Abstract (v anglickém jazyce)

Development of tooth primordia in mice is an important model for study of odontogenesis. Several dental rudiments develop during the mouse embryogenesis. These structures develop in functional teeth in their phylogenetically older relatives. Similarly, we can initiate growth of teeth from these germs in some mutant mice.

In my diploma thesis we have focused on the importance of rudimentary structures with odontogenic potential in postnatal individuals. As a model of development, we have chosen a cell population originating from rudimentary primordia MS (mesial segment) that develops in diastema of the lower jaw during the embryonic day 12.5. Using the inducible Cre-lox technology we have marked the cells which are part of the signal domain of primordia at this time. As a marker of these cells we have used gene *Shh*.

We have found out that these cells persist prenataly and also postnatally. Further we have isolated this cell area and we have tested it using a variety of methods. We have shown that in the cells of postnatal individual are expressed markers of stem cells (*Sox2, Bmi1, Gli1*) and also genes for major enamel matrix structural proteins: ameloblastin and amelogenin. The same stem cell markers are also expressed *in vitro* culture of the isolated cells. This cell population has obviously an additional function to a structural one during the further life of an individual.