

# RECOMBINANT CARBOXYPEPTIDASE-B RECOMBINANT TRYPSIN FOR MANUFACTURING OF RECOMBINANT INSULIN

A COMPLETE SOLUTION FOR COST-EFFECTIVE MANUFACTURING OF RECOMBINANT HUMAN INSULIN

## RECOMBINANT CARBOXYPEPTIDASE-B RECOMBINANT TRYPSIN

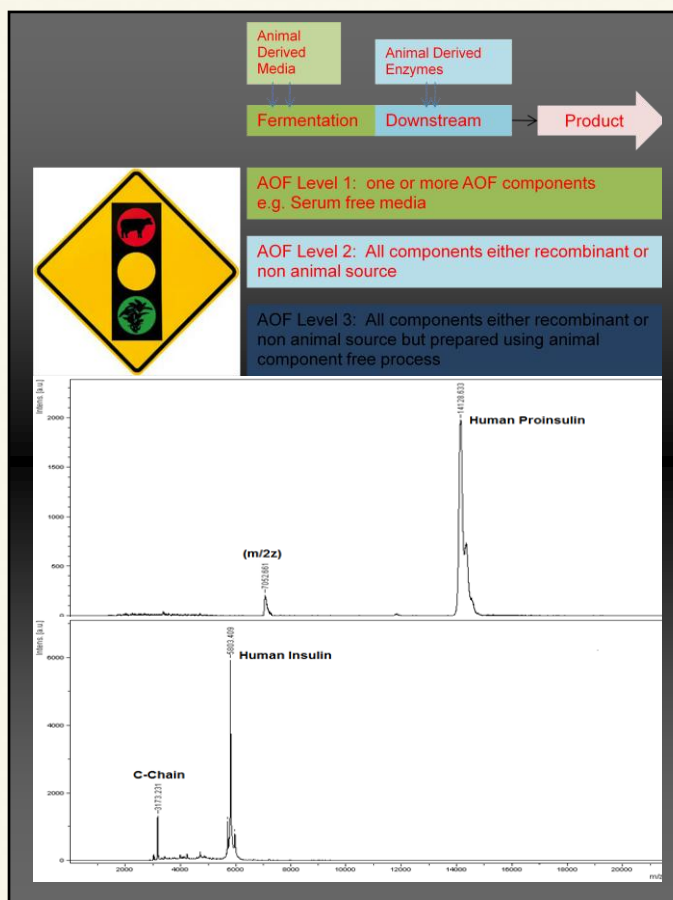
### ANIMAL ORIGIN FREE

In the past 20 years, because methods of producing recombinant human insulin have come to the forefront, there has been a shift away from using bovine- or porcine-derived insulin. Recombinant insulin is generally a primary level AOF component. However, as worries about TSE and other animal-origin contaminants have increased, many biopharmaceutical companies have begun to consider producing secondary level AOF insulin. One of the greatest stumbling blocks to producing secondary level AOF insulin is at the step where pro-insulin is cleaved to produce active insulin. Both enzymes used in the cleavage, i.e. trypsin and carboxypeptidase B are traditionally derived from bovine or porcine sources.

BioGenomics offers **Recombinant Trypsin and Recombinant Carboxypeptidase-B** as a cost effective solution to produce a secondary level AOF insulin. The value addition and safety offered in this secondary level AOF version provides a tremendous advantage to insulin manufacturers to fetch better market price in already crowded and price-sensitive insulin market-place. In addition to the therapeutic market, one such emerging market is in the use of AOF level 2 recombinant Insulin in mammalian cell culture to delay apoptosis and thereby to increase productivity products such as recombinant monoclonal antibodies.

### USE OF RECOMBINANT CARBOXYPEPTIDASE B AND RECOMBINANT TRYPSIN IN INSULIN MANUFACTURING

Figure 1 demonstrates the generation of Insulin from human Proinsulin using BioGenomics' recombinant Trypsin and recombinant Carboxypeptidase B. The experimental parameters included buffer pH (from 7.0 to 10.5), trypsin/substrate ratio (from 1:50 to 1:1000), digestion time (from 10min to 6h) and temperature (from 4°C to 37°C).



**Figure 1: MALDI-MS spectra for Enzymatic Digestion of human Proinsulin.** Panel A corresponds to human proinsulin; and Panel B corresponds to enzymatic digestion of human proinsulin and generation of human Insulin.

### SALIENT FEATURES

- ANIMAL ORIGIN FREE
- CONSISTENT ASSURED SUPPLY
- NO CONTAMINATION FROM CHYMOTRYPSIN OR OTHER ENZYMES
- COST EFFECTIVE
- COMPLETE DOCUMENTATION
- CUSTOM SOLUTIONS TO PROCESS