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## Biodiversity of rhizobial strains from faba bean (*Vicia faba*)

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*Rhizobium* is the most well-known species of a group of bacteria that acts as the primary symbiotic fixer of nitrogen. These bacteria can infect the roots of leguminous plants, leading to the formation of nodules where the nitrogen fixation takes place. Eight rhizobial strains were isolated from healthy faba bean roots growing in different geographic areas in north Egypt. The native strains were presumptively identified as *Rhizobium leguminosarum biovar viciae*. They were tested against antibiotics resistance and growth on different carbon source as biochemical parameters. Also, Rl. 2 and Rl. 10 were tolerating to high NaCl concentrations and their plasmid profiles contained additional large plasmid with molecular weight about 23 kb. A relationship between salt tolerance and extra plasmid was indicated. Analysis of similarity among rhizobial strains by using the RAPD-PCR technique showed a high level of genetic polymorphism, grouping the rhizobial strains into two different clusters. These clusters reflexed the similarity among genotype of strains independent of their geographic locations. By using 16S rDNA specific amplification of the three highest salt tolerant strains as well as those of type strains belonging to *Rhizobium leguminosarum biovar viciae*. The 16S rDNA sequences of the strains were determined and were aligned and compared with the 16S rDNA sequences of other members of the family *Rhizobiaceae* available in the Gene Bank database. The obtained dendrogram indicated that the 16S gene could be used as a diagnostic molecular marker for strains belonging to the bv. *viciae*.

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## Study of differences observed between curds obtained by milk-coagulation with proteases from *Aspergillus Sp.* and rennet

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Three strains of fungi were isolated and identified as *Aspergillus flavus*, *Aspergillus awamori* and *Aspergillus tubingensis* showed good enzyme activity on casein, 1562,5 U., 1357,14 U. and 2155,55 U. respectively. After purification by molecular exclusion chromatography, affinity chromatography and SDS-PAGE helped find three enzymes having approximately molecular weight of 35KDa for *A. flavus* and 55KDa for *A. awamori* and *A. tubingensis*. The optimum pH of activity is 5, 4.5 and 4.0 and the optimum temperature of activity is 35°C, 40°C and 30°C for *A. flavus*, *A. awamori* and *A. tubingensis* respectively. These enzymes used to coagulate fresh cow milk, showed that the milk-coagulation time compared with rennet coagulation time was very short, in the same conditions of coagulation. Curd firmness and brightness are very interesting, the pH of different curds is measured and several parameters determined to highlight the industrial interests of the produced enzymes.

### Biography

Benlounissi Aïcha holds a Doctorate degree in Biotechnology and Microbiological Engineering from Mentouri University (Constantine, Algeria), she is Lecturer at 20Août 1955 University (Skikda, Algeria). She has published papers and communicated her works at various international conferences.

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