ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Core binding factor alpha 2 (CBFA2) Antibodies

Cat. # CBFA21-P	Human CBFA2 control peptide # 1	**SIZE**: 100 ug
Cat. # CBFA21-A	**Rabbit** Anti-Human CBFA2 IgG # 1 (aff pure)	**SIZE**: 100 ug

The gene *noggin* encodes a member of one of at least four distinct gene families encoding secreted polypeptides that bind to members of the transforming growth factor-beta superfamily, such as BMP, and inhibit the function of these signaling proteins by preventing their interaction with receptors on the cell surface. Other antagonists with related functions include Chordin, Follistatin, Sclerostin and members of the DAN family. These BMP antagonists are assumed to be diffusible and therefore potentially important in the establishment of BMP activity gradients *in vivo* Although structurally distinct, members of these gene families have in some cases similar ligand specificity and overlapping patterns of expression, and in the case of Chordin and Noggin these proteins apparently are capable of at least partial compensation for each other. In addition to these multiple secreted BMP antagonists, there are other secreted proteins whose primary function is to overcome this antagonism. Thus, there is a highly complex system to regulate the bioavailability and consequently the activities of BMPs in the extracellular space.

BMPs are important regulators of key events in the processes of bone formation during embryogenesis, postnatal growth, remodeling and regeneration of the skeleton. The BMPs function by binding to a receptor complex that is found on all normal cells and is composed of type-I and –II receptors. The primary unit of bone formation is osteoblast, the bone forming cell. These osteoblast cells respond to physical loading by transducing signals that alter gene expression patterns. Cbfa (core binding factor), the osteoblast specific transcription factor plays an important role in osteoblast differentiation and function.

Cbfa 2/ Runx1/ AML 1 (11 spliced forms**)** a 450aa protein in rat, 451aa in mouse and 453 in human (Chr. 21q22.3), It binds to the core site 5'-PYGPYGGT-3' of a number of enhancers and promoters like murine leukemia virus, T-cell receptor enhancers, expressed in all tissues except brain and heart.

Source of Antigen and Antibodies

Antigen	14-aa peptide from Human **CBFA2** (1); **Designation (CBFA21-P, control peptide**); epitope location ~ C-terminus
Ab Host/type	Rabbit, Polyclonal Aff pure IgG (**cat # CBFA21-A**) purified over antigen-agarose column
2-ab	**Goat 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

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 (1-10 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 (0.5-1 ug/ml for affinity pure).

Histochemistry & Immunofluorescence: Not tested. We recommend the use of aff pure IgG at 2-20 ug/ml.

Specificity & Cross-reactivity

The CBFA21-P control peptide is 100% conserved in only human CBFA2. Antibody cross-reactivity in various species has not been studied. 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: Song, W. J et al (1999) Nat. Genetics. 23 (2), 166-175; Mundlos S et al (1997) Cell 89, 773-779, Ducy P et al (1997) Cell 89, 747-754, Komori T et al (1997) Cell 89 , 755-764, Otto F et al (1997) Cell 89, 765-771.

*This product is for In vitro research use only.

Related material available from ADI

CBFA1, 2 and 3 antibodies,
Noggin, Schlerostin and BMP antibodies

CBFA21-A-P 71217A

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