



**PRODUCTION, PARTIAL PURIFICATION AND CHARACTERIZATION OF CMC_{Case}
(Carboxy methyl cellulase) FROM *B. SUBTILIS*****KHAN JA AND KUNAL THAKUR****R& D Division, MRD LifeSciences Private Limited, Lucknow, Uttar Pradesh, India****ABSTRACT**

In the present study 10 bacterial isolates were isolated from the three different-different places soil sample by serial dilution and agar plate technique. These bacterial isolated colony were identified on the basis of colony morphology given by Bergey's manual method and named as **MJKS01** to **MJKS10**. Screening of the colony for the cellulolytic activity was done on the MAM (minimal agar medium) supplemented with 1% CMC. After screening **MJKS07** show the maximal cellulolytic activity and was further identified as *Bacillus subtilis* accordance to the Bergey's manual. **MJKS07** soil sample was taken from near railway station, samsangath, Chandigarh India. Cellulase production was carried out by submerged fermentation. In present study *Bacillus subtilis* isolated from samsangath, Chandigarh India soli sample produced significant amount of cellulases after 8 Day fermentation in CMC containing **0.00192U/ml** activity, was obtained at 37° C and pH 7. Effect of nutrient factor for *Bacillus subtilis* are identified by media optimization at different sources and different concentration. In nitrogen sources 0.5% NH₄Cl show 0.027U/ml enzyme activity, 0.5% CMC show 0.024U/ml enzyme activity and in metal ion sources 0.01% Cu show the 0.017U/ml enzyme activity. In Carbon sources lactose is the best medium for the *Bacillus subtilis* they have 0.0266U/ml enzyme activity. *Bacillus subtilis* have highest enzyme activity at pH 7 & 9 (0.0018U/ml) and temperature 20° C & 37° C (1.8U/ml). Partial purification of crude cellulase enzyme was done by ammonium salt precipitation up to 70% followed by dialysis.

Keywords: Cellulases; *Bacillus subtilis*; Nitrogen sources; Carbon sources; CMC_{Case}; Soil sample; Metal Ion; MAM