**Ministry of Science and Higher Education of the Russian Federation**

**ITMO University**

**SUMMARY**

**OF A GRADUATION THESIS**

**Student** Anton Andreevich\_Zamyatin\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(full name)

**Title of the thesis** Chromosome scale genome assembly from long noisy reads using Hi-C data.

**Name of organization**  ITMO University\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**DESCRIPTION OF THE GRADUATION THESIS**

1 Research objective Produce and validate two chromosome-scale assemblies for mosquito species. Produce and validate two chromosome-scale assemblies for barnacle species.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2 Research tasks Performing the best strategy of genome assembly from long nanopore reads and draft assembly polishing using short Illumina reads for two mosquito species. Performing assembly chromosome-level scaffolding using Hi-C data. Genomes assembly assessment and validation. Performing genome assembly for two barnacle species from long pacbio reads. Polishing of assemblies using short Illumina reads. Genomes assembly assessment and validation.

3 Number of sources listed in the review section

4 Total number of sources used in the thesis

5 Sources by years:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Russian** | | | | **Foreign** | | |
| In the last 5 years | 5 to 10 years | More than 10 years | In the last 5 years | | 5 to 10 years | More than 10 years |
| - | - | - |  | |  |  |

6 Use of online (internet) resources No

7 Use of modern computer software suites and technologies (List which ones were used and for which section of the thesis)

|  |  |
| --- | --- |
| **Software suites and technologies** | **Thesis section** |
|  |  |

8 Short summary of results/conclusions

Different strategies for genome assembly and polishing were performed, results are assessed. Draft mosquito genomes were scaffolded into chromosome-level assemblies. Assemblies were validated. Two barnacle species were assembled with different assemblers, results are assessed. Genomes were polished and validated.

9 Grants received while working on the thesis No

10 Have you produced any publications or conference reports on the topic of the thesis No

Student Anton Andreevich Zamyatin\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Full name) (signature)

Thesis supervisor Alexeev N.V \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Full name) (signature)

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