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Author <b>Lina Amlinger</b>		
Title (English) <b>Effects of mutations in the repeat sequence of the CRISPR immune system</b>		
Title (Swedish)		
Abstract Clustered regularly interspaced short palindromic repeats (CRISPR) are repeated short sequences separated by unique short sequences called spacers. These spacers match viruses, plasmids and other mobile elements; therefore CRISPR was identified as an adaptive, heritable immune system. CRISPR immunity has three stages: adaptation, expression and interference. For this project, 12 mutations were designed and introduced into the repeats of a CRISPR cassette with only one spacer and two repeats. The functionality of the mutants was tested in plaque assay experiments. The tests showed that almost all mutants exhibited loss of protection against the tested virus. Four mutants were tested in a northern blot, all of which were revealed to be defective in the processing of the pre-crRNA. The system used need optimization as problems with the construct might make it more sensitive to mutations.		
Keywords Clustered regularly interspaced short palindromic repeats, CRISPR, immunity, virus, plaque assay, repeat, spacer, Cascade, CasE, phage lambda ( $\lambda$ ), <i>Escherichia coli</i> .		
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