



## *Certificate of Origin*

**Date** 12-August-2010

**Product Name** Cell Therapy Systems Recombinant Human IL-4

**Catalog Number** CTP0041, CTP0043

**Lot Number** Information applies to all lots produced.

**Manufacturing Information** Manufactured under ISO13485 Quality Standard

**Manufacturing Site** Invitrogen, Camarillo, California, USA

**Raw Material Information** Recombinant human IL-4 is produced in E. coli and purified via sequential chromatography. The product contains no materials directly of animal origin. The product does utilize animal derived components in the manufacturing process.

**Animal Derived Components:** The fermentation feed contains tryptone derived from bovine milk of US or Australia origin. The fermentation media is sterilized at 122.5°C for 45 minutes, 15 psi. IL-4 is purified by immobilized metal affinity chromatography (non-animal) and ion exchange chromatography. The leader sequence is cleaved by thrombin derived from human plasma. The serum is certified to be negative for HBsAg and for Antibodies to HIV and HCV. The final purification step is by Reverse Phase Chromatography.

This document was prepared by:

A handwritten signature in blue ink that reads "Eugene Montross".

Eugene Montross  
Quality Assurance

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