

Abstract

Hybridization between closely related species of mammals is often accompanied by abnormal growth of placentas and fetuses. From the perspective of evolutionary biology, our knowledge about the contribution of such interspecies incompatibilities in speciation is still insufficient. In my thesis, I was finding out if abnormal placental and fetal growth contributes to reproductive isolation of two subspecies of house mouse, *Mus musculus musculus* and *M. m. domesticus*, which are at an early phase of speciation and in nature they still hybridize. Using two inbred strains derived from *M. m. musculus* (PWD/Ph, STUS) and two inbred strains derived from *M. m. domesticus* (C57BL6/J, SCHEST) we performed four different intrasubspecies and four different intersubspecies crosses. We found out that the size of the placenta in hybrids is more influenced by father, while the size of the fetus is more influenced by mother. After elimination influence of weight of mother and father we have not recorded a significant difference in the size of placentas and fetuses in intrasubspecies and intersubspecies crosses. Our results show that hybridization between subspecies of house mouse does not produce abnormalities in prenatal development, as was observed in hybrids between distant species of mice. It is thus possible that prenatal abnormalities caused as a result of parental conflicts are the consequence of species divergence rather than its cause. We cannot, however, rule out that abnormal placental and fetal growth had played a role in at least some speciation events, where reproductive system had been changed.