MODEL OF INHERITED STRESS-INDUCED ARTERIAL HYPERTENSION

Description
The reasons for hypertonic disease remain unknown in spite of intensive investigations in the field. The role of some factors ("risk factors") such as inheritance, age, sex, dietetic peculiarities, weight, etc. that can affect the formation of arterial hypertension has been determined in numerous investigations. Emotional stress is one of the factors. To study the effect of genetic predisposition to emotional stress on the formation of stable arterial hypertension, a rat line ISIAH (Inherited Stress-Induced Arterial Hypertension) was bred. The line is characterized by higher stress sensitivity that is expressed in elevated arterial pressure under emotional stress.

Rats of line ISIAH are an adequate experimental model for inherited stress-sensitive arterial hypertension, which is convenient for replication of the features and symptoms typical of human hypertension. It provides conditions for original investigations aimed at identification of genetic-physiological mechanisms of hypertension, which should be of great practical significance. Elaboration of the model makes it possible to run experiments that are unfeasible in clinic conditions. The new rat line could also be used to seek for and test the effect of newly synthesized anti-hypertensive preparations or those obtained from natural sources.

Technical appraisal and economic benefits
The ISIAH line is advantageous over other genetic models of human hypertension because ISIAH rats were selected using the stress factor, which is the most important in the etiology of hypertension. The line is characterized by higher arterial pressure under emotional stress:
190-208 mm Hg in males and 180 mm Hg in females. Basal blood pressure of the rats is 160-166 mm Hg for males and 143-149 mm Hg for females.

**Application areas**
Medical and academic institutions.

**Development stage**
So far the Institute of Cytology and Genetics is a monopolistic owner of this experimental model, which provides necessary conditions for conducting novel studies aimed at finding out genetic-physiological mechanisms of the formation of hypertensive status and human hypertension.

**Patent situation**
No patent application has been submitted.

**Commercial offers**
Contracts on delivery of animals and running analyses.

**Estimated cost**
To be negotiated.

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