

Mouse congenic strains are widely used as an important genetic tool for various purposes of research. Congenic strains are special inbred strains in which part of the genome of one mouse is transferred to another by backcrossing the donor mouse to the recipient strain with appropriate selection. The classical ten-generation breeding protocol is commonly utilized and adapted for different experimental needs. Our department is focused on the study of hybrid sterility between two related mouse strains *M. m. musculus* and *M. m. domesticus*. The first aim of this work was the utilization of congenics to stabilize three transgenic lines, which previously helped to identify first mammalian hybrid sterility gene *Hst1* as *Prdm9* (Mihola et al, 2009). Bacterial artificial chromosomes (BACs) present in transgenes encompassed several genes including *Prdm9*. The second goal was to look for some new phenotypes of our congenic strains, which may be causally associated with genes encoded by the BACs, as well as an additional research on the hybrid sterility phenomena. We established three new congenic strains on C57BL/6J (B6) background and found significant differences between transgenics versus their littermate controls in weights of testis, gonadal fat, body, liver, and heart.