3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone (800) 325-5832 (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

ANTI- a 1-SYNTROPHIN (AG-17)
Developed in Rabbit, IgG Fraction of Antiserum

Product Number **S4688**

Product Description

Anti-α1-Syntrophin (AG-17) is developed in rabbit using a synthetic peptide corresponding to the N-terminal sequence of human α1-syntrophin (amino acids 2-18 with C-terminally added lysine) conjugated to KLH as immunogen. This sequence is identical in rabbit α1-syntrophin and highly conserved (single amino acid substitution) in mouse α1-syntrophin. This sequence has no homology with β1- and β2-syntrophins. Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti-α1-Syntrophin (AG-17) recognizes α1-syntrophin (60 kDa). Applications include the detection and localization of α1-syntrophin by immunoblotting and immunohistochemistry. Staining of α1-syntrophin in immunoblotting is specifically inhibited with α1-syntrophin immunizing peptide.

The syntrophins are a family of intracellular peripheral membrane proteins (58-60 kDa), comprising at least three isoforms α1, β1 and β2. Syntrophins in mammalian skeletal muscle have been shown to be part of a complex of proteins associated with dystrophin, the product of Duchenne/Becker muscular dystrophy gene.[1-5] The dystrophin-associated protein (DAP) complex is thought to link cortical actin to the extracellular matrix, thereby stabilizing the sarcolemma during repeated cycles of contraction and relaxation.[6] At the neuromuscular junction, the DAPs have been implicated in agrin-stimulated clustering of nicotinic acetylcholine receptors.[7] Dystrophin and DAPs are also found at synapses in the brain and retina.[8,9] Thus, the syntrophins and other DAPs may participate in sarcolemma stabilization and synaptogenesis.

Based on their domain organization and association with neuronal nitric oxide synthase (nNOS), syntrophins are thought to function as modular adapters to recruit signaling proteins to the membrane via association with the dystrophin complex.[10,11] The α1, β1 and β2-syntrophin isoforms contain two pleckstrin (PH) homology domains, found in a wide array of signaling proteins, mediating signal-dependent membrane association.[12] Inserted within the first syntrophin PH domain is a PDZ domain, which is known to be involved in binding the C-terminal tails of several transmembrane receptors, and ion channels.[10,13] The C-terminal 57 amino acids region of syntrophins is highly conserved among the three isoforms, and may contain the binding site for dystrophin.[2,12]

Like members of the dystrophin family, syntrophins are expressed in a wide range of tissues.[2,14,15] In rat skeletal muscle, α1 and β1-syntrophins are localized on the sarcolemma, whereas β2-syntrophin is largely restricted to the neuromuscular junction, associated with utrophin. β1-Syntrophin appears to be more restricted to fast twitch muscle fibers, the first fibers to degenerate in Duchenne muscular dystrophy.

Reagent

Anti-α1-Syntrophin (AG-17) is supplied as an IgG fraction of antiserum in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Precautions and Disclaimer

Due to the sodium azide content a material safety sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution.
Consult the MSDS for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2 °C - 8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile
A minimum working dilution of 1:1,000 is determined by immunoblotting using a membrane fraction extract of rat skeletal muscle homogenate.

A minimum working dilution of 1:100 is determined by immunohistochemistry using paraformaldehyde-fixed, Triton X-100 treated, frozen sections of rat skeletal muscle.

Note: In order to obtain best results and assay sensitivity in different techniques and preparations we recommend determining optimal working dilutions by titration test.

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