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## Development of a transgenic tissue visualization system in representatives of *Fabaceae*

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Plant organisms are the objects of green biotechnology, which have been used by humans in various areas of life. The family of legumes (*Fabaceae*) that is being studied in this work is not an exception here. It is a very diverse family widespread throughout the globe.

Barrel medic (*Medicago truncatula*) and common pea (*Pisum sativum*), members of the legume family, were selected in this study for the development of an vital imaging system for transgenic tissues. As a part of the work, we tested an imaging system with post-mortem staining based on the *GUS* reporter, as well as a system for vital detection of transgenic tissue with fluorescent proteins GFP and DsRed. At this stage, vital imaging systems based on betalain and anthocyanin staining of transgenic tissues are designed and currently being adapted to the model objects under study.

The results of this study may be useful for subsequent attempts to solve the problem of the low efficiency of transformation of *P. sativum*. Moreover, such a system should be useful in the study of gene regulatory networks and factors that regulate the process of induction and subsequent development of somatic embryos. In addition, it can be used to track the dynamics of expression of genes of interest on living objects, while studying other fundamental and biotechnological processes.

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