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Analysis of Genome Grimelysin-Containing Locus in the Genome of *Serratia grimesii* A2

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Abstract

© 2016, Springer Science+Business Media New York. *Serratia grimesii* strain A2 was isolated from buffered solution of actin by workers of Institute of Marine Biology, Vladivostok city [1]. This bacterium attracts special interest because of its ability to produce intracellular proteinase grimelysin which hydrolyzes actin in the single site and thus abolishes actin polymerization [1]. In addition to this well-characterized function, grimelysin is also required for invasion of bacteria into eukaryotic cells [1]. Here, we present the analysis of genome sequence of *S. grimesii* strain A2. The 5133.068 bp draft genome consists of 120 contigs with 4999 coding sequences, including 82 RNA genes. Genome sequencing and annotation revealed the presence of grimelysin gene in the operon with the gene of hypothetical protein of unknown function and the presence of regulatory gene upstream of it. In silico analysis of promoter sequences allowed the identification of putative binding sites for regulatory proteins. We anticipate that the *S. grimesii* strain A2 genome analysis will advance the current knowledge about grimelysin functions and regulation of its expression.

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Keywords

Genome sequencing, Grimelysin, Locus, Operon, *Serratia grimesii*

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