

Recombinant Ovine Trophoblast Protein-1

Cat. No. TP-1-380 **Lot. No.** (See product label)

SPECIFICATION

Product Overview Recombinant Ovine Interferon-Tau produced in *E. Coli* is a single, non-glycosylated, polypeptide chain containing 172 amino acids and having a molecular mass of 19914.7 Dalton. The IFN-Tau is purified by proprietary chromatographic techniques.

Species Ovine

Source E.coli

Description IFN-tau is also known as TP-1 (trophoblast protein-1) is a new class of type I IFN that is secreted by the trophoblast and is the signal for maternal recognition of pregnancy in sheep. IFN- tau has potent immunosuppressive and antiviral activities similar to other type I IFN but is less cytotoxic than IFN-alpha and IFN-beta. The current investigation concerns the effect of recombinant ovine IFN- tau (rOIFN- tau) on the modulation of MHC class I and II expression on cloned mouse cerebrovascular endothelial (CVE) cells. IFN-tau induced tyrosine phosphorylation of Stat1 and upregulated the expression of MHC class I on CVE. One proposed action by which type I IFN reduces the relapse rate in MS is via interference with IFN-γ-induced MHC class II expression. IFN- tau was shown to downregulate IFN-γ-induced MHC class II expression on CVE and, hence, may be of potential therapeutic value in downregulating inflammation in the central nervous system (CNS). IFN- tau did not upregulate the expression of MHC class II on CVE. IFN- tau also inhibited the replication of Theiler's virus in CVE.

Amino Acid Sequence The sequence of the first five N-terminal amino acids was determined and was found

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	to be Cys-Tyr-Leu-Ser-Arg.
Biological Activity	The specific activity as determined in a viral resistance assay using bovine kidney MDBK cells was found to be 1×10^7 IU/mg.
Physical Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
Purity	Greater than 95.0% as determined by: (a) Analysis by RP-HPLC. (b) Analysis by SDS-PAGE.
Formulation	Lyophilized from (1mg/ml) solution containing PBS pH-7.4.
Solubility	It is recommended to reconstitute the lyophilized Interferon Tau in sterile 18MΩ-cm H ₂ O not less than 100g/ml, which can then be further diluted to other aqueous solutions.
Protein Content	Protein quantitation was carried out by two independent methods: 1. UV spectroscopy at 280 nm using the absorbency value of 1.027 as the extinction coefficient for a 0.1% (1mg/ml) solution. This value is calculated by the PC GENE computer analysis program of protein sequences (IntelliGenetics). 2. Analysis by RP-HPLC, using a calibrated solution of IFN-Tau as a Reference Standard.
Stability	Lyophilized Interferon-Tau although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution IFN-Tau should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

GENE INFORMATION

Gene Name TP-1 trophoblast protein-1 [*Ovis aries*]

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Synonyms	Interferon-tau; TP-1; trophoblast protein-1 ; Trophoblastin; Antiluteolysin; Trophoblast antiluteolytic protein; OTP; IFNT1; IFNT4; Interferon tau-1; Interferon tau-4
Gene ID	100144750
mRNA Refseq	NM_001123399
Protein Refseq	NP_001116871
UniProt ID	P56828

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