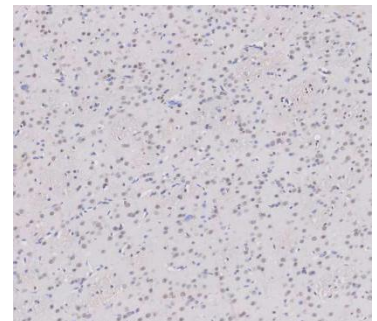
**Antigen Retrieval:** Heat  
**Primary ab:** 25µg/mL  
**Incubation:** 4°C overnight  
**Imaging:** Brightfield

[View Original Image](#) →



**Antigen Retrieval:** Heat  
**Primary ab:** 2.5µg/mL  
**Incubation:** 4°C overnight  
**Imaging:** Brightfield

[View Original Image](#) →



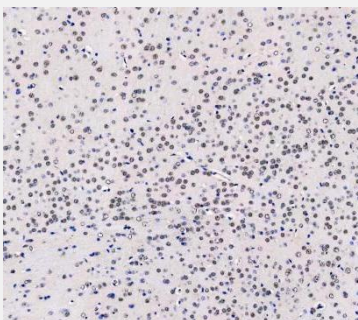
**Antigen Retrieval:** Heat  
**Primary ab:** 1µg/mL  
**Incubation:** 4°C overnight  
**Imaging:** Brightfield

[View Original Image](#) →

An in-house certified pathologist reviewed the result images and recommended the medium condition (2.5µg/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:

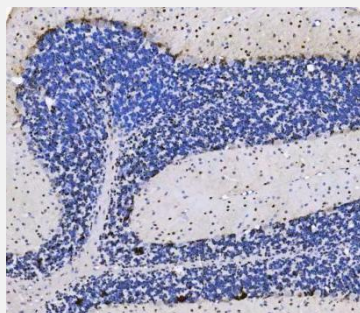
### Normal tissues



#### Mouse brain

**Expected:** medium level  
**Observed:** high level

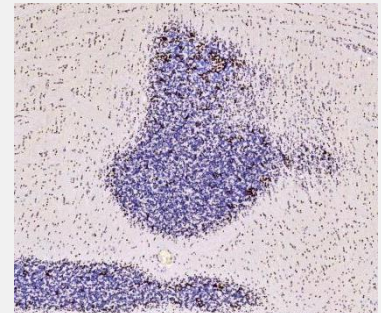
[View Original Image](#) →



#### Mouse cerebellum

**Expected:** medium level  
**Observed:** high level

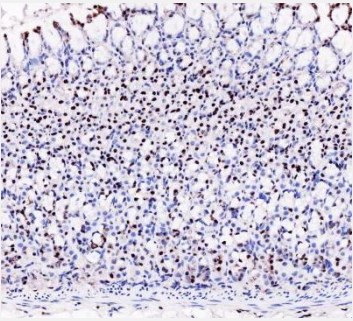
[View Original Image](#) →



#### Rat cerebellum

**Expected:** medium level  
**Observed:** high level

[View Original Image](#) →

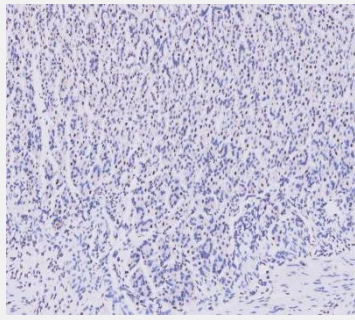


### Rat stomach

**Expected:** medium level

**Observed:** high level

[View Original Image](#) →

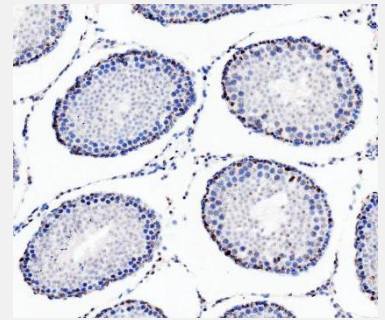


### Mouse stomach

**Expected:** medium level

**Observed:** high level

[View Original Image](#) →

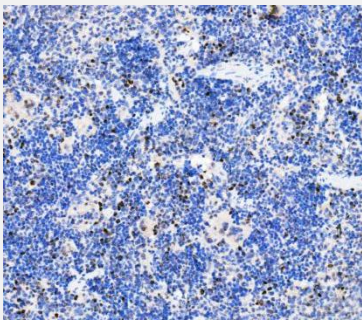


### Rat testis

**Expected:** low level

**Observed:** high level

[View Original Image](#) →

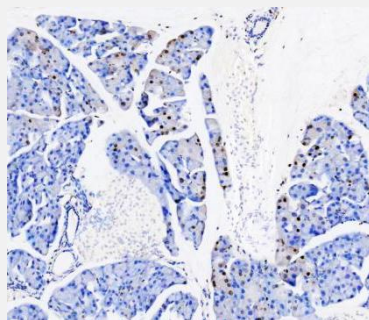


### Rat spleen

**Expected:** low level

**Observed:** high level

[View Original Image](#) →

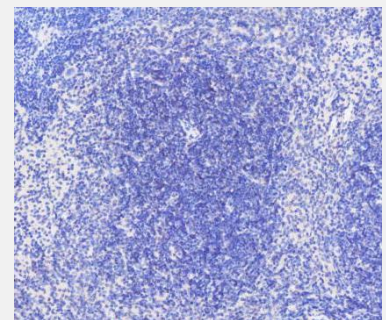


### Mouse pancreas

**Expected:** low level

**Observed:** medium level

[View Original Image](#) →



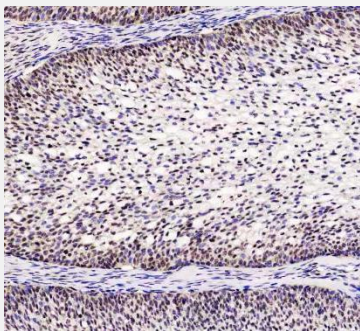
### Mouse spleen

**Expected:** low level

**Observed:** low level

[View Original Image](#) →

## Cancerous tissues

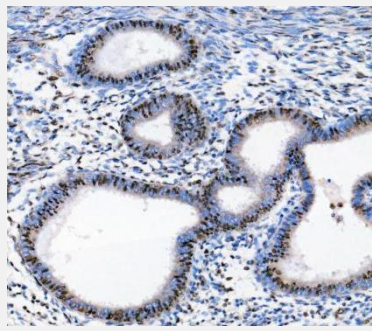


### Human ovarian cancer

**Expected:** low level

**Observed:** high expression

[View Original Image](#) →

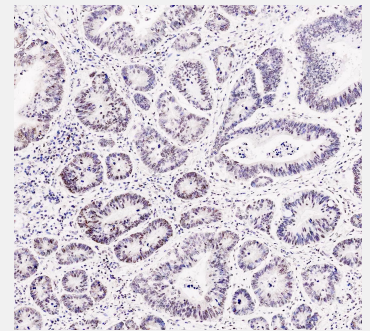


### Human endometrial cancer

**Expected:** low level

**Observed:** high level

[View Original Image](#) →

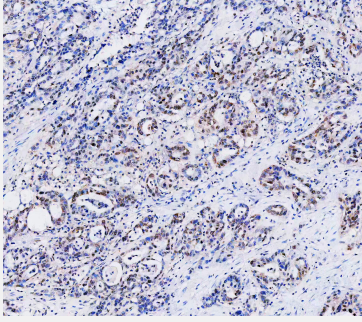


### Human stomach cancer

**Expected:** low level

**Observed:** high level

[View Original Image](#) →

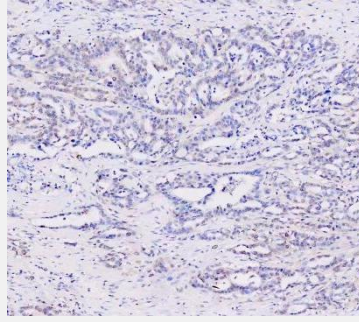


#### Human pancreatic cancer

**Expected:** low level

**Observed:** high level

[View Original Image →](#)

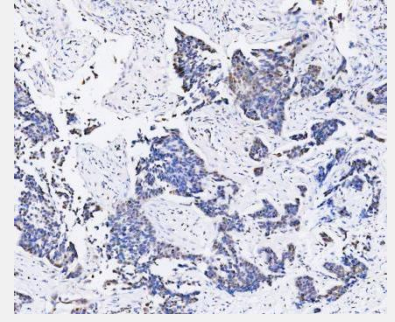


#### Human pancreatic cancer

**Expected:** low level

**Observed:** high level

[View Original Image →](#)



#### Human breast cancer

**Expected:** low level

**Observed:** high level

[View Original Image →](#)

Tissue staining expectation reference

[Click to view](#)

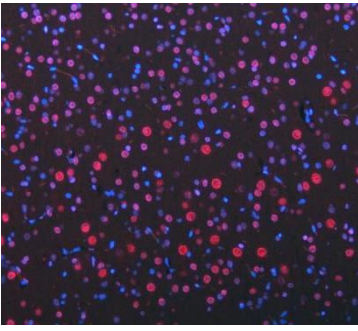
## IHC scoring

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

1. IHC stains in the selected tissues are consistent with RNA expression 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 rat brain is used to optimize the concentration and incubation time for the antibody. 3 concentrations of rabbit anti-MSI1 Antibody (A05052-1) were used to incubate. 1µg/mL, 2.5µg/mL, 25µg/mL overnight at 4°C. The results are as follows:



**Rat brain**

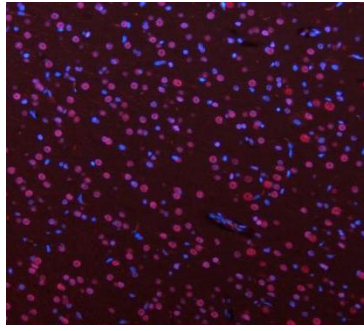
**Primary ab:** 25µg/mL

**Incubation:** 4°C overnight

**Secondary:** BA1142

**Imaging:** Fluorescent  
Microscopy

[View Original Image →](#)



**Rat brain**

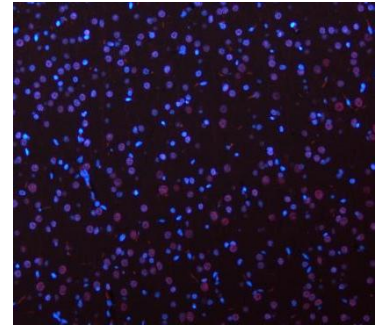
**Primary ab:** 2.5µg/mL

**Incubation:** 4°C overnight

**Secondary:** BA1142

**Imaging:** Fluorescent  
Microscopy

[View Original Image →](#)



**Rat brain**

**Primary ab:** 1µg/mL

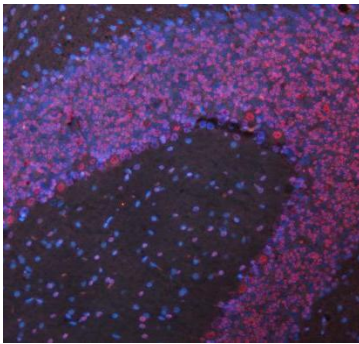
**Incubation:** 4°C overnight

**Secondary:** BA1142

**Imaging:** Fluorescent  
Microscopy

[View Original Image →](#)

An in house certified pathologist reviewed the result images recommended the medium condition (25µg/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.

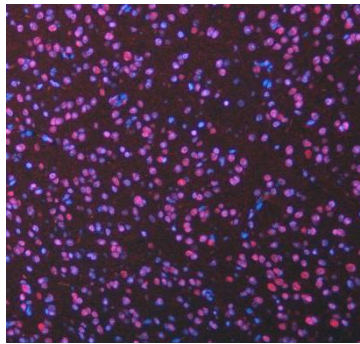


**Rat cerebellum**

**Expected:** medium level

**Observed:** high level

[View Original Image →](#)

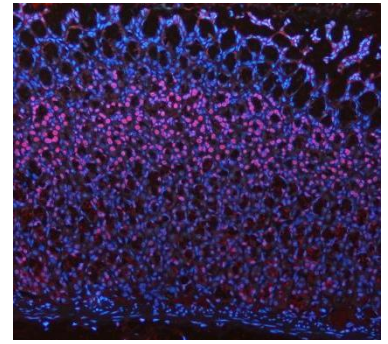


**Mouse brain**

**Expected:** medium level

**Observed:** high level

[View Original Image →](#)

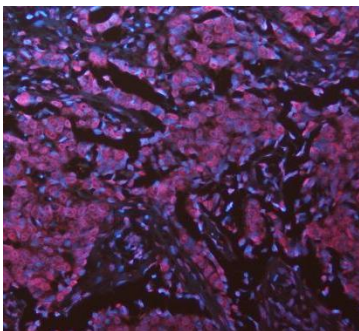


**Rat stomach**

**Expected:** medium level

**Observed:** high level

[View Original Image →](#)

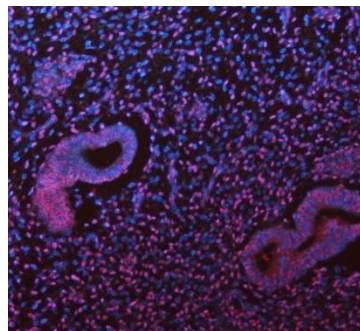


**Human breast cancer**

**Expected:** low level

**Observed:** high level

[View Original Image →](#)

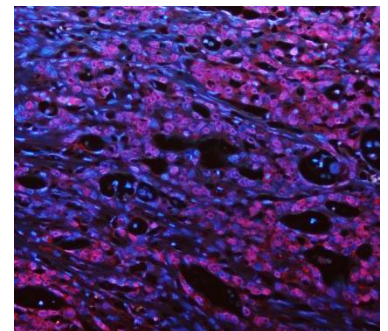


**Human endometrial cancer**

**Expected:** low level

**Observed:** high level

[View Original Image →](#)



**Human pancreatic cancer**

**Expected:** low level

**Observed:** high 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 expression 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 1993. 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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