

DESCRIPTION

Species Reactivity	Human
Specificity	Detects a synthetic peptide specific for Human SGCG around amino acid 190 in Direct ELISA.
Source	Monoclonal Mouse IgG ₁ Clone # 1112101
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Synthetic Peptide Accession # Q13326
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.

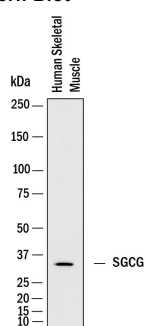
APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

	Recommended Concentration	Sample
Western Blot	2 µg/mL	Human skeletal muscle tissue
Immunohistochemistry	3-25 µg/mL	Immersion fixed paraffin-embedded sections of human heart and skeletal muscle
Simple Western	20 µg/mL	Human skeletal muscle tissue

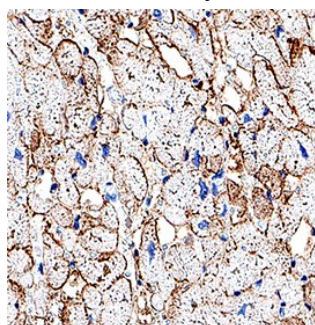
DATA

Western Blot



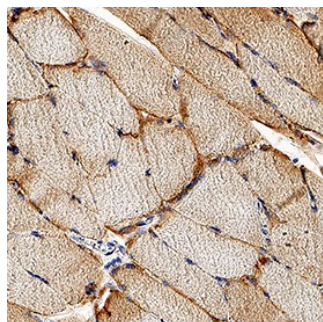
Detection of Human gamma-Sarcoglycan/SGCG by Western Blot. Western Blot shows lysates of human skeletal muscle tissue. PVDF membrane was probed with 2 µg/ml of Mouse Anti-Human gamma-Sarcoglycan/SGCG Monoclonal Antibody (Catalog # MAB11731) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for gamma-Sarcoglycan/SGCG at approximately 32 kDa (as indicated). This experiment was conducted under reducing conditions and using Western Blot Buffer Group 1.

Immunohistochemistry



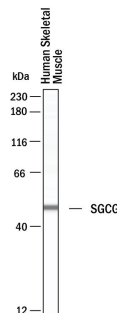
Detection of gamma-Sarcoglycan/SGCG in Human Heart. gamma-Sarcoglycan/SGCG was detected in immersion fixed paraffin-embedded sections of human heart using Mouse Anti-Human gamma-Sarcoglycan/SGCG Monoclonal Antibody (Catalog # MAB11731) at 5 µg/ml for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC001) or the HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to the cytoplasm. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

Immunohistochemistry



Detection of gamma-Sarcoglycan/SGCG in Human Skeletal Muscle. gamma-Sarcoglycan/SGCG was detected in immersion fixed paraffin-embedded sections of human skeletal muscle using Mouse Anti-Human gamma-Sarcoglycan/SGCG Monoclonal Antibody (Catalog # MAB11731) at 5 µg/ml for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC001) or the HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to the cytoplasm. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

Simple Western



Detection of Human gamma-Sarcoglycan/SGCG by Simple Western™. Simple Western lane view shows lysates of human skeletal muscle tissue, loaded at 0.5 mg/ml. A specific band was detected for gamma-Sarcoglycan/SGCG at approximately 49 kDa (as indicated) using 20 µg/ml of Mouse Anti-Human gamma-Sarcoglycan/SGCG Monoclonal Antibody (Catalog # MAB11731) followed by HRP-conjugated Goat Anti-Mouse Secondary Antibody (Catalog # 042-205). This experiment was conducted under reducing conditions and using the 12-230kDa separation system.

PREPARATION AND STORAGE

Reconstitution	Reconstitute lyophilized material at 0.2 mg/ml in sterile PBS. For liquid material, refer to CoA for concentration.
Shipping	Lyophilized product is shipped at ambient temperature. Liquid small pack size (-SP) is shipped with polar packs. Upon receipt, store immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Sarcoglycan gamma (SGCG) is a transmembrane protein and a key component of the dystrophin-associated glycoprotein complex (DGC), with a molecular weight of approximately 35 kDa. The sarcoglycan complex, which includes SGCG, is critical for maintaining the structural integrity of muscle cell membranes and for linking the actin cytoskeleton to the extracellular matrix. SGCG is predominantly expressed in skeletal and cardiac muscle, where it plays a crucial role in stabilizing the muscle membrane during contraction. Mutations in the SGCG gene are associated with limb-girdle muscular dystrophy type 2C (LGMD2C), a progressive muscular dystrophy characterized by muscle weakness and membrane instability. Loss of SGCG function leads to disruption of the DGC, resulting in increased susceptibility to muscle membrane damage and impaired muscle regeneration. Recent studies suggest that SGCG may also be involved in signaling pathways regulating muscle homeostasis and repair. Its critical role in muscle integrity, disease pathogenesis, and signaling underscores its potential as a therapeutic target for the treatment of muscular dystrophies.

References:

1. Hack AA, Groh ME, McNally EM. Sarcoglycans in muscular dystrophy. *Microsc Res Tech*. 2000 Feb 1-15;48(3-4):167-80. doi: 10.1002/(SICI)1097-0029(20000201/15)48:3/43.0.CO;2-T. PMID: 10679964.
2. Groh S, Zong H, Goddeeris MM, Lebakken CS, Venzke D, Pessin JE, Campbell KP. Sarcoglycan complex: implications for metabolic defects in muscular dystrophies. *J Biol Chem*. 2009 Jul 17;284(29):19178-82. doi: 10.1074/jbc.C109.010728. Epub 2009 Jun 3. PMID: 19494113; PMCID: PMC2740540.
3. Bushby KM. The limb-girdle muscular dystrophies-multiple genes, multiple mechanisms. *Hum Mol Genet*. 1999;8(10):1875-82. doi: 10.1093/hmg/8.10.1875. PMID: 10469840.