SANTA CRUZ BIOTECHNOLOGY, INC.

QDPR (B-1): sc-376218

SANTA CRUZ BIOTECHNOLOGY

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.

CHROMOSOMAL LOCATION

Genetic locus: QDPR (human) mapping to 4p15.32.

SOURCE

QDPR (B-1) is a mouse monoclonal antibody raised against amino acids 11-244 mapping at the C-terminus of QDPR of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

QDPR (B-1) is available conjugated to agarose (sc-376218 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376218 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376218 PE), fluorescein (sc-376218 FITC), Alexa Fluor® 488 (sc-376218 AF488), Alexa Fluor® 546 (sc-376218 AF546), Alexa Fluor® 594 (sc-376218 AF594) or Alexa Fluor® 647 (sc-376218 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376218 AF680) or Alexa Fluor® 790 (sc-376218 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

QDPR (B-1) is recommended for detection of QDPR of 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).

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

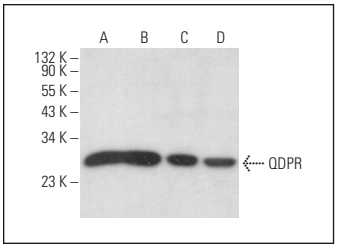
Molecular Weight of QDPR: 26 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, Hep G2 cell lysate: sc-2227 or K-562 whole cell lysate: sc-2203.

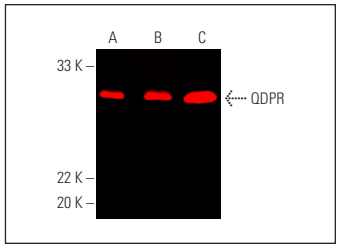
RECOMMENDED SUPPORT REAGENTS

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



QDPR (B-1): sc-376218. Western blot analysis of QDPR expression in K-562 (**A**), Hep G2 (**B**), HeLa (**C**) and Jurkat (**D**) whole cell lysates.



QDPR (B-1): sc-376218. Near-infrared western blot analysis of QDPR expression in K-562 (**A**), HL-60 (**B**) and Hep G2 (**C**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 790: sc-516181.

SELECT PRODUCT CITATIONS

1. Zheng, Y., et al. 2018. Mitochondrial one-carbon pathway supports cytosolic folate integrity in cancer cells. Cell 175: 1546-1560.e17.

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.