SYMANSIS
CELL SIGNALING SCIENCE

Product Data Sheet

Human Cell Expressed MIP-1 alpha HCX Catalog Number 1006_

Source	A DNA sequence encoding the human MIP-1 alpha protein sequence (containing the signal peptide sequence, and the mature human MIP-1 alpha sequence) was expressed in modified human 293 cells.
Molecular Mass	Symansis MIP-1 alpha HCX migrates in SDS-PAGE at approximately 10 kDa. This compares with the predicted molecular mass of 7.4kDa.
pI	Symansis MIP-1 alpha HCX migrates in 2D PAGE with an observed pI of 4.8. This compares with the predicted pI of 4.77.
Purity	>95%, as determined by SDS-PAGE and visualized by silver stain.
Formulation	When reconstituted in 0.5 ml sterile phosphate-buffered saline, the solution will contain 1% human serum albumin (HSA) and 10% trehalose.
Reconstitution	It is recommended that 0.5 ml of sterile phosphate-buffered saline be added to the vial. Working concentrations of MIP-1 alpha HCX should be less than 100ng/ml to avoid aggregation. Refer to Menten P *et al.* (2002) *Cytokine and Growth Factor Reviews* **13** 455-481.
Storage	Lyophilized products should be stored at 2 to 8°C. Following reconstitution short-term storage at 4°C is recommended, and longer-term storage of aliquots at -18 to -20°C. Repeated freeze thawing is not recommended.
Background Information	Human Macrophage inflammatory protein-1alpha (MIP-1 alpha; MIP-1a) belongs to the chemokine family. Chemokines are small secreted molecules containing 4 conserved cysteine residues and 2 disulfide linkages. The first two cysteine residues of chemokine molecules may be in one of the following configurations, CC or CXC and this defines the two major chemokine sub-families. MIP-1 is a CC chemokine and its recent designation is chemokine ligand 3 (CCL3). MIP-1 alpha is constitutively expressed from platelets and bone marrow CD34 progenitor cells. MIP-1 alpha expression can also be induced by bacteria or bacterial products such as LPS in monocyte/macrophages, dendritic cells, neutrophils, microglial cells and in activated B and T cells. Expression of MIP-1 alpha has also been described in non-immune somatic cells such as fibroblasts, mucosal epithelial cells, osteoblasts and vascular smooth muscle cells. As a chemokine, MIP-1 alpha plays a role in the recruitment of leukocytes to the sites of infection, and is involved in the activation of cells and the inflammatory response. MIP-1 alpha is chemotactic for monocytes/macrophages, T cells, neutrophils, eosinophils, basophils, dendritic cells and NK cells. MIP-1 alpha also plays a role in the transendothelial migration of monocytes, T lymphocytes, neutrophils, and dendritic cells at sites of inflammation. MIP-1 alpha and MIP-1 beta are the major HIV-suppressive factors produced by CD8+ T-cells. Recombinant MIP-1 alpha has been shown to inhibit different strains of HIV-1, HIV-2, and simian immunodeficiency virus (SIV) in a dose-dependent manner. MIP-1 alpha is a peptide of 92 amino acids. MIP-1 alpha occurs naturally as a homodimer or a heterodimer with MIP-1 beta. For a review of MIP-1 alpha migration and signaling cascades please refer to Lentzsch S *et al.* (2003) *Blood* **101**(9): 3568-73.

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Theoretical Sequence	ADTPTACCFSYTSRQIPQNFIADYFETSSQCSKPGVIFLTKRSRQVCADPSEEWVQKYV SDLELSA
	N-terminal sequencing of Symansis MIP-1 alpha HCX confirms that the protein starts with the sequence ADTPTA.