

Product Specification Sheet

**Core binding factor alpha 1 (CBFA1) Antibodies**

Cat. # CBFA12-P	Mouse CBFA1 Control/blocking peptide # 2	<b>SIZE:</b> 100 ug
Cat. # CBFA12-A	<b>Rabbit Anti-Mouse CBFA1 IgG # 2 (aff pure)</b>	<b>SIZE:</b> 100 ug

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.

**Cbfa1/Runx2 /OSF2** (589aa, and alternatively spliced form 507aa and 522aa in human (chr 6p21) and 528aa or 596aa in mouse) is expressed in bone thymus, testis but not in brain, lung, heart or kidney. It is a transcription factor involved in osteoblastic differentiation and skeletal morphogenesis, essential for the maturation of osteoblasts and both intramembranous and endochondral ossification. Defects in Cbfa1 are the cause of cleidocranial dysplasia (CCD), an autosomal dominant skeletal disorder with high penetrance and variable expressivity. It is due to defective endochondral and intramembranous bone formation

**FUNCTION:** Transcription factor involved in osteoblastic differentiation and skeletal morphogenesis. Essential for the maturation of osteoblasts and both intramembranous and endochondral ossification. CBF binds to the core site, 5'-PYGPGGT-3', of a number of enhancers and promoters

**SUBUNIT:** Heterodimer of an alpha and a beta subunit. The alpha subunit binds DNA as a monomer and through the Runt domain. DNA-binding is increased by heterodimerization. Interacts with G22P1 (Ku70) and XRCC5 (Ku80). Interacts with MYST3 and MYST4 (By similarity).;

**SUBCELLULAR LOCATION:** Nucleus.

**ALTERNATIVE PRODUCTS:** 9 named isoforms produced by alternative splicing. Additional isoforms seem to exist.

**Protein name** Runt-related transcription factor 2; **Synonyms** Core-binding factor, alpha 1 subunit; CBF-alpha 1; Acute myeloid leukemia 3 protein; Oncogene AML-3; Polyomavirus enhancer-binding protein 2 alpha A subunit; PEBP2-alpha A; PEA2-alpha A; SL3-3 enhancer factor 1 alpha A subunit; SL3/AKV core-binding factor alpha A subunit; Osteoblast-specific transcription factor 2; OSF-2; **Gene name** Name: Runx2; Aml3, Cbfa1, Osf2, Pebp2a

**Source of Antigen and Antibodies**

<b>Antigen</b>	15-aa peptide from <b>Mouse CBFA1/Runx2</b> (protein accession # Q08775, refs1 1); <b>Designation (CBFA12-P, control peptide /blocking peptide)</b> conjugated to KLH, epitope location ~ mid-region
<b>Ab Host/type</b>	Rabbit, Polyclonal IgG, purified over antigen-agarose (Cat # <b>CBFA12-A</b> ) purified over antigen-agarose column
<b>2-Ab</b>	Cat # 20320, <b>goat anti-rabbit IgG-HRP</b> (AP, biotin, FITC conjugates also available).
<b>-ve control IgG</b>	# 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.

**Recommended Usage**

**Western Blotting** (1-10 ug/ml for affinity pure antibody using ECL technique). see refs 2.

**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:** We recommend the use of aff pure IgG at 2-20 ug/ml. see refs 2.

**Specificity & Cross-reactivity**

The Mouse CBFA12-P control peptide is 100% conserved mouse isoforms (2-8), in human, rat and 93% in chicken, and frog, CBFA1. 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:** 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.

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

Perinpanayagam H,2003,J. Orthopaedic Res., 22, 404-410,WB, Steinert A,2003,J. Orthopaedic Res. 21, 1090-1097,,IHC Engler AJ,2006,Cell, 126, 677-689,,IF Perinpanayagam H,2006,Archives of Oral Biology, 51, 406-415,WB, Rabie ABM,2003,Arch Oral Biol 49, 1009-1118,,IHC  
\*This product is for In vitro research use only.

CBFA12-A-P 71217A

**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](mailto:customerservice@lifetechindia.com) Website: [www.lifetechindia.com](http://www.lifetechindia.com)