

Identification of cellulolytic bacteria isolated from the termite *Coptotermes curvignathus* (Holmgren)

ABSTRACT

The aim of the present research was to isolate and identify cellulolytic bacteria from the gut of the local termite *Coptotermes curvignathus* (Holmgren) present in the vicinity of the University of Putra Malaysia. The isolates were cultured in a medium containing carboxymethyl-cellulose and cellobiose. The bacterial species were tentatively identified by using the Biolog reader as well as the Bergey's manual and later confirmed by 16S rRNA sequence homology. The species were all novel strains and identified as *Bacillus cereus* strain Razmin A, *Enterobacter aerogenes* strain Razmin B, *Enterobacter cloacae* strain Razmin C, *Chryseobacterium kwangyangense* strain Cb and *Acinetobacter* strain Raminalimon. Biolog reader was not able to identify one of the bacterial species in which it was identified as *C. kwangyangense* strain Cb by 16S rRNA sequence homology. The GenBank NCBI-EMBL accession numbers for the bacterial strains are EU294508, EU305608, EU305609, EU169201 and EU332791 for *B. cereus* Razmin A, *E. aerogenes* strain Razmin B, *E. cloacae* strain Razmin C, *C. kwangyangense* strain Cb and *Acinetobacter* strain Raminalimon, respectively.

PRACTICAL APPLICATIONS The experiment describes the isolation and identification of cellulolytic bacteria from termites, using Biolog reader and polymerase chain reaction technique. Termites are common insects in tropical regions and thrive on wood and cellulolytic materials. Hence, the bacteria isolated may be useful in the degradation of cellulosic materials to increase their digestibility and possibly production of metabolites and enzymes.

Keyword: *Acinetobacter*, *Bacillus cereus*, Bacteria (microorganisms), *Chryseobacterium*, *Coptotermes curvignathus*, *Enterobacter aerogenes*, *Enterobacter cloacae*, Hexapoda, Isoptera