
Bacterial bioluminescence: Biology and genomic aspects

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Abstract

Primarily luminous bacteria are an attribute of bioluminescence of eukaryotic organisms like squids and some fishes. These bacteria are also found from marine, terrestrial and freshwater environments as free living or in association with different flora and fauna [1]. The influences of physical factors such as different wavelengths of light, osmolarity, gravity on luminescence of luminous bacterial members are discussed. Existence of geographical area (tropical and temperate) specific distribution of luminous bacteria is addressed. The role of gene deletion and horizontal gene transfer on luminescence production by different non-luminous bacterial members are covered. Recent evidence reveals that *luxA* gene is found to exist both on chromosomal DNA as well as plasmid DNA of *Vibrio campbellii*. The bioactive potential of different luminous bacteria has been reported recently by observing bioactive compounds of indole, phenol, 2,4-bis(1,1-dimethylethyl)-, dibutyl phthalate and 1,2-Benzenedicarboxylic acid, butyl octyl ester [2]. This presentation will cover the important recent discoveries on biology and genome aspects of luminous bacterial species.

Keywords: luminous bacteria, biodiversity, genomics, physico, chemical factors

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