

Parafibromin (C-17): sc-46224

BACKGROUND

Parathyroid tumors are heterogeneous and diagnosis of the disease is often difficult. The Parafibromin protein may be important as a marker for diagnosing parathyroid carcinoma. Parafibromin is encoded by the endocrine tumor suppressor gene CDC73 (cell division cycle 73, Paf1/RNA polymerase II complex component), alternatively known as the HRPT2 (hyperparathyroidism-jaw tumor syndrome 2) gene. The human CDC73 gene, which maps to chromosome 1q25, is the human homolog of *Saccharomyces cerevisiae* Cdc73 and is responsible for the hyperparathyroidism with jaw tumor syndrome (HPT-JT). Parafibromin is part of the RNA polymerase II/Paf1 complex, which is crucial for histone modification. This Parafibromin complex binds to both the non-phosphorylated forms and the Ser 2 and Ser 5 phosphorylated forms of the RNA polymerase II large subunit.

REFERENCES

1. Simonds, W.F., Robbins, C.M., Agarwal, S.K., Hendy, G.N., Carpten, J.D. and Marx, S.J. 2004. Familial isolated hyperparathyroidism is rarely caused by germline mutation in HRPT2, the gene for the hyperparathyroidism-jaw tumor syndrome. *J. Clin. Endocrinol. Metab.* 89: 96-102.
2. Cavaco, B.M., Guerra, L., Bradley, K.J., Carvalho, D., Harding, B., Oliveira, A., Santos, M.A., Sobrinho, L.G., Thakker, R.V. and Leite, V. 2004. Hyperparathyroidism-jaw tumor syndrome in Roma families from Portugal is due to a founder mutation of the HRPT2 gene. *J. Clin. Endocrinol. Metab.* 89: 1747-1752.
3. Cetani, F., Pardi, E., Borsari, S., Viacava, P., Dipollina, G., Cianferotti, L., Ambrogini, E., Gazzero, E., Colussi, G., Berti, P., Miccoli, P., Pinchera, A. and Marcocci, C. 2004. Genetic analyses of the HRPT2 gene in primary hyperparathyroidism: germline and somatic mutations in familial and sporadic parathyroid tumors. *J. Clin. Endocrinol. Metab.* 89: 5583-5591.
4. Haven, C.J., Howell, V.M., Eilers, P.H., Dunne, R., Takahashi, M., van Puijenbroek, M., et al. 2004. Gene expression of parathyroid tumors: molecular subclassification and identification of the potential malignant phenotype. *Cancer Res.* 64: 7405-7411.
5. Tan, M.H. and Teh, B.T. 2004. Loss of Parafibromin immunoreactivity is a distinguishing feature of parathyroid carcinoma. *Clin. Cancer Res.* 10: 6629-6637.
6. Rozenblatt-Rosen, O., Hughes, C.M., Nannepaga, S.J., Shanmugam, K.S., Copeland, T.D., Guszczynski, T., Resau, J.H. and Meyerson, M. 2005. The Parafibromin tumor suppressor protein is part of a human Paf1 complex. *Mol. Cell. Biol.* 25: 612-620.

CHROMOSOMAL LOCATION

Genetic locus: CDC73 (human) mapping to 1q31.2.

SOURCE

Parafibromin (C-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Parafibromin of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-46224 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Parafibromin (C-17) is recommended for detection of Parafibromin of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Parafibromin (C-17) is also recommended for detection of Parafibromin in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Parafibromin siRNA (h): sc-45528, Parafibromin shRNA Plasmid (h): sc-45528-SH and Parafibromin shRNA (h) Lentiviral Particles: sc-45528-V.

Molecular Weight of Parafibromin: 60 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or C32 whole cell lysate: sc-2205.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



Try **Parafibromin (2H1): sc-33638** or **Parafibromin (A-8): sc-271877**, our highly recommended monoclonal alternatives to Parafibromin (C-17). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Parafibromin (2H1): sc-33638**.