ALPHA DIAGNOSTIC INTERNATIONAL

LIFE TECH Life Technologies™ Your Molecular & Cell Technology Partner

Product Specification Sheet

EP4 Receptor Antibodies

Cat. # EP42-P	Human EP4 Control Peptide # 2	**SIZE**: 100 ug
Cat. # EP42-S	Rabbit Anti-Human EP4 antiserum # 2	**SIZE**: 100 ul
Cat. # EP42-A	Rabbit Anti-Human EP4 IgG # 2(affinity pure)	**SIZE**: 100 ug

Prostanoids are the cyclooxygenase metabolites derived from C-20 unsaturated fatty acids (arachidonic acid) and include prostaglandin (PG) D2, PGE2, PGF2 alpha, PGI2, and thrombaxane (Tx) A2. **Prostaglandin PGE2** is one of the major prostaglandin produced during inflammation. A variety of PGE2-mediated effects on vascular smooth muscle tonus, glomerular cell function, renin release, and renal salt and water transport have been described. The actions of PGE2 are mediated by rhodopsin-type; G-protein coupled membrane receptors, termed **E-prostanoid (EP) receptors or PTGERs**. There are four subtypes of PGE receptors designated as **EP1, EP2, EP3, and EP4** that are encoded by different genes and expressed differently in each tissue. The intracellular signaling also differs among the receptor subtypes. In general, EP receptors display a protein topology typical of GPCR - 7 TM domain, an extracellular N-terminus, and a large intracellular C-terminus.

EP4 (mouse 513 aa, rat 488 aa; human 488 aa, chromosome 5p13.1, ~ 90% interspecies homology) is expressed in intestine, lung, thymus, kidney, uterus, pancreas, spleen, heart, stomach, and brain. EP4 knockout mice show patent ductus arteriosus, and decreased inflammatory bone resorption. EP4 activity is mediated by Gs that stimulate adenyl cyclase. It has a relaxing effect on smooth muscle and implicated in renal hemodynamics, intestinal epithelial transport, adrenal aldosterone secretion, and uterine functions. It was originally reported as EP2 subtype.

Source of Antigen and Antibodies

Antigen	18-aa peptide of Human EP4; **Designated (EP42-P or control peptide)** conjugated to KLH; **Epitope location**~ C-terminal, Cytoplasmic domain
Ab Host/type	Rabbit, polyclonal Unpurified antiserum (cat #EP42-S) Aff pure IgG (**cat #EP42-A**)
2-ab	Anti-rabbit IgG-HRP cat # 20320 (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 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 -20OC 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.
Shipping: 4oC for solutions and room temp for powder

Recommended Usage

Western Blotting (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure antibody using ECL technique). EP4 has been shown to be 47 and 78 kDa EP4 bands in the kidney (2-3).

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. We recommend the use of affinity purified antibody at 2-20 ug/ml as described (2) or paraformaldehyde fixed tissues.

Specificity & Cross-reactivity

The human EP42-P control peptide is 100% conserved in rabbit, monkey, Bovine, and 94% in rat, canine and mouse EP4. No significant homology of EP42-P exist with other EP (1, 2 or 3) receptors. Antibody cross-reactivity in various species is not established. The EP42-P 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 the web site).).

General References: **1**. Bastien L (1994) JBC 269, 11873; An S (1993) BBRC 197, 263; Foord SM (1996) Genomics 35, 182; Mori K (199J. Mol. Med. 74, 333-336; Narumiya S (1999) Physiol. Rev. 79, 1193; Morath R (1999) J Am. Soc. Nephrol. 10, 1860.

2. Citations of for ADI Antibodies (see updates at the web site)
Biswas S, 2004, Prostaglins, Leukotrienes Essential Fatty Acids, 71, 277-278,
white ES, 2004, Am. J. Respir. Cell Mol. Biol 32, 135-141, WB
Burgess JK, 2004, J. Allergy Clinical Immunol.113, 876-881,
Chell SD, 2006, Cancer Res., Mar 2006; 66: 3106 - 3113, WB
Aronff DM, 2004, J. Immunol., 173: 559 - 565., WB
Ishikawa T, 2006, Endocrinol. 147: 1706 - 1716., WB
Aronoff DM, 2004, J. Immunol., 173: 559 - 565, WB
Kotelevets L, 2007, Prostaglandins, Leukotrienes and Essential Fatty Acids, 195-201,
Walch L, 2003, Endocrinol., 144: 1284 - 1291, WB
Chun KS, 2007, Cancer Res., Mar 2007; 67: 2015 - 2021., WB

*This product is for In vitro research use only.

EP42-S-A-P 71217A

Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, S an Antonio, T X 7 8 24 4 , U S A;

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400 Fax: +91-11-42208444 Email: customerservice@lifetechindia.com Website: www.lifetechindia.com