**Association of nitrogen-fixing microorganisms in the surface of nodules in wild perennial leguminous plants
Onobrychis transcaucasica and *Onobrychis chorassanica***

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Key message. The results of molecular genetic analysis root nodule bacteria wild leguminous plants germinating in the Arid zones Central Asia can penetrate into various nitrogen-fixing microorganisms. Bacteria of plants *Onobrychis transcaucasica* and *Onobrychis chorassanica* origin are found bacteria in the class *Alphaproteobacteria* and some nitrogen-fixing bacteria which we are write were in the class of *Betaproteobacteria*.

Keywords: leguminous plants, *Onobrychis*, root nodule bacteria, molecular genetic analysis

Over 100 nitrogen-fixing microorganisms were isolated from the nodules of perennial wild leguminous plants *Onobrychis transcaucasica* and *Onobrychis chorassanica* growing in the desert territories of Uzbekistan. According to the results of a taxonomic analysis, the 16S rDNA gene found that the isolated bacteria more than 50% belong to different types of nitrogen-fixing bacteria. Nucleotide sequencing of the 16S rRNA gene and NCBI BLAST analysis showed in the nodule bacteria of *Onobrychis* plants were found many different nitrogen-fixing bacteria's, as *Paenobacillus* sp., *Rhizobium*, *Burkholderia*, *Enterobacter* and *Pantoea*.

It has been shown a possibility of growing up of *Onobrychis* plants at minimal additional moisture of sabulous soils in the Kyzyl Kum Desert, creating artificial pastures and thereby immobilizing the desert blown sands. Although more than on 32 million ha worldwide alfalfa is grown, it is conducted a search for new special purpose forage legumes supported by smaller plantings of species of *Coronilla*, *Onobrychis*, and *Lotus*.

In all studies on the isolation of bacteria from nodules, acetylene reduction assay, experiments with micro-vegetation, CTAB genomic DNA extraction were used by laboratory manual of the professor Sharon R. Long (<http://longlab.stanford.edu/protocols.html>). Molecular genetic analysis, a study with the PCR analysis, the selection of 16 rDNA primers, *nodC*, *nifHF*, ERIC, Box and other primers, as well as all the methods used, are described in research Laguerre et al. (2001).

The results of molecular genetic analysis root nodule bacteria (or in inside root nodule) wild leguminous plants germinating in the Arid zones Central Asia can penetrate into various nitrogen-fixing microorganisms. As revealed in our studies. According to NCBI BLASTN analysis and phylogenetic analysis, it is that bacteria of plants *Onobrychis transcaucasica* and *Onobrychis chorassanica* origin are found bacteria in the class *Alphaproteobacteria* and some nitrogen-fixing bacteria which we are write were in the class of *Betaproteobacteria*.

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