PRODUCT DATA SHEET

Product: Osteonectin (human)

Cat. No.: **BP-013 (50 µg)**

Background:
Osteonectin is an acidic, noncollagenous glycoprotein originally isolated from fetal and adult bovine bone matrix. *In vitro* bovine bone osteonectin binds type I collagen, calcium (K_d=3x10^{-7} M) and hydroxyapatite (K_d=8x10^{-8} M) and has been shown to be a potent inhibitor of hydroxyapatite-seeded crystal growth. In this context it has been suggested that osteonectin may play an important role in the regulation of bone metabolism by binding hydroxyapatite to collagen.

Recently, proteins homologous to osteonectin have been identified in a number of cell types, most of which are associated with extracellular matrix production. The amino acid sequence (from cDNA sequences) of one of these proteins, human placental SPARC is identical to human bone osteonectin.

Osteonectin has also been identified as an alpha granule component of human platelets and is secreted during activation. A small portion of the secreted osteonectin is expressed on the platelet cell surface in an activation dependent manner.

Purified platelet osteonectin is a single chain molecule which exhibits a slightly larger apparent molecular weight than that of osteonectin derived from bone. The NH_2-terminal sequences of platelet and bone-derived osteonectin are identical, but the two proteins differ with regard to the extent of glycosylation.

Localization:
Bone, platelets, plasma (0.9 µg/mL)*, serum (2.6 µg/mL)**.

Mode of Action:
Unknown

Molecular Weight:
32,700 (from cDNA)

Extinction Coefficient:
$E^{1\%}_{1\ cm,\ 280\ nm}$ = 8.0

Structure:
Single chain, NH_2 terminal acidic domain, cysteine-rich serpin homology domain, 2 EF hand domains.

Isoelectric Point:
5.5***

Post-translational Modifications:
Phosphoserine

Production:
Human platelet osteonectin is isolated from thrombin activated platelets.

Purity:
~95%

Format:
Supplied as solution in 0.02 M Tris, 0.15 M NaCl, pH 7.4. Purity determined by SDS-PAGE.

Storage:
Store at -80°C.

Limitations:
For *in vitro* research use only. Not for use in diagnostics or in humans.

Warranty:
No warranties, expressed or implied, are made regarding the use of this product. KAMIYA BIOMEDICAL COMPANY is not liable for any damage, personal injury, or economic loss caused by this product.

* Determined for human plasma
** Determined for human serum
***Determined for bovine bone