

Applications of rabbits in biomedicine: a review of the literature

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Rabbits are widely used as a model organism for biomedical research, and the rabbit system is especially valuable because it fills an important niche between laboratory mice and larger domesticated mammals. In order to precisely describe the current status and development trends of the use of rabbits (special in transgenic rabbits) in biomedical research, we performed a quantitative analysis of the published data, collected by searching biomedical databases. Currently, in the area of transgenic rabbits, we found that there are about 217 papers related to transgenic rabbits, originating from 22 countries. The number of publications has slowly increased over time, reaching its peak in 2004 and 2007. Approximately one third of the publications come from the USA, and one quarter come from Japan. The USA, Japan and France were the top three producers of publications related to transgenic rabbits. These publications mainly focused on cardiovascular disease (CVD) and the study of therapeutic protein bioreactors. Approximately 19 transgenic rabbit strains have been established for the study of CVD, and 20 recombinant proteins have been produced from transgenic rabbit milk or blood. The remaining publications largely focused on virology & immunology, diabetes mellitus, cancer, and genetics. These publications provide new insights into the mechanisms responsible for the development of human disease and shed light on the management of some genetic disorders. Thus, this quantitative review of the literature reveals that transgenic rabbits play an increasingly important role in biomedical research.