

عنوان مقاله:

Isolation and identification of a potent histamine oxidase producing bacterium from nettle soils

محل انتشار:

بیستمین کنگره بین المللی میکروب شناسی ایران (سال: 1398)

تعداد صفحات اصل مقاله: 1

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خلاصه مقاله:

Introduction and Objectives: Histamine poisoning, an allergy like food poisoning, caused by ingesting scombroid fishes which have high amount of histidine in their muscle. Histamine is formed by decarboxylation of histidine through the activity of microorganisms. Though it is not present in fresh fish, Histamine in fish is a good indicator of hygienic food quality. Current methods used for histamine determination (HPLC) are complicated, time-consuming and expensive. Therefore, it is essential to implement rapid methods for analysis of fishery products. The main purpose of this study was the isolation of bacteria producing histamine oxidizing enzyme for development an enzymatic method for histamine determination. **Materials and Methods:** For isolation bacteria with potent histamine oxidase, several soil samples collected at different places in Iran. We used histamine as main nitrogen and carbon source in culture media and isolation several histamine degrading bacteria. Then we designed primer sets for histamine oxidase gene and amplified by PCR. The histamine oxidase-producing bacteria were chosen from histamine-utilizing strains. **Results:** From the samples of soil, about 100 histamine utilizing bacteria were isolated that 4-strain had histamine oxidase gene revealed by PCR amplification and gene sequencing. One strain, N1A3101 was selected and used for further experiments. Strain N1A3101 was found to be similar to *Glutamicibacter endophyticus* (homology: 98.5%, based on 16SrDNA). Crude enzyme showed potent activity toward histamine (208 unit/ml), whereas it was inactive toward other diamines and polyamines. **Conclusion:** We have found a potent histamine oxidase from an indigenous bacterium that acts more specifically on histamine. By optimization of the cultivation condition and purification, the N1A3101 enzyme .can be used for development of a test kit for histamine determination in fishery products

کلمات کلیدی:

.Histamine poisoning, Enzymatic methods, *Glutamicibacter endophyticus*

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