

PTPS (h): 293 Lysate: sc-111356

BACKGROUND

The tetrahydrobiopterin (BH4) cofactor is essential for hepatic hydroxylase, which is involved in phenylalanine degradation and catecholamine and serotonin biosynthesis. BH4 is also an essential and limiting cofactor for all types of nitric oxide synthase. BH4 deficiency results in hyperphenylalaninemia and monoamine neurotransmitter depletion and is most commonly due to autosomal recessive mutation in 6-pyruvoyltetrahydropterin synthase (PTPS), the second enzyme for BH4 biosynthesis. The active site of PTPS consists of the pterin-anchoring Glu A107 neighbored by two catalytic motifs: a Zn(II) binding site and an intersubunit catalytic triad formed by Cys A42, Asp B88 and His B89. The active site of PTPS undergoes a Zn and Mg-dependent reaction that includes a triphosphate elimination, a stereospecific reduction and the oxidation of both side hydroxyl groups. The catalytic triad of PTPS is involved in the deprotonation of the side-chain carbons of substrates. In addition, Ser 19 of human PTPS may be a substrate for cGMP-dependent protein kinase type II phosphorylation *in vivo*, which is essential for normal activity of PTPS.

REFERENCES

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CHROMOSOMAL LOCATION

Genetic locus: PTS (human) mapping to 11q23.1.

PRODUCT

PTPS (h): 293 Lysate represents a lysate of human PTPS transfected 293 cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

PTPS (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive PTPS antibodies. Recommended use: 10-20 μ l per lane.

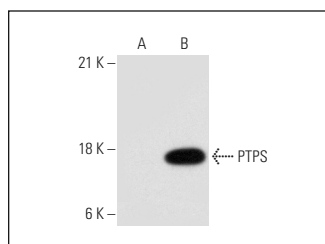
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

PTPS (D-8): sc-514628 is recommended as a positive control antibody for Western Blot analysis of enhanced human PTPS expression in PTPS transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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.

DATA



PTPS (D-8): sc-514628. Western blot analysis of PTPS expression in non-transfected: sc-110760 (A) and human PTPS transfected: sc-111356 (B) 293 whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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 for detailed protocols and support products.