

# 21<sup>st</sup> European Biotechnology Congress

October 11-12, 2018 | Moscow, Russia

## Luciferase of the syllid polychaete *Odontosyllis undecimdonta*

Ekaterina S Shakhova<sup>1</sup>, Alexey A Kotlobay<sup>1</sup>, Darrin T Schultz<sup>2</sup>, Ilia V Yampolsky<sup>1,3</sup> and Yuichi Oba<sup>4</sup>

<sup>1</sup>Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russia

<sup>2</sup>University of California Santa Cruz, USA

<sup>3</sup>Pirogov Russian National Research Medical University, Russia

<sup>4</sup>Chubu University, Japan

Bioluminescence is one of the most beautiful and fascinating natural phenomena. Methods for biological and medical research and various techniques based on luciferin-luciferase reactions play an important role in modern science and are widely used from analytical methods *in vitro* and *in vivo*, including tests for various analytes, to real time bio-imaging of live systems. *Odontosyllis undecimdonta* is a marine syllid polychaete that produces bright internal and exuded bioluminescence. Despite over fifty years of biochemical investigation into *Odontosyllis* bioluminescence, the light-emitting small molecule substrate and catalyzing luciferase protein have remained a mystery. Here we describe the *O. undecimdonta* luciferase, its amino acid sequence and some biochemical properties. Moreover, no homologous proteins in publicly available datasets were identified. This suggests that the syllid polychaetes possess an evolutionarily unique luciferase among all characterized luminous taxa.

### Biography

Ekaterina S Shakhova is student of biological faculty at Moscow State University

ekashakhova31@gmail.com

### Notes: