

ZYMED® Laboratories

invitrogen immunodetection

Qty: 100 µg/400 µL

Rabbit anti- PA28 γ (N-term)

Catalog No. 38-3800

Lot No.

Rabbit anti- PA28 γ (N-term)

FORM

This polyclonal antibody is supplied as a 400 µL aliquot at a concentration of 0.25 mg/mL in phosphate buffered saline (pH 7.4) containing 0.1% sodium azide. This antibody is epitope-affinity purified from rabbit antiserum.

PAD: ZMD.371

IMMUNOGEN

Synthetic peptide derived from the N-terminal region of the human, mouse, rat and pig PA28 γ (proteasome activator 28 γ , Ki antigen) protein.

SPECIFICITY

This antibody reacts with the N-terminal region of the human PA28 γ protein. On Western blots, it identifies the target band at ~30 kDa.

REACTIVITY

Reactivity has been confirmed with human MeWo malignant melanoma, A375 malignant melanoma, Jurkat T-lymphocyte leukemia, HeLa cervical carcinoma, and HL-60 acute myeloid leukemia cell lysates. Based on 100% amino acid conservation at the immunogen sequence, reactivity with mouse, rat, and pig PA28 γ is also expected.

| Sample | Western Blotting | Immuno-precipitation |
|--------|------------------|----------------------|
| Human | +++ | ++ |
| Mouse | ND | ND |
| Rat | ND | ND |
| Pig | ND | ND |

(Excellent +++, Good++, Poor +, No reactivity 0, Not applicable N/A, Not Determined ND)

USAGE

Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

Immunoprecipitation: 7 µg/reaction

Western Blotting: 1-3 µg/mL

STORAGE

Store at 2-8°C for up to one month. Store at -20°C for long-term storage. Avoid repeated freezing and thawing.

(cont'd)

www.invitrogen.com

Invitrogen Corporation • 1600 Faraday Avenue • Carlsbad • CA 92008 • Tel: 800.955.6288 • E-mail: tech_support@invitrogen.com

PIN: 31655

Rev. 1/07

DCC-06-0084

Copyright 2005, Zymed Laboratories

BACKGROUND

Proteasome activator 28 (PA28), also known as 11S regulator, is composed of two homologous subunits, alpha (α) and beta (β), that share ~ 50% amino acid identity.¹ A separate but related protein, PA28gamma, was originally identified as Ki antigen from sera of patients with systemic lupus erythematosus.¹⁻³ PA28 α and PA28 β are located primarily in the cytoplasm, whereas PA28 γ is located in the nucleus.^{4,5} PA28 binds to the outer rings on both ends of the 20S proteasome to form a football-like structure.^{6,7} Binding of PA28 greatly stimulates multiple peptidase activities of the 20S proteasome in an ATP-independent reaction, but lacks the ability to degrade large protein substrates, suggesting that PA28 may cooperate with the 26 S proteasome in a sequential proteolytic pathway.^{8,9}

In addition to its nuclear localization, PA28 γ differs from PA28 α and PA28 β in that it is not responsive to stimulation with IFN- γ .¹⁰ Experiments with mice lacking the PA28 γ gene (*Psme3*) demonstrate that PA28 γ may be involved in cell cycle control; although PA28 γ is not essential for development, its absence causes retardation of cell proliferation and body growth.¹⁰ Abnormally high expression of PA28 γ has been observed in thyroid cancer, particularly in regions of cancer cells where growth rate is accelerated.¹¹ PA28 γ interacts directly with Hepatitis C virus (HCV) core protein, which becomes retained in the cell's nucleus,¹² and with MEKK3, which phosphorylates PA28 γ and increases its cellular levels.¹³

REFERENCES

1. Ahn JY, et al. *FEBS Lett* 366:37-42,1995.
2. Nikaido T, et al. *Clin Exp Immunol* 79:209-214,1990.
3. Tanahashi N, et al. *Genes Cells* 2:195-211,1997.
4. Soza A, et al. *FEBS Lett* 413:27-34,1997.
5. Wojcik C, et al. *Eur J Cell Biol* 77:151-160,1998.
6. Baumeister W, et al. *Cell* 92:367-380,1998.
7. Gray CW, et al. *J Mol Biol* 236:7-15,1994.
8. Groll M, et al. *Nature* 386:463-471,1997.
9. Ma CP, et al. *J Biol Chem* 267:10515-10523,1992.
10. Murata S, et al. *J Biol Chem* 274(53):38211-38215,1999.
11. Okamura T, et al. *J Clin Endocrinol Metab* 88:1374-1383,2003.
12. Moriishi K, et al. *J Virol* 77:10237-10249,2003.
13. Hagemann C, et al. *Biochem J* 373:71-79,2003.

RELATED PRODUCTS

| Product | Conjugate | Cat. No. |
|----------------|------------------|-----------------|
| Protein A | Sepharose® 4B | 10-1041 |
| rec-Protein G | Sepharose® 4B | 10-1241 |

| Conjugate | ZyMAX™ Goat x Rabbit IgG (H+L) | ZyMAX™ Goat x Mouse IgG (H+L) |
|------------------|---------------------------------------|--------------------------------------|
| Purified | 81-6100 | 81-6500 |
| FITC | 81-6111 | 81-6511 |
| TRITC | 81-6114 | 81-6514 |
| Cy™3 | 81-6115 | 81-6515 |
| Cy™5 | 81-6116 | 81-6516 |
| HRP | 81-6120 | 81-6520 |
| AP | 81-6122 | 81-6522 |
| Biotin | 81-6140 | 81-6540 |

Zymed® and ZyMAX™ are trademarks of Zymed Laboratories Inc. Cy™ and Sepharose® are trademarks of Amersham Biosciences Ltd.

For Research Use Only

TM040524