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Band3 Rabbit pAb

Catalog # AP98861

Product Information

Application	WB, IHC-P, IHC-F, IF, E
Primary Accession	P02730
Other Accession	P02730
Reactivity	Rat
Predicted	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	101792
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human Band3/CD233
Epitope Specificity	601-700/911
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the anion exchanger (TC 2.A.31) family.
SUBUNIT	A dimer in solution, it spans the membrane asymmetrically and appears to be tetrameric. Interacts (via cytoplasmic N-terminus domain) with ANK1 (via N-terminus ANK repeats).
Post-translational modifications	Phosphorylated on Tyr-8 and Tyr-21 most likely by SYK. PP1-resistant phosphorylation that precedes Tyr-359 and Tyr-904 phosphorylation. Phosphorylated on Tyr-359 and Tyr-904 most likely by LYN. PP1-inhibited phosphorylation that follows Tyr-8 and Tyr-21 phosphorylation.
DISEASE	Defects in SLC4A1 are the cause of elliptocytosis type 4 (EL4) [MIM:109270]. EL4 is a Rhesus-unlinked form of hereditary elliptocytosis, a genetically heterogeneous, autosomal dominant hematologic disorder. It is characterized by variable hemolytic anemia and elliptical or oval red cell shape. Defects in SLC4A1 are the cause of spherocytosis type 4 (SPH4) [MIM:612653]; also known as hereditary spherocytosis type 4 (HS4). Spherocytosis is a hematologic disorder leading to chronic hemolytic anemia and characterized by numerous abnormally shaped erythrocytes which are generally spheroidal. Defects in SLC4A1 are the cause of autosomal dominant distal renal tubular acidosis (AD-dRTA) [MIM:179800]. This disease is characterized by reduced ability to acidify urine, variable hyperchloremic hypokalemic metabolic acidosis, nephrocalcinosis, and nephrolithiasis. Defects in SLC4A1 are the cause of autosomal recessive distal renal tubular acidosis (AR-dRTA) [MIM:611590].
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Band 3, also designated AE1, is an erythrocyte membrane glycoprotein that contributes to cell stuctural integrity and mediates exchange of chloride and bicarbonate across the phospholipid bilayer. The diverse functions of the approximately 900 amino acid protein are mediated by two distinct domains. The amino terminal domain, also known as cdb3 for cytoplasmic domain of erthrocyte membrane band 3, acts as an attachment site for the erythrocyte skeleton by binding ankyrin. The carboxy-terminal, membrane-associated

domain carries out exchange transport of anions. Degradation of band 3 can generate an aging antigen known as senescent cell antigen, or SCA, which is expressed on old cells and marks them for removal by the immune system. An isoform of band 3, which lacks the first 65 amino acids and does not bind ankryin, is expressed in kidney.

Additional Information

Gene ID	6521
Other Names	B3AT_HUMAN; SLC4A1; Anion exchange protein 1 (AE 1 | Anion exchanger 1); Solute carrier family 4 member 1; AE1; DI; EPB3; BND3; CD233; CHC; EMPB3; FR; RTA1A; SAO; SPH4; SW; WD; WD1; WR; solute carrier family 4 member 1 (Diego blood group); Waldner blood group; erythrocyte membrane protein band 3; Diego blood group; solute carrier family 4, anion exchanger, member 1 (erythrocyte membrane protein band 3, Diego blood group); solute carrier family 4 (anion exchanger), member 1; solute carrier family 4 (anion exchanger), member 1 (Diego blood group); Froese blood group; Swann blood group; Wright blood group; Band 3 anion transport protein
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,ICC/IF=1:100-500,IF=1:100-500,ELISA=1:5000-10000
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	SLC4A1 (HGNC:11027)
Synonyms	AE1, DI, EPB3
Function	Functions both as a transporter that mediates electroneutral anion exchange across the cell membrane and as a structural protein (PubMed:10926824, PubMed:14734552, PubMed:1538405, PubMed:16227998, PubMed:20151848, PubMed:24121512, PubMed:28387307, PubMed:35835865). Component of the ankyrin-1 complex of the erythrocyte membrane; required for normal flexibility and stability of the erythrocyte membrane and for normal erythrocyte shape via the interactions of its cytoplasmic domain with cytoskeletal proteins, glycolytic enzymes, and hemoglobin (PubMed:1538405, PubMed:20151848, PubMed:35835865). Functions as a transporter that mediates the 1:1 exchange of inorganic anions across the erythrocyte membrane. Mediates chloride-bicarbonate exchange in the kidney, and is required for normal acidification of the urine (PubMed:10926824, PubMed:14734552, PubMed:16227998, PubMed:24121512, PubMed:28387307).
Cellular Location	Cell membrane; Multi-pass membrane protein. Basolateral cell membrane; Multi-pass membrane protein. Note=Detected in the erythrocyte cell membrane and on the basolateral membrane of alpha-intercalated cells in the collecting duct in the kidney.
Tissue Location	Detected in erythrocytes (at protein level).

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