

### Reliability of the electrocardiogram in normal rats #62

Renato Buscariolli de Oliveira<sup>1</sup>, Denise Vaz de Macedo<sup>1</sup>, Gustavo Barbosa Santos<sup>2</sup>, Miguel Arcanjo Areas<sup>2</sup>, Rodrigo Hohl<sup>1</sup>.

<sup>1</sup>Laboratory of Exercise Biochemistry (LABEX), Biochemistry Department, Biology Institute, P.O. Box 6109, University of Campinas - UNICAMP, 13083-970, Campinas, SP, Brazil; <sup>2</sup>Physiology and Biophysics Department, Biology Institute, P.O. Box 6109, University of Campinas - UNICAMP, Campinas/SP, Brazil.

E-mail: [labex@unicamp.br](mailto:labex@unicamp.br)

Several electrocardiogram (ECG) indexes are used to identify cardiac abnormalities in rats. However, there are few studies about the reliability of this tool. The aim of this study was to verify the reliability of a computerized electrocardiography (Heart Ware System) adapted for rats. The ECG was registered under intramuscular anesthesia (Zoletil®, 25mg/kg body weight) in the supine position, using four inserted electrodes in the subcutaneous layer of the animals' paws (n=11). Three records per day were performed in an interval of fifteen minutes in three distinct days. Six standard leads were obtained (I, II, III, aVR, aVL and aVF) and the following indexes were analyzed: duration of P wave; duration of QRS complex; PR interval; RR interval; QT interval and corrected QT (QTc) interval. Each individual ECG indexes were obtained from the average of three (P; QRS; PR) or ten (RR; QT; QTc) manual measures performed by the same observer. The repeatability in the same day and reproducibility in distinct days were verified by changes in the mean of the raw indexes (Anova with Tukey's post-test,  $p < 0.05$ ) and by the typical error expressed as the coefficient of variation (CV) of the LOG transformed indexes. For P, PR, QT and QTc indexes measured in the first day we found significant difference in the mean. All indexes showed a CV minor than 10% (except P, CV=11.9%). We conclude that the electrocardiography used in the described conditions has good reliability when conducted by trained professionals.

**Key words:** reliability; electrocardiogram; rat.