

# Glycogenin-2 (K-14): sc-161666

## BACKGROUND

Glycogenin-2, also known as GYG2 or GN2, is a 501 amino acid protein that belongs to the glycogenin family and exists as 6 alternatively spliced isoforms, designated  $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\delta$ ,  $\epsilon$  and  $\zeta$ . Preferentially expressed in heart, pancreas and liver, Glycogenin-2 functions as a homodimer that uses divalent metal ions as cofactors to catalyze self-glucosylation, thereby producing an oligosaccharide primer that serves as a substrate for glycogen synthase and is thought to regulate glycogen accumulation within the cell. The gene encoding Glycogenin-2 maps to human chromosome X, which contains nearly 153 million base pairs and houses over 1,000 genes. In conjunction with chromosome Y, chromosome X is responsible for sex determination. There are a number of conditions related to an abnormal number and combination of sex chromosomes, some of which include Turner's syndrome, color blindness, hemophilia and duchenne muscular dystrophy.

## REFERENCES

1. Bao, Y., Kishnani, P., Wu, J.Y. and Chen, Y.T. 1996. Hepatic and neuromuscular forms of glycogen storage disease type IV caused by mutations in the same glycogen-branching enzyme gene. *J. Clin. Invest.* 97: 941-948.
2. Mu, J., Skurat, A.V. and Roach, P.J. 1997. Glycogenin-2, a novel self-glucosylating protein involved in liver glycogen biosynthesis. *J. Biol. Chem.* 272: 27589-27597.
3. Roach, P.J., Cheng, C., Huang, D., Lin, A., Mu, J., Skurat, A.V., Wilson, W. and Zhai, L. 1998. Novel aspects of the regulation of glycogen storage. *J. Basic Clin. Physiol. Pharmacol.* 9: 139-151.
4. Mu, J. and Roach, P.J. 1998. Characterization of human Glycogenin-2, a self-glucosylating initiator of liver glycogen metabolism. *J. Biol. Chem.* 273: 34850-34856.
5. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 1999. Johns Hopkins University, Baltimore, MD. MIM Number: 300198. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Zhai, L., Mu, J., Zong, H., DePaoli-Roach, A.A. and Roach, P.J. 2000. Structure and chromosomal localization of the human Glycogenin-2 gene GYG2. *Gene* 242: 229-235.
7. Zhai, L., Schroeder, J., Skurat, A.V. and Roach, P.J. 2001. Do rodents have a gene encoding Glycogenin-2, the liver isoform of the self-glucosylating initiator of glycogen synthesis? *IUBMB Life* 51: 87-91.
8. Gibbons, B.J., Roach, P.J. and Hurley, T.D. 2002. Crystal structure of the autocatalytic initiator of glycogen biosynthesis, glycogenin. *J. Mol. Biol.* 319: 463-477.

## CHROMOSOMAL LOCATION

Genetic locus: GYG2 (human) mapping to Xp22.33.

## SOURCE

Glycogenin-2 (K-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Glycogenin-2 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-161666 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Glycogenin-2 (K-14) is recommended for detection of Glycogenin-2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with Glycogenin-1.

Glycogenin-2 (K-14) is also recommended for detection of Glycogenin-2 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for Glycogenin-2 siRNA (h): sc-91341, Glycogenin-2 shRNA Plasmid (h): sc-91341-SH and Glycogenin-2 shRNA (h) Lentiviral Particles: sc-91341-V.

Molecular Weight of Glycogenin-2: 66 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **Glycogenin-2 (3L10): sc-134346**, our highly recommended monoclonal alternative to Glycogenin-2 (K-14).