

For Research Use Only

# ACTN2 Polyclonal antibody

Catalog Number: 14221-1-AP

21 Publications



## Basic Information

### Catalog Number:

14221-1-AP

### Concentration:

650 ug/ml

### Source:

Rabbit

### Isotype:

IgG

### Immunogen Catalog Number:

AG5459

### GenBank Accession Number:

BC051770

### GeneID (NCBI):

88

### UNIPROT ID:

P35609

### Full Name:

actinin, alpha 2

### Calculated MW:

104 kDa

### Observed MW:

103 kDa

### Purification Method:

Antigen affinity purification

### Recommended Dilutions:

WB 1:5000-1:50000

IP 0.5-4.0 ug for 1.0-3.0 mg of total protein lysate

IHC 1:500-1:2000

IF-P 1:200-1:800

IF-Fro 1:200-1:800

IF/ICC 1:50-1:500

## Applications

### Tested Applications:

WB, IHC, IF/ICC, IF-P, IF-Fro, IP, ELISA

### Cited Applications:

WB, IHC, IF

### Species Specificity:

human, mouse, rat

### Cited Species:

human, mouse, rat, chicken

**Note-IHC: suggested antigen retrieval with TE buffer pH 9.0; (\*) Alternatively, antigen retrieval may be performed with citrate buffer pH 6.0**

### Positive Controls:

**WB**: mouse brain tissue, C2C12 cells, mouse lung tissue, mouse skeletal muscle tissue, mouse heart, mouse kidney, rat skeletal muscle

**IP**: HeLa cells,

**IHC**: mouse heart tissue, mouse skeletal muscle tissue

**IF-P**: mouse heart tissue,

**IF-Fro**: mouse heart tissue,

**IF/ICC**: C2C12 cells, NIH/3T3 cells, Human iPSC derived cardiomyocyte

## Background Information

Alpha actinin 2 (ACTN2) belongs to the alpha-actinin family and is expressed in both skeletal and cardiac muscles and functions to anchor myofibrillar actin thin filaments and titin to Z-discs (PMID: 30701273). ACTN2 is an actin-binding protein with multiple roles in different cell types. In nonmuscle cells, the cytoskeletal isoform is found along microfilament bundles and adherens-type junctions, where it is involved in binding actin to the membrane. In contrast, skeletal, cardiac, and smooth muscle isoforms are localized to the Z disc and analogous dense bodies, where they help anchor the myofibrillar actin filaments. Mutations in ACTN2 are associated with hypertrophic cardiomyopathy, as well as dilated cardiomyopathy and endocardial fibroelastosis (PMID: 20022194, 14567970).

## Notable Publications

| Author         | Pubmed ID | Journal               | Application |
|----------------|-----------|-----------------------|-------------|
| Xueling He     | 28969971  | Prog Biophys Mol Biol | WB          |
| Maike Schuldt  | 33148509  | J Mol Cell Cardiol    | IF          |
| Qianqian Liang | 36413948  | Dev Cell              | IF          |

## Storage

### Storage:

Store at -20°C. Stable for one year after shipment.

### Storage Buffer:

PBS with 0.02% sodium azide and 50% glycerol, pH7.3

Aliquoting is unnecessary for -20°C storage

For technical support and original validation data for this product please contact:

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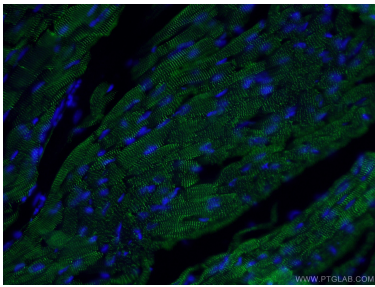
W: ptgcn.com

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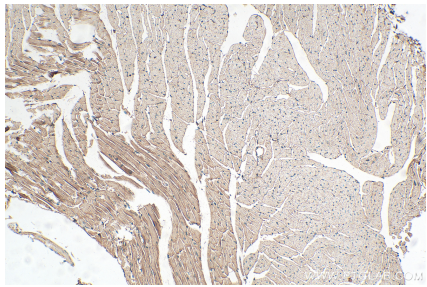
Selected Validation Data



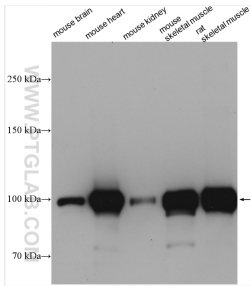
Human iPSC derived cardiomyocyte in 2D culture, with alpha actinin (14221-1-AP) and DAPI. Image courtesy of Chandan Kadir Nagaraju, Experimental Cardiology, KU Leuven, Belgium.



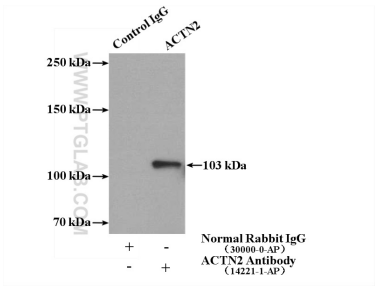
Immunofluorescent analysis of (4% PFA) fixed mouse heart tissue using 14221-1-AP (ACTN2 antibody) at dilution of 1:400 and Alexa Fluor 488-Conjugated AffiniPure Goat Anti-Rabbit IgG(H+L).



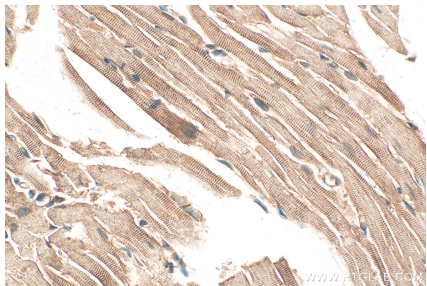
Immunohistochemical analysis of paraffin-embedded mouse heart tissue slide using 14221-1-AP (ACTN2 antibody) at dilution of 1:1000 (under 10x lens). Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0).



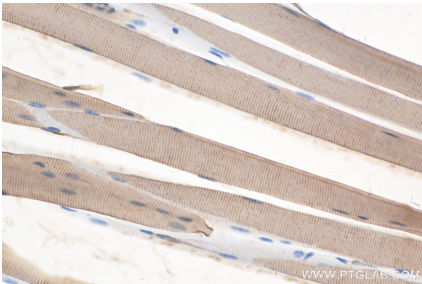
Various lysates were subjected to SDS PAGE followed by western blot with 14221-1-AP (ACTN2 antibody) at dilution of 1:30000 incubated at room temperature for 1.5 hours.



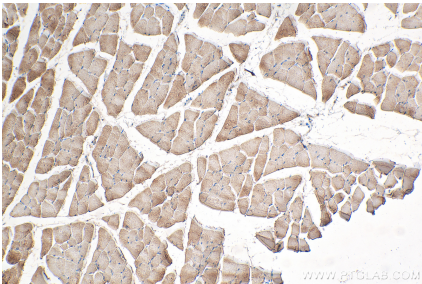
IP result of anti-ACTN2 (IP:14221-1-AP, 4ug; Detection:14221-1-AP 1:1000) with HeLa cells lysate 1080ug.



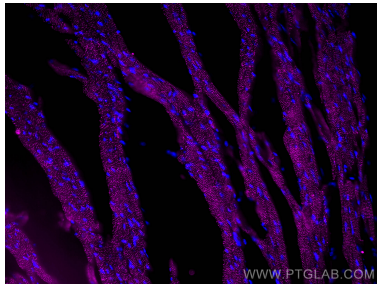
Immunohistochemical analysis of paraffin-embedded mouse heart tissue slide using 14221-1-AP (ACTN2 antibody) at dilution of 1:1000 (under 40x lens). Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0).



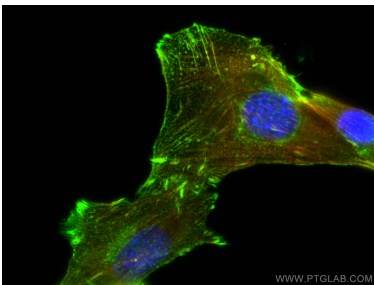
Immunohistochemical analysis of paraffin-embedded mouse skeletal muscle tissue slide using 14221-1-AP (ACTN2 antibody) at dilution of 1:1000 (under 40x lens). Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0).



Immunohistochemical analysis of paraffin-embedded mouse skeletal muscle tissue slide using 14221-1-AP (ACTN2 antibody) at dilution of 1:1000 (under 10x lens). Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0).



Immunofluorescent analysis of (4% PFA) fixed frozen OCT-embedded mouse heart tissue using 14221-1-AP (ACTN2 antibody) at dilution of 1:400.



Immunofluorescent analysis of (-20°C Ethanol)  
fixed C2C12 cells using ACTN2 antibody (14221-1-  
AP) at dilution of 1:200 and CoraLite®488-  
Conjugated AffiniPure Goat Anti-Rabbit IgG(H+L),  
594phalloidin (red).