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Study of sequences in *Nicotiana* genomes acquired from *Agrobacterium* by horizontal gene transfer

Galina Khafizova
Saint-Petersburg State University, Russia

Agrobacterium is a soil bacterium that transfer fragment of its plasmid (Ti or Ri) into plant's genomes; this fragment is called T-DNA. In 1983, homological to *Agrobacterium* sequences were found in the genome of untransformed *Nicotiana glauca* plant. This sequence was called cT-DNA (cellular T-DNA). Later cT-DNA was found in genomes of 14 more species of genus *Nicotiana*. Genus *Nicotiana* contains 3 subgenera. CT-DNAs in *Nicotiana* species inside one sub-genus were found to be more similar than cT-DNAs in species from different subgenera. It can be a result of multiple tranformation events in the evolution of genus *Nicotiana*. It was also shown that *Nicotiana* species from different sub-genus differ in their cT-DNA insertion sites, though only 2 species were analyzed. To know more about it, more species of *Nicotiana* need to be analyzed. For this purpose a test-system based on PCR was developed. Each system consists of 2 primers combinations. First type includes primers for plant's sequences, flanking T-DNA from both sides. Getting the amplicon with these primers means lack of cT-DNA in this site. Second type includes one primer for plant's sequence, flanking T-DNA and another one for *Agrobacterium* sequence close to the border of the insert, so the result of PCR is the sequence of plant-bacterium-border. Using this system for cT-DNA analysis can help to get new insights in this topic.

Biography

Galina Khafizova was graduated from Saint-Petersburg State University in 2015. Presently she is working on her Master's thesis in the same universit, at the Genetics and Biotechnology Department. She has participated in several conferences for young scientists with both oral and poster presentations and was also awarded for the best oral presentation. She has participated in Bioinformatic's Summer School in July 2015 and currently she is studying bioinformatics for applying new knowledge in her research.

galina.khafizova@gmail.com

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