**BACKGROUND**

Guanylate cyclases belong to the adenylyl cyclase class-4/guanylyl cyclase family. There are two forms of guanylate cyclase: The soluble form, known as GCS or sGC, acts as receptors for nitric oxide (NO). The membrane-bound receptor form, known as GCS, are peptide hormone receptors. GCS is a cGMP-synthesizing enzyme, which is the major receptor for the neurotransmitter nitric oxide. It plays a crucial role in smooth muscle contractility, platelet reactivity and neurotransmission. GCS is a heme-containing heterodimer, consisting of one α subunit and one β subunit. The heme moiety mediates NO activation, and this heme group also binds carbon monoxide (CO), which weakly stimulates the enzyme. Both NO and CO stimulation are enhanced by the allosteric activator 3-(5'-hydroxymethyl-2'furyl)-benzyl-indazole, YC-1. YC-1 can also stimulate GCS in a NO-independent manner. Both α and β subunits are required for cGMP generation, and at least two isoforms exist for each subunit. Heterodimers consisting of α-1/β-1 and α-2/β-1 have been identified, and both display similar enzymatic activity. The distribution of the β-2 subunit seems to be much more restricted than the β-1 subunit, with predominant expression in kidney and liver.

**REFERENCES**


**CHROMOSOMAL LOCATION**

Genetic locus: GUCY1A2 (human) mapping to 11q21-q22; Gucy1a2 (mouse) mapping to 9 A1.

**SOURCE**

GCS-α-2 (H-190) is a rabbit polyclonal antibody raised against amino acids 1-190 of GCS-α-2 of human origin.

**STORAGE**

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

**PRODUCT**

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

**APPLICATIONS**

GCS-α-2 (H-190) is recommended for detection of GCS-α-2 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 and 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 1:30-1:3000).

GCS-α-2 (H-190) is also recommended for detection of GCS-α-2 in additional species, including bovine.


Molecular Weight of GCS-α-2: 82 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, Hep G2 cell lysate: sc-2227 or human small intestine.

**DATA**

**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.