Model Organisms Research Report Example

Introduction to Model Organism and their Importance to Scientific Research

What : identification and description of organism
Why: importance of the model organism for research
When: information on the history of the organism/first used

CHO Cells

CHO (Chinese Hamster Ovary) Cells are a line of laboratory cells that have been cultured from the ovaries of Chinese hamsters. The Chinese hamster (*Cricetulus griseus*) is a species of desert hamsters that came from China and Mongolia. The hamsters were brought into the United States in 1948 to be used for breeding in research laboratories across the United States. However, they had been used since 1919 in other parts of the world taking the place of laboratory mice. Their small size (1.4 oz) and their life span of 2-3 years makes them an ideal laboratory research animal. Since the line's development in 1957 at the Boston Cancer Research Foundation the cells have been bred and have resulted in numerous variants which are used for various aspects of biomedical research.

The CHO cells which were derived from the epithelial cell layer of the ovaries are used in many aspects of biological research and are the most commonly utilized mammalian cells. What makes the cells unique for research is that they have a mutation that causes a deficiency in the synthesis of proline which, is an amino acid. In addition, they have a low chromosome number (2n=22) and have a mutation that causes the Epidermal growth factor receptor (EGFR) to not be expressed. These unique characteristics and mutations play an important role in using these cells to study the effects of cancer and radiation. In addition, the cells which grow rapidly, can yield a high concentration of protein products making them ideal for the production of therapeutic proteins and are often the choice organism for pharmaceutical companies.