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Chryseobacterium species isolated from decaying biomass produces endoglucanase and xylanase

Kunle Okaiyeto, Asisipho Nkohla, Uchechukwu U Nwodo, Leonard V Mabinya and **Anthony I Okoh**
University of Fort Hare, South Africa

Lignocellulosic materials are potential sources of isolating bacteria that can be used to produce an important value added products such as cellulase (endoglucanase) and xylanase in the industries. Based on the above mentioned premise, this study aimed at assessing endoglucanase and xylanase-degrading potentials of a bacterial isolate from decaying sawdust samples collected from a wood factory at Melani village, Nkonkobe Municipality of the Eastern Cape Province, South Africa. The bacteria showed high activity for endoglucanase and xylanase when grown on carboxymethyl cellulose (CMC) and birch wood xylan as sole carbon sources, respectively. The bacterial isolate was identified through 16S rDNA sequencing and the gene sequence was found to have 98% similarity with that of *Chryseobacterium taichungense*. The sequence was deposited in the GenBank as *Chrysobacterium taichungense* SAMRC-UFH2 with accession number KU171370. Optimum culture conditions for endoglucanase and xylanase production included: pH 6, incubation temperature (25 °C), agitation rates of 50 rpm and 150 rpm for endoglucanase and xylanase, respectively. The high enzyme activities exhibited by this bacterial strain portend it as a potentially relevant candidate as a producer for value added products of biotechnological importance.

kokaiyeto@ufh.ac.za