SANTA CRUZ BIOTECHNOLOGY, INC.

QDPR (K-15): sc-104633

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The Power to Question

BACKGROUND

QDPR (quinoid dihydropteridine reductase), also known as DHPR (dihydropteridine reductasae) or PKU2, is a member of the short-chain dehydrogenases/reductase (SDR) family of enzymes. Functioning as a homodimer, QDPR plays an important role in the recycling of tetrahydrobiopterin (BH4), an essential cofactor for the hydroxylation of the aromatic amino acids (tryptophan, tyrosine and phenylalanine). More specifically, QDPR catalyzes the regeneration of BH4 from quinonoid dihydrobiopterin (qBH2), the product generated from the hydroxylation reactions. Mutations in the gene encoding QDPR can lead to phenylketonuria II (also called PK2 or dihydropteridine reductase deficiency), a disorder resulting from the depletion of dopamine, epinephrine and serotonin due to defective recycling of BH4. Symptoms of PK2 include hyperphenylalaninemia, axial hypotonia, truncal hypertonia, microcephaly and abnormal thermogenesis.

REFERENCES

1. Brown, R.M., et al. 1987. Localization of the human dihydropteridine reductase gene to band p15.3 of chromosome 4 by *in situ* hybridization. Genomics 1: 67-70.
2. MacDonald, M.E., et al. 1987. Physical and genetic localization of quinonoid dihydropteridine reductase gene (QDPR) on short arm of chromosome 4. Somat. Cell Mol. Genet. 13: 569-574.
3. Dianzani, I., et al. 1993. Two new mutations in the dihydropteridine reductase gene in patients with tetrahydrobiopterin deficiency. J. Med. Genet. 30: 465-469.
4. Dianzani, I., et al. 1998. Dihydropteridine reductase deficiency: physical structure of the QDPR gene, identification of two new mutations and genotype-phenotype correlations. Hum. Mutat. 12: 267-273.
5. Romstad, A., et al. 2000. Molecular analysis of 16 Turkish families with DHPR deficiency using denaturing gradient gel electrophoresis (DGGE). Hum. Genet. 107: 546-553.
6. Kalkanoglu, H.S., et al. 2001. Evaluation of a fetus at risk for dihydropteridine reductase deficiency by direct mutation analysis using denaturing gradient gel electrophoresis. Prenat. Diagn. 21: 868-870.

CHROMOSOMAL LOCATION

Genetic locus: QDPR (human) mapping to 4p15.32; Qdpr (mouse) mapping to 5 B3.

SOURCE

QDPR (K-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of QDPR 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-104633 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

QDPR (K-15) is recommended for detection of QDPR of mouse, rat and 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).

QDPR (K-15) is also recommended for detection of QDPR in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for QDPR siRNA (h): sc-89106, QDPR siRNA (m): sc-106467, QDPR shRNA Plasmid (h): sc-89106-SH, QDPR shRNA Plasmid (m): sc-106467-SH, QDPR shRNA (h) Lentiviral Particles: sc-89106-V and QDPR shRNA (m) Lentiviral Particles: sc-106467-V.

Molecular Weight of QDPR: 26 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209 or K-562 whole cell lysate: sc-2203.

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.