**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.

**CHROMOSOMAL LOCATION**

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

**SOURCE**

GCH-I (C-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 210-238 at the C-terminus of GCH-I of human origin.

**PRODUCT**

Each vial contains 200 µg IgGκ 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-271482 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

**STORAGE**

Store at 4° C, “**DO NOT FREEZE**”. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

**APPLICATIONS**

GCH-I (C-4) is recommended for detection of GCH-I isoform GCH-I only 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:100-1:3000).

GCH-I (C-4) is also recommended for detection of GCH-I isoform GCH-I only in additional species, including canine.

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 SUPPORT REAGENTS**

To ensure optimal results, the following support reagents are recommended:


**DATA**

![Western blot analysis of GCH-I expression in non-transfected](Image)

![Immunoperoxidase staining of squamous epithelial cells showing cytoplasmic staining of](Image)

**SELECT PRODUCT CITATIONS**


**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.