

GCH-I (FL-250): sc-134574

BACKGROUND

GTP cyclohydrolase I (GCH-I), a homodecamer, catalyzes the conversion of GTP into dihydroneopterin triphosphate and folate. GCH-I is the first and rate limiting enzyme in tetrahydrobiopterin (BH4) biosynthesis. BH4 is the cofactor for tyrosine hydroxylase, a rate-limiting enzyme for dopamine synthesis and tryptophan hydroxylase, the rate-limiting enzyme for serotonin biosynthesis. Dopamine and serotonin are neurotransmitters involved in depression, which may be associated with a deficiency of BH4. Mutations in the gene encoding GCH-I cause malignant hyperphenylalaninemia, a genetic neurological disorder characterized by abnormally high levels of serum phenylalanine, and dopa-responsive dystonia (DRD), a group of movement disorders characterized by a progressive difficulty in walking which respond to L-dopa.

REFERENCES

1. Maita, N., et al. 2002. Crystal structure of the stimulatory complex of GTP cyclohydrolase I and its feedback regulatory protein GFRP. Proc. Nat. Acad. Sci. USA 99: 1212-1217.
2. Basset, G., et al. 2002. Folate synthesis in plants: the first step of the pterin branch is mediated by a unique bimodular GTP cyclohydrolase I. Proc. Nat. Acad. Sci. USA 99: 12489-12494.

CHROMOSOMAL LOCATION

Genetic locus: GCH1 (human) mapping to 14q22.2; Gch1 (mouse) mapping to 14 C1.

SOURCE

GCH-I (FL-250) is a rabbit polyclonal antibody raised against amino acids 1-250 representing full length GCH-I 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.

APPLICATIONS

GCH-I (FL-250) is recommended for detection of GCH-I isoforms GCH-1, GCH-2, GCH-3 and GCH-4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

GCH-I (FL-250) is also recommended for detection of GCH-I isoforms GCH-1, GCH-2, GCH-3 and GCH-4 in additional species, including canine and bovine.

Suitable for use as control antibody for GCH-I siRNA (h): sc-60675, GCH-I siRNA (m): sc-60676, GCH-I shRNA Plasmid (h): sc-60675-SH, GCH-I shRNA Plasmid (m): sc-60676-SH, GCH-I shRNA (h) Lentiviral Particles: sc-60675-V and GCH-I shRNA (m) Lentiviral Particles: sc-60676-V.

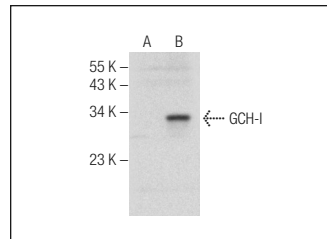
Molecular Weight of GCH-I: 26 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409 or GCH-I (m): 293T Lysate: sc-120450.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



GCH-I (FL-250): sc-134574. Western blot analysis of GCH-I expression in non-transfected: sc-117752 (A) and mouse GCH-I transfected: sc-120450 (B) 293T 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.

PROTOCOLS

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

MONOS
Satisfaction
Guaranteed

Try **GCH-I (G-8): sc-376483** or **GCH-I (C-4): sc-271482**, our highly recommended monoclonal alternatives to GCH-I (FL-250).