DEUTSCHES
KREBSFORSCHUNGSZENTRUM
IN DER HELMHOLTZ-GEMEINSCHAFT

Deutsches Krebsforschungszentrum | B020 | PF 101949 | D-69009 Heidelberg

Unit
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W180

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Research Internship, Diploma or Master Project

You are:
Student of Bioinformatics, Biotechnology, Biology, Informatics or a related field

The Department of Functional Genome Analysis and the Bioinformatics Group (HUSAR) of the German Cancer Research Center is offering a Bachelor or Master project, which will deal with a common bioinformatics project on synthetic biology.

At the moment, the smallest possible genome, that encodes enough genes for sustainable growth in culture, consists of 475 genes and 6×10^5 base pairs. An untested hypothesis has been proposed which claims that shrinking said genome to 382 genes would suffice for a synthetic organism to grow *in vitro*.

Doing our genome compression project, we want to identify stretches of DNA that allow further shrinkage of said genomes using bioinformatics methods. The aim is to improve and simplify *de novo* genome synthesis. Later on, we want to test the identified sequences *in vitro* and validate the theoretic results.

During bioinformatics analysis, protein sequences have to be compared to identify overlapping stretches and tested for consistency with the aim to reorder them.

Requirements:
Knowledge of molecular biology, interest for bioinformatics. Programming experience (Perl preferred) is of advantage.

Contact:
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