Certificate of Analysis

Osteopontin, Human

Osteopontin is an RGD (arginine-glycine-asparate) containing glycoprotein. It is acidic, rich in aspartic and glutamic acid residues and is phosphorylated at up to 28 sites. Osteopontin is a member of the SIBLING (small integrin-binding ligand and N-linked glycoprotein) family of proteins.[1]

Osteopontin is a monomer and has a mass (including glycosilation) of approximately 75 kDa. Proteolytic cleavage and variation of post translational modifications results in molecular weight variants from 25 – 75 kDa.[2]

Integrins $\alpha_v\beta_1$, $\alpha_v\beta_3$, $\alpha_v\beta_5$, $\alpha_5\beta_1$, and $\alpha_8\beta_1$ have been reported to bind to osteopontin through the RGD sequence. $\alpha_4\beta_1$ and $\alpha_9\beta_1$ integrins bind to osteopontin through an SVVYGLR sequence adjacent to the RGD site.[3]

Osteopontin has a thrombin cleavage site, which modulates both RGD-dependant and RGD-independent receptor interactions. There are also cleavage sites specific for MMP-3 and MMP-4.[4] Angiogenic endothelial cell migration is mediated through interaction with the thrombin-cleaved form.[5]

Osteopontin is involved in normal and pathological (arthrosclerosis) mineralization, kidney function, inflammation through interaction with CD44 variants on T-cells, leukocyte recruitment, tissue remodeling, cell survival and tumorogenesis.[6]

Osteopontin is a major component of the uterine-placental microenvironment. It has been found on epithelial cells and in the secretions of the gastro-intestinal tract, kidneys, thyroid, breast, uterus, placenta and testes. It is expressed in leukocytes, smooth muscle cells, bones, dentin and hypertrophic cartilage.[1, 2]

Human Osteopontin 354256 is purified from human milk by the method of Senger et al[7]. The diffuse 75 kDa component is completely cleaved to the 35 kDa form by the action of thrombin. It has less than 0.5 endotoxin units/microgram as determined by the Limulus Amoebocyte Lysate Assay.

CATALOG NUMBER:	354256	LOT NUMBER: _____
SOURCE:	Human milk	
NOTE:	Any donor of the human source material used in the manufacturing of this material was tested and found nonreactive for hepatitis B surface antigen (HBsAG), for antibody to hepatitis C virus (anti-HCV), for antibody to human immunodeficiency virus-1 (anti-HIV-1), for antibody to human immunodeficiency virus-2 (anti-HIV-2), for antibody to syphilis (RPR), for human T-cell lymphotropic virus-I (HTLV-1), and for human T-cell lymphotropic virus-II (HTLV-2). Regardless of the test data this product should be handled observing the same Universal Safety Precautions employed when handling any potentially infectious material.	
QUANITITY:	50 µg	
CONCENTRATION:	_____ µg/ml	

Discovery Labware, Inc., Two Oak Park, Bedford, MA 01730, Tel: 1.978.442.2200 (U.S.)
CLSTechServ@Corning.com www.corning.com/lifesciences

CORNING

 Lot Number: _____

FORMULATION:	As a liquid in Dulbecco's Phosphate Buffered Saline
PURITY:	≥95% by SDS-PAGE
QUALITY CONTROL:	Tested and found negative for the presence of bacteria, fungi, and mycoplasma.
STORAGE:	Stable when stored at -70°C. Avoid multiple freeze-thaws. Do not store in frost-free freezer. **KEEP FROZEN**.
EXPIRATION DATE:	

REFERENCES:

1. Rangaswami, H., et al., Trends in Cell Biol., **16**:79 (2006).
2. Johnson, G.A., et al., Biol. of Reprod., **69**:1458 (2003).
3. Yokosaki, Y., et al., Matrix Biol., **24**:418 (2005).
4. Denhardt, D.T., et al., J. Clinical Invest., **107**:1055 (2001).
5. Senger, D.R., et al., Am. J. Pathol., **149**:293 (1996).
6. Mazzali, M., et al., Q.J. Med., **95**:3 (2002).
7. Senger, D.R., et al., Biochim. Biophysics Acta, **996**:43 (1989).

_____ _____

Quality Assurance **Date**

Discovery Labware, Inc., Two Oak Park, Bedford, MA 01730, Tel: 1.978.442.2200 (U.S.)
CLSTechServ@Corning.com www.corning.com/lifesciences

CORNING

For Research Use Only. Not for use in diagnostic or therapeutic procedures.