

Cloning & Transgenic Swine for Medical and Agricultural Uses at MU

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The pig is an important component of the world's food supply. As of December 1, 2009 the hog inventory in the United States of America was 65 million head. The United States is the world's third largest producer and second largest consumer, exporter, and importer of pork and pork products. Total farm income for hogs in 2008 has estimated to be \$16.0 billion. Not only are pigs important to agriculture swine have become important in biomedical research as they are excellent models for cardiovascular disease, atherosclerosis, cutaneous pharmacology, wound repair, cancer, diabetes, ophthalmology, toxicology research, lipoprotein metabolism, pathobiology of intestinal transport, injury and repair, as well as being considered potential sources of organs for xenotransplantation. Furthermore, the swine genome is also quite similar to the human, as a phylogenetic approach using swine genome sequence data shows that the swine genome is 3x closer to the human than is the mouse. Reviewers at the NIH consider swine to be a very important model for human health and disease conditions as evidenced by the fact that for the past 6 years extramural support of research on swine has averaged over \$115 million per year (NIH Office of the Director). The NIH considers the swine to be so important that it has helped establish the National Swine Resource and Research Center at the University of Missouri to serve as a genetic resource for the biomedical community.