



# GGCX (WW-6): sc-100779

## BACKGROUND

GGCX ( $\gamma$ -glutamyl carboxylase), also known as GC or VKCFD1 (vitamin K-dependent  $\gamma$ -carboxylase), is a 758 amino acid multi-pass membrane protein. Localized to the membrane of the endoplasmic reticulum, GGCX functions to mediate the vitamin K-dependent carboxylation of glutamate residues on target proteins, thereby producing calcium binding  $\gamma$ -carboxyglutamate (Gla) residues on these proteins and simultaneously converting vitamin K to vitamin K epoxide. GGCX exists as a monomer and, via its ability to modify glutamate residues, it accomplishes the posttranslational changes that are necessary for the activity of all vitamin K-dependent proteins (such as blood coagulation and bone matrix proteins). Defects in the gene encoding GGCX are the cause of combined deficiency of vitamin K-dependent clotting factors 1 (VKCFD1) and PXE-like disorder with multiple coagulation factor deficiency, both of which are characterized by abnormal skin, blood or bone function.

## REFERENCES

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- Wadelius, M., et al. 2005. Common VKORC1 and GGCX polymorphisms associated with warfarin dose. *Pharmacogenomics J.* 5: 262-270.
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- Kimura, R., et al. 2006. Polymorphisms in vitamin K-dependent  $\gamma$ -carboxylation-related genes influence interindividual variability in plasma Protein C and Protein S activities in the general population. *Int. J. Hematol.* 84: 387-397.
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- Schmidt-Krey, I., et al. 2007. Two-dimensional crystallization of human vitamin K-dependent  $\gamma$ -glutamyl carboxylase. *J. Struct. Biol.* 157: 437-442.

## STORAGE

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

## CHROMOSOMAL LOCATION

Genetic locus: GGCX (human) mapping to 2p11.2.

## SOURCE

GGCX (WW-6) is a mouse monoclonal antibody raised against recombinant GGCX of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

GGCX (WW-6) is recommended for detection of GGCX of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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 1:30-1:3000).

Suitable for use as control antibody for GGCX siRNA (h): sc-75125, GGCX shRNA Plasmid (h): sc-75125-SH and GGCX shRNA (h) Lentiviral Particles: sc-75125-V.

Molecular Weight of GGCX: 94 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2050 or ABC: sc-2017 mouse IgG Staining Systems.

## 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.