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## Product Data Sheet

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Product Name: IFN tau Ovine  
 Cat. No.: GP20408  
 Batch No.: 1

### Product Data

|                     |   |                    |                       |
|---------------------|---|--------------------|-----------------------|
| Purity              | >98%  | Source             | Escherichia Coli.     |
| Physical Appearance | solid   | Shipping Condition | Shipped at Room temp. |
| Synonyms            | IFN-tau1; Trophoblast protein 1; TP-1; Trophoblastin; Antiluteolysin; Trophoblast antiluteolytic protein; IFN-tau; IFN tau-1.   |                    |                       |
| Amino Acid Sequence | The sequence of the first five N-terminal amino acids was determined and was found to be Cys-Tyr-Leu-Ser-Arg.   |                    |                       |
| Solubility          | It is recommended to reconstitute the lyophilized IFN Tau in sterile 18MΩ-cm H <sub>2</sub> O not less than 100µg/ml, which can then be further diluted to other aqueous solutions. |                    |                       |
| Formulation         | Lyophilized from (1mg/ml) solution containing PBS pH-7.4.   |                    |                       |

### Introduction

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.

### Biological Activity

**Caution: Product has not been fully validated for medical applications. For research use only.**

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The specific activity as determined in a viral resistance assay using bovine kidney MDBK cells was found to be 10,000,000IU/mg.

### Stability

Lyophilized IFN-Tau although stable at room temperature for 3 weeks, should be stored desiccated below  $-18^{\circ}\text{C}$ . Upon reconstitution IFN-Tau should be stored at  $4^{\circ}\text{C}$  between 2-7 days and for future use below  $-18^{\circ}\text{C}$ . For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

### Background

IFN-Tau Ovine Recombinant 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.

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