

## **Genome sequence of *Photobacterium* sp. strain J15: an insight view for conservation genetics and molecular engineering**

### **ABSTRACT**

The genus *Photobacterium* was one of the earliest known bacterial taxa (Beijerinck 1889) and it comes from the family Vibrionaceae, one of the most widely distributed groups of prokaryotes that have radiated into hundreds of existing niches in the environment. However, the precise evolutionary history of this bacteria could not be infer due to the lack of whole genome sequencing data on *Photobacterium* available publicly. *Photobacterium* sp. strain J15 is a marine bacterium which was isolated from Tanjung Pelepas, Johor and it initially was studied for its lipase and asparaginase producing properties. Lipases has been used widely in the production of food, detergent and also in pharmaceutical industry while asparaginase on the other hand is on the World Health Organization's List of Essential Medicines. Recently, it is also found out that *Photobacterium* species have the ability to produce DHAs, which is recommended for infant's consumption. However, there is a limitation in the industrial use of these enzymes and it is mainly due to the high production cost which could be overcome by molecular technologies. Here we present the draft genome sequence of this *Photobacterium* sp. It was sequenced using Illumina technology and the genome sequence was then being assembled and the assembly produced 23 scaffolds with a final reading of 5,647,128 bp. However, there are 15,246 of unsequenced nucleotides which would be closed by using Sanger sequencing. The whole genome sequence and the future genome scale metabolic model of the *Photobacterium* sp. strain J15 is hope to uncover the mechanisms of this bacterium which will ease the molecular engineering applications besides being important in analysing the evolutionary biology and future genetics conservation of this interesting group of bacteria.

**Keyword:** *Photobacterium*; Marine bacterium; Genome sequencing