

Parafibromin (E-4): sc-373792

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 1q31.2, 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., et al. 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., et al. 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., et al. 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., 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., et al. 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; Cdc73 (mouse) mapping to 1 F.

SOURCE

Parafibromin (E-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 253-297 within an internal region of Parafibromin of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-373792 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Parafibromin (E-4) is recommended for detection of Parafibromin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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 (E-4) is also recommended for detection of Parafibromin in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Parafibromin siRNA (h): sc-45528, Parafibromin siRNA (m): sc-45529, Parafibromin shRNA Plasmid (h): sc-45528-SH, Parafibromin shRNA Plasmid (m): sc-45529-SH, Parafibromin shRNA (h) Lentiviral Particles: sc-45528-V and Parafibromin shRNA (m) Lentiviral Particles: sc-45529-V.

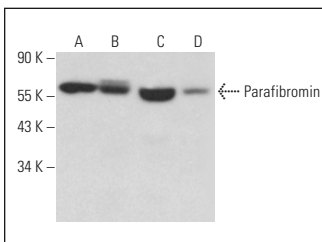
Molecular Weight of Parafibromin: 60 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, HeLa whole cell lysate: sc-2200 or A-10 cell lysate: sc-3806.

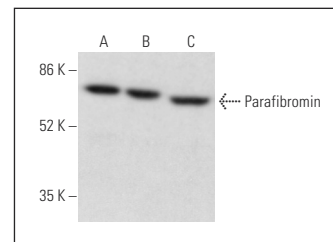
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Parafibromin (E-4): sc-373792. Western blot analysis of Parafibromin expression in HeLa nuclear extract (A) and SK-BR-3 (B), MOLT-4 (C) and A-10 (D) whole cell lysates.



Parafibromin (E-4): sc-373792. Western blot analysis of Parafibromin expression in HeLa nuclear extract (A) and HeLa (B) and MDA-MB-231 (C) whole cell lysates.

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.