

Production of Human BMP-7 with Recombinant E. coli and B. subtilis

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Abstract : The polypeptide representing the mature part of human BMP-7 was cloned and efficiently expressed in Escherichia coli and Bacillus subtilis, which had a clear band for hBMP-7, a homodimeric protein with an apparent molecular weight of 15.4 kDa. Recombinant E.coli produced 111 pg hBMP-7/mg of protein hBMP-7 through IPTG induction. Recombinant B. subtilis also produced 350 pg hBMP-7/ml of culture medium. The hBMP-7 was purified in 2 steps using an FPLC system with an ion exchange column and a gel filtration column. The hBMP-7 produced in this work also stimulated the alkaline phosphatase (ALP) activity in a dose-dependent manner, i.e. 2.5- and 8.9-fold at 100 and 300 ng hBMP-7/ml, respectively, and showed intact biological activity.

Keywords : B. subtilis, E. coli, fermentation, hBMP-7

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