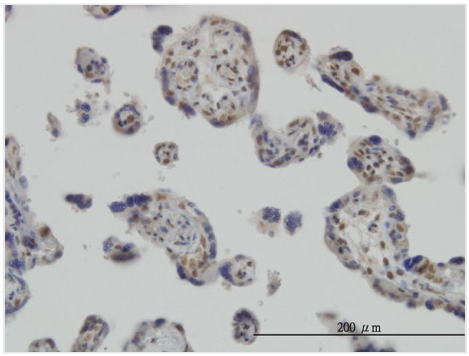
RUNX2 Antibody – Mouse Monoclonal

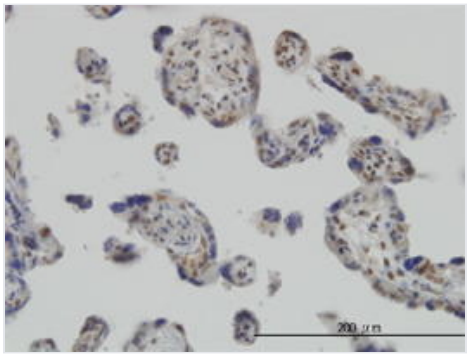
PRODUCT OVERVIEW

Product Name	RUNX2, Monoclonal Antibody
Full Product Name	RUNX2 (Runt-Related Transcription Factor 2, AML3, CBFA1, CCD, CCD1, MGC120022, MGC120023, OSF2, PEA2aA, PEBP2A1, PEBP2A2, PEBP2aA, PEBP2aA1) (AP)
Product Gene Name	anti-RUNX2 antibody
Product Synonym Names	Runt-Related Transcription Factor 2; AML3; CBFA1; CCD; CCD1; MGC120022; MGC120023; OSF2; PEA2aA; PEBP2A1; PEBP2A2; PEBP2aA; PEBP2aA1
Clonality	Monoclonal
Isotype	IgG2a,k
Clone Number	4D5
Host	Mouse
Form/Format	Supplied as a liquid in PBS, pH 7.2. No preservative added. Labeled with Alkaline Phosphatase (AP).
Purity/Purification	Purified
Specificity	Recognizes RUNX2.
Preparation and Storage	Store product at 4 degree C. DO NOT FREEZE! Stable at 4 degree C for 12 months after receipt as an undiluted liquid. Dilute required amount only prior to immediate use. Further dilutions can be made in assay buffer. For maximum recovery of product, centrifuge the original vial prior to removing the cap.
Molecular Weight	55kDa
OMIM	phenotype 600211
3D Structure	ModBase 3D Structure for Q13950
Immunogen	RUNX2 (NP_004339, 251aa-350aa) partial recombinant protein with GST tag. MW of the GST tag alone is 26kD.
Immunogen Sequence	NPRPSLNSAPSPFNPQGQSQITDPRQAQSSPPWSYDQSYPSYLSQMTSPSIHSTTPLSSTRGTGLPAITDVPRRISDDDTATSDFCLWPSTLSKKSQAGA
Conjugate	AP
Product Categories/Family for anti-RUNX2 antibody	Antibodies; Transcription Factors
Applications Tested/Suitable for anti-RUNX2 antibody	Immunohistochemistry (IHC), Western Blot (WB)
Application Notes for anti-RUNX2 antibody	Applications are based on unconjugated antibody.

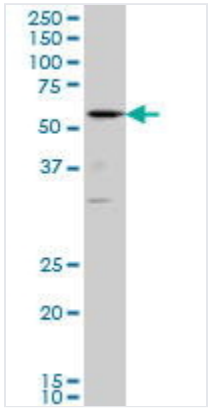
Related Product Information for anti-RUNX2 antibody	This gene is a member of the RUNX family of transcription factors and encodes a nuclear protein with an Runt DNA-binding domain. This protein is essential for osteoblastic differentiation and skeletal morphogenesis and acts as a scaffold for nucleic acids and regulatory factors involved in skeletal gene expression. The protein can bind DNA both as a monomer or, with more affinity, as a subunit of a heterodimeric complex. Mutations in this gene have been associated with the bone development disorder cleidocranial dysplasia (CCD). Transcript variants that encode different protein isoforms result from the use of alternate promoters as well as alternate splicing. [provided by RefSeq]
Other Notes	Small volumes of anti-RUNX2 antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for RUNX2 purchase	MBS6163661 is an antibody targeting RUNX2. Also known as RUNX2 (Runt-Related Transcription Factor 2, AML3, CBFA1, CCD, CCD1, MGC120022, MGC120023, OSF2, PEA2aA, PEBP2A1, PEBP2A2, PEBP2aA, PEBP2aA1) (AP). Host: Mouse.



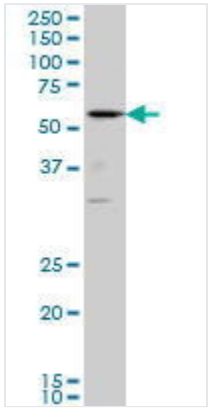
Testing Data of anti-RUNX2 antibody
Immunoperoxidase of monoclonal antibody to RUNX2 on formalin-fixed paraffin-embedded human placenta. [antibody concentration 3 ug/ml]



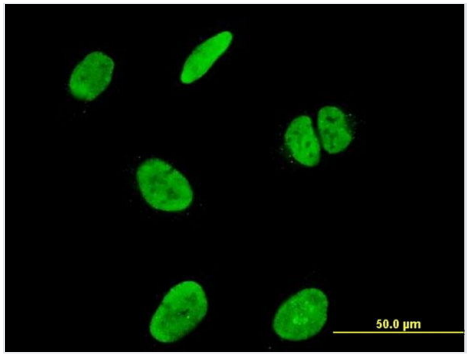
Immunohistochemistry (IHC) of anti-RUNX2 antibody
Immunoperoxidase of monoclonal antibody to RUNX2 on formalin-fixed paraffin-embedded human placenta. [antibody concentration 3 ug/ml]



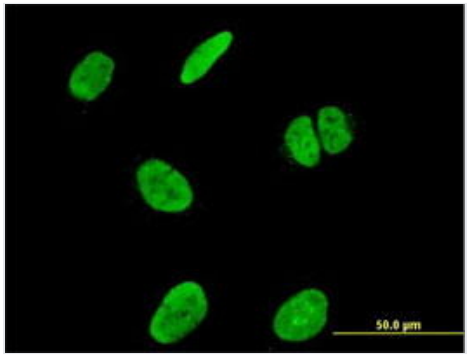
Western Blot (WB) of anti-RUNX2 antibody
RUNX2 monoclonal antibody (M04), clone 4D5 Western Blot analysis of RUNX2 expression in PC-12 (Cat # L012V1).



Testing Data of anti-RUNX2 antibody
Detection limit for recombinant GST tagged RUNX2 is approximately 10ng/ml as a capture antibody.



Immunofluorescence (IF) of anti-RUNX2 antibody
Immunofluorescence of monoclonal antibody to RUNX2 on U-2 OS cell. [antibody concentration 10 ug/ml]



Immunofluorescence (IF) of anti-RUNX2 antibody
Immunofluorescence of monoclonal antibody to RUNX2 on U-2 OS cell. [antibody concentration 10 ug/ml]

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for RUNX2. It may not necessarily be applicable to this product.

NCBI GI #	17368460
NCBI GeneID	860
NCBI Accession #	NP_004339
UniProt Primary Accession #	Q13950
UniProt Related Accession #	Q13950
GenBank Nucleotide #	NM_004348
NCBI Official Full Name	Runt-related transcription factor 2
NCBI Official Synonym Full Names	runt related transcription factor 2
NCBI Official Symbol	RUNX2
NCBI Official Synonym Symbols	CCD; AML3; CCD1; CLCD; OSF2; CBFA1; OSF-2; PEA2aA; PEBP2aA; CBF-alpha-1
UniProt Protein Name	Runt-related transcription factor 2
UniProt Synonym Protein Names	Acute myeloid leukemia 3 protein; Core-binding factor subunit alpha-1; CBF-alpha-1; Oncogene AML-3; Osteoblast-specific transcription factor 2; OSF-2; Polyomavirus enhancer-binding protein 2 alpha A subunit; PEA2-alpha A; PEBP2-alpha A; SL3-3 enhancer factor 1 alpha A subunit; SL3/AKV core-binding factor alpha A subunit
Protein Family	Runt-related transcription factor
UniProt Gene Name	RUNX2
UniProt Synonym Gene Names	AML3; CBFA1; OSF2; PEBP2A; CBF-alpha-1; OSF-2; PEA2-alpha A; PEBP2-alpha A
UniProt Entry Name	RUNX2_HUMAN
NCBI Protein Information	runt-related transcription factor 2
NCBI Summary for RUNX2	This gene is a member of the RUNX family of transcription factors and encodes a nuclear protein with an Runt DNA-binding domain. This protein is essential for osteoblastic differentiation and skeletal morphogenesis and acts as a scaffold for nucleic acids and regulatory factors involved in skeletal gene expression. The protein can bind DNA both as a monomer or, with more affinity, as a subunit of a heterodimeric complex. Two regions of potential trinucleotide repeat expansions are present in the N-terminal region of the encoded protein, and these and other mutations in this gene have been associated with the bone development disorder cleidocranial dysplasia (CCD). Transcript variants that encode different protein isoforms result from the use of alternate promoters as well as alternate splicing. [provided by RefSeq, Jul 2016]

UniProt Comments for RUNX2	AML3: 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'-PYGPYGGT-3', of a number of enhancers and promoters, including murine leukemia virus, polyomavirus enhancer, T-cell receptor enhancers, osteocalcin, osteopontin, bone sialoprotein, alpha 1(I) collagen, LCK, IL-3 and GM-CSF promoters. In osteoblasts, supports transcription activation: synergizes with SPEN/MINT to enhance FGFR2-mediated activation of the osteocalcin FGF-responsive element (OCFRE). Inhibits KAT6B-dependent transcriptional activation. Interaction with SATB2 results in enhanced DNA binding and transactivation by these transcription factors. Heterodimer of an alpha and a beta subunit. Interacts with HIVEP3 and HIPK3. The alpha subunit binds DNA as a monomer and through the Runt domain. DNA-binding is increased by heterodimerization. Interacts with XRCC6 (Ku70) and XRCC5 (Ku80). Interacts with KAT6A and KAT6B. Binds to cyclin B1 CCNB1. Interacts with DDX5. Specifically expressed in osteoblasts. 3 isoforms of the human protein are produced by alternative splicing. Protein type: Transcription factor; DNA-binding Chromosomal Location of Human Ortholog: 6p21 Cellular Component: nucleoplasm; transcription factor complex; cytoplasm; nuclear chromatin Molecular Function: protein domain specific binding; protein binding; bHLH transcription factor binding; chromatin binding; transcription factor activity; ATP binding Biological Process: embryonic forelimb morphogenesis; transcription initiation from RNA polymerase II promoter; ossification; positive regulation of transcription, DNA-dependent; cell maturation; regulation of fibroblast growth factor receptor signaling pathway; chondrocyte development; embryonic cranial skeleton morphogenesis; stem cell differentiation; osteoblast development; odontogenesis of dentine-containing teeth; BMP signaling pathway; osteoblast differentiation; positive regulation of osteoblast differentiation; positive regulation of chondrocyte differentiation; negative regulation of smoothened signaling pathway; positive regulation of cell proliferation; gene expression; negative regulation of transcription, DNA-dependent; regulation of odontogenesis of dentine-containing teeth; osteoblast fate commitment; T cell differentiation; endochondral ossification Disease: Metaphyseal Dysplasia With Maxillary Hypoplasia With Or Without Brachydactyly; Cleidocranial Dysplasia
Research Articles on RUNX2	**1.** RUNX2 gene transcription is regulated by the methylation status of specific CpG sites in the promoter and may determine RUNX2 availability in OA cartilage for transactivation of genes such as MMP13.
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