

Product Specification Sheet

Anion Exchanger-4 (AE4) Antibodies

Cat. # AE41-P	Human AE4 Control/blocking Peptide # 1	SIZE: 100 ug
Cat. # AE41-S	Rabbit Anti-Human AE4 antiserum # 1	SIZE: 100 ul
Cat. # AE41-A	Rabbit Anti-Human AE4 IgG # 1 (aff pure)	SIZE: 100 ug

Anion exchangers (AE) are membrane proteins involved in the regulation of intracellular pH, cell volume regulation as well as in transepithelial acid/base transport. AE proteins are sodium-independent exchangers that mediate one-for-one exchange of extracellular Cl⁻ for intracellular HCO₃⁻ ions resulting in intracellular acidification. AE proteins are encoded by a family of at least three related genes (**AE1, AE2, and AE3**). Numerous alternatively spliced isoforms of each AE gene are expressed in various tissues. AE proteins are exemplified by a large N-terminal cytoplasmic domain (~40-75 kDa) that provides binding sites for cytoskeleton protein, glycolytic enzymes and hemoglobin. The N-terminal cytoplasmic domains of AE2 and AE3 are more closely related than AE1. In fact, AE1 N-terminus is 300 aa shorter than both the AE2 and AE3. The C-terminal TM domain (~55 kDa) is highly conserved (~70% identity) among various AE, spans the lipid bilayer 12-14 times, and is able to mediate anion exchange by itself.

Human AE4 (945 aa; chromosome 5) has 14 TM domains. It is strongly expressed in the kidney. Rabbit and human AE4 share 84% identity. AE4 has at least 3 alternatively spliced isoforms: (Isoform 1, 983 aa; isoform 2, 945-aa; missing 77-100, 384-394, 592-594; and isoforms 3, 959-aa, missing 77-100,

FUNCTION: Probable apical anion exchanger of the kidney cortex
SUBCELLULAR LOCATION: Multi-pass membrane protein.
ALTERNATIVE PRODUCTS: 3 named isoforms produced by alternative splicing (isoforms 1, 983 aa; isoforms 2 (**TISSUE SPECIFICITY:** Kidney specific.
SIMILARITY: Belongs to the anion exchanger
Protein name Anion exchange protein 4
Synonyms Anion exchanger 4, Solute carrier family 4 member 9, Sodium bicarbonate cotransporter 5, AE4, SBC5
Gene name SLC4A9

Source of Antigen and Antibodies

Antigen	15-aa peptide of Human AE4 (protein accession #Q96Q91, refs 1); Designated (AE41-P or Control peptide) conjugated to KLH epitope location ~ C-terminal, Cytoplasmic
Ab Host/type	Rabbit, polyclonal Unpurified antiserum (cat #AE41-S) Aff pure IgG (cat #AE41-A) purified over antigen-agarose column
2-ab	Goat Anti-Rat IgG-HRP conjugate Cat # 50320 (AP, biotin, FITC conjugates also available)
-ve control IgG	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)
100ul solution lyophilized powder
Supplied in Buffer: 0.05% azide
Reconstitute powder in 100 ul PBS

Affinity pure IgG
100 ug/100ul solution lyophilized powder
Supplied in **Buffer:** PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide
100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage
Short-term: unopened, undiluted liquid vials at -200C and powder at 4oC or -20oC..

Long-term: at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20oC or below.

Recommended Usage

Western Blotting (1:1K-5K for antiserum and 1-10 ug/ml for affinity pure antibody using ECL technique).

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (1:10-50K for neat serum and 0.5-1 ug/ml for affinity pure).

Histochemistry & Immunofluorescence: Not tested.

Specificity & Cross-reactivity

Human AE41-P control peptide is 100% conserved in human isoforms 1-3, rat, rabbit AE4. The sequence is also the same in proteins listed as human NBC5 (gene accession # AB032762, 657 aa) and NBC (gene accession # AF313465, 990 aa; XM_038736, 959 aa). No significant sequence homology of AE41-P is detected with other AE1-3 or other transporters. Antibody cross-reactivity in various species is not known. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at: www.4adi.com/data/abblock.html).

General References: Parker MD et al (2001) BBRC 282, 1103-1109; Tsuganezawa H et al (2001) JBC 276, 8180-8189
*This product is for In vitro research use only.

AE41-S-A-P 70828A

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