

# Abstract

The influence of PRDM9 histon H3K4 tri-methyltransferase on chromosomal sterility

The *Prdm9* gene encodes a meiotic histone methyltransferase, which enables tri-methylation of lysine 4 on histon H3. H3K4 tri-methylation is associated with gene expression activation. The same gene was identified in the mouse as the hybrid sterility 1gene. The regulation of hotspots of meiotic recombination in mouse and human is its other function.

The aim of diploma thesis was be to verify the influence of supernumerary copies of *Prdm9* gene on chromosomal sterility using transgenic mice. Sterility will be induced by chromosomal translocation T43H. It was found that the gene *Prdm9* itself has no influence of the observed fenotyp changes. Significant position effect in T43H translocation was confirmed. Translocation inherited from the father causes downgrade of parameters of fertility compared to that derived from the mother.