

Product Specification Sheet

**EP2 Receptor Antibodies**

Cat. # EP21-P	Rat EP2 Control Peptide#1	<b>SIZE:</b> 100 ug
Cat. # EP21-S	Rabbit Anti-Rat EP2 antiserum # 1	<b>SIZE:</b> 100 ul
Cat. # EP21-A	Rabbit Anti-Rat EP2 IgG # 1 (affinity pure)	<b>SIZE:</b> 100 ug

Prostanoids are the cyclooxygenase metabolites derived from C-20 unsaturated fatty acids (arachidonic acid) and include prostaglandin (PG) D<sub>2</sub>, PGE<sub>2</sub>, PGF<sub>2</sub> alpha, PGI<sub>2</sub>, and thromboxane (Tx) A<sub>2</sub>. The fatty acids precursors are released from the membrane phospholipids in response to various physiological and pathological stimuli by the action of phospholipase A<sub>2</sub> and are converted to various prostanoids by the sequential actions of cyclooxygenases and the respective synthases. **Prostaglandin PGE<sub>2</sub>** is one of the major prostaglandin produced during inflammation. A variety of PGE<sub>2</sub>-mediated effects on vascular smooth muscle tonus, glomerular cell function, renin release, and renal salt and water transport have been described. The actions of PGE<sub>2</sub> 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.

**EP2 or PTGER2** (rat 357 aa, mouse 362 aa, and human 358 aa; chromosome 14; ~85% interspecies homology) has wide tissue distribution, with high expression in lung and placenta. Ep2 -/- females are infertile secondary to failure of the released ovum to become fertilized in vivo. Mice deficient in the EP2 receptor displayed resting systolic blood pressure that was significantly lower than that in wild type controls. LPS induces EP2 in macrophages.

**Source of Antigen and Antibodies**

<b>Antigen</b>	A 13 AA peptide (within the 3 <sup>rd</sup> extracellular domain and a 24-aa peptide within the 4 <sup>th</sup> cytoplasmic C-terminus of rat EP2 were injected together ( <b>designated EP21-P, control peptides</b> ) epitope location ~C-terminus, extracellular domain
<b>Ab Host/type</b>	Unpurified antiserum (cat # EP21-S) and aff pure IgG (cat # EP21-A)
<b>2-ab</b>	<b>Goat Anti-rabbit IgG-HRP</b> cat # 20320 (AP, biotin, FITC conjugates also available)
<b>-ve control IgG</b>	<b># 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control</b>

**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.

**Recommended Usage**

**Western Blotting** (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure antibody using ECL technique). In the kidney, the EP2 has been shown to be ~67 kDa. See refs in 2

**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:** We recommend the use of affinity purified antibody at 2-20 ug/ml in paraformaldehyde fixed sections of tissues. See refs in 2

**Specificity & Cross-reactivity**

The rat EP21-P is 92% conserved in mouse, 84% in human, rabbit, and 76% in ovine. The two peptides have no appreciable sequence homology with EP1 or EP3-4 or other GPCR. Antibody cross-reactivity in various species is not established. 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:** Nemoto K et al (1997) Prostaglandins 54, 713; Boie Y et al (1997) Eur. J. Pharmacol. 340, 227; Narumiya S et al (1995) FEBS Lett. 372, 151; Regan JW et al (1994) Mol. Pharmacol. 46, 213; Smock TA et al (1999) Gene 237, 393;

**2. Citations of for ADI Antibodies** (see updates at the web site)

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Walch L, 2003, Endocrinol., 144: 1284 - 1291, WB  
Biswas S, 2004, Prostaglins, Leukotrienes Essential Fatty Acids, 71, 277-278,  
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Burgess JK, 2004, J. Allergy Clinical Immunol.113, 876-881,  
Kamphuis W, 2004, Current Eye Research, 29 , p17-26, WB  
\*This product is for In vitro research use only.

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