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Sortolin-Related Receptor Precursor containing LDLR A repeats (SORLA) Antibodies

Anti-SORLA Antibodies (SORLA-101AP)

Alternate Nomenclature: LDLR relative with 11 binding domain repeat, Sorting protein related receptor (SorL/LR11)

Sorting protein-related receptor (SORLA/LR11) is a highly conserved mosaic receptor that is expressed by cells in various tissues including cell of the collecting ducts in the kidney and in neurons of the CNS and peripheral nervous system. The functional features on SORLA/LR11 receptor indicate it serves as a sorting receptor shuttling the plasma membrane, endosomes and the Golgi. The terminal oligo saccharides on the SORLA receptors that are synthesized in kidney and brains are modified with terminal beta 1,4 linked GalNAc-4-SO (1). The SORLA receptor interacts with LDL receptor, a protein of approximately 250kDa called LR11 which contained a cluster of 11 LDL receptor binding repeats, a group of 5 LDL receptor YWTD repeats, a large hexa repeats of elements found in neuronal cell adhesion molecule and a portion similar to yeast receptor for vacuolar protein sorting called VSP10. The oligo saccharides located on the VSP10 domain are modified with beta 1, 4-linked GalNAc when the VPs10 is expressed in cells along with either of two recently cloned protein-specific beta 1-4GalNAc-transferase, galNAcTIII and GalNAcTIV. These highly specific modification on LR11 and VSP10 domains are responsible for SORLA interaction for protein sorting and influence the protein trafficking in cells (1).

SORLA protein in neuronal cells is also identified and recognized as neuronal receptor for amyloid precursor protein (APP) that affect its intracellular transport and processing. The expression of SORLA is decreased in Alzheimer's patients and elevated levels in amyloid-beta peptide in SORLA-deficient mice suggest the importance of this protein sorting receptor in neurodegenerative disorders. The SORLA receptor directly interacts with beta-site APP cleaving enzyme (BACE) and APP and inhibit the BACE-APP complex formation and SORLA carboxy tail construct significantly inhibits APP shedding in a (BACE) dependent manner. It is suggested that SORLA acts as a trafficking receptor that prevents BACE-APP interactions and hence BACE cleavage of APP and genetic variants in SORLA may be important risk factors for late-onset Alzheimer's disease (2). In transfected experiments about 10% of full length SORLA receptor is expressed on the cell surface capable of mediating endocytosis. The SORLA receptor is regulated by proteolytic cleavage mediated by protease furin at site (50-RRKR-53), the truncated SORLA receptor was found in the late golgi suggesting its interaction with newly synthesized ligands (3).

SORLA is a relatively large protein with 2215 amino acids with an approximate molecular weight of 250kDa. FabGennix Int. Inc., has made SORLA-specific antibodies in rabbits using peptide methodology. The SORLA receptor antibodies were made against a near carboxyterminal peptide, the peptide was covalently modified post synthesis to achieve the desired antigenicity before coupling to a carrier protein. The SORLA-selective antibodies were affinity purified against immobilized antigen based affinity chromatography and are represented as pure IgG fractions stabilized in antibody stabilization buffer. The affinity purified antibodies can be conjugated as HRP, alkaline phosphatase conjugates or with fluorophores (FITC, Rhodamine) for IHC, Confocal, WB analyses at a nominal price. FabGennix Inc. has a wide collection of antibodies related to neurodegenerative diseases a list of these antibodies can be obtained at www.FabGennix.com under product listings. Limited quantities of antigens are also available. Please enquire for their availability before ordering.

R = rat; M = mouse; H = human; C = chicken; monk = monkey; * not all variants are labeled equally

Immunogen: Synthetic peptide corresponding to SORLA receptor C-terminal region (aa: khr lrq ssf saf ans hys srl gsa i corresponding to aa 2151-2186).

Concentration: SORLA-101AP IgG concentration 0.5-0.62mg/ml in antibody stabilization buffer.

Applications: Antibody SORLA-101AP is ideal for ELISA, WB and IMM. The IHC and CF microscopic examination has not been established. The antibody does immunoprecipitates solubilized SORLA protein from kidney and brain solObuffer (Cat FGI-1943) extracts. The dilutions for this antibody is for reference only. WB > 1:500; IMM & i.p pull-down assays:> 1:200

Reactivity: This antibody detects a high MW band of approximate MW of about 210-250kDa and some low MW bands in the 150-160kDa range in PC-SORLA sample.

Protocols: Standard protocol for various applications (WB, IMM & IHC) of this antibody is provided with the product specification sheet, however, FabGennix Inc. strongly recommends investigators to optimize conditions for use of this antibody in their laboratories.

Form/Storage: The affinity-purified antibodies are isolated on antigen-spharose affinity column and supplied as 0.5-0.62mg/ml IgG in antibody stabilization buffer. These antibodies were isolated on immobilized affinity based chromatography. For long-term storage of antibodies, store at -20°C. FabGennix Inc. does not recommend storage of very dilute antibody solutions unless they are prepared in specially formulated multi use antibody dilution buffer (Cat # DiluOBuffer). Working solutions of antibodies in DiluOBuffer should be filtered through 0.45 filter after use for long-term storage.

References:

1. Taira K, Bujo H, Hirayama S, Yamazaki H, Kanaki T, Takahashi K, Ishii I, Miida T, Schneider WJ, Saito Y. LR11, a mosaic LDL receptor family member, mediates the uptake of ApoE-rich lipoproteins in vitro. *Arterioscler Thromb Vasc Biol.* 2001 Sep;21(9):1501-6.
2. Mayeux R, Hyslop PS. Alzheimer's disease: advances in trafficking *Lancet Neurol.* 2008 Jan;7(1):2-3.
3. Jacobsen L, Madsen P, Jacobsen C, Nielsen MS, Gliemann J, Petersen CM. Activation and functional characterization of the mosaic receptor SorLA/LR11. *J Biol Chem.* 2001 Jun 22;276(25):22788-96. Epub 2001 Apr 9.

* For users who may require large amounts of SORLA-101AP, please enquire about bulk material discounts.
This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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