

# Noninvasive method for electrocardiogram recording in conscious rodents with the electro-conductive liquid electrodes

Valery N. Mukhin

(Submitted on 12 Apr 2012)

Existing methods of heart rate recording in animals have shortcomings, which significantly obscure the influence of experimental factors on heart rate. We have developed a method of electrocardiographic recording of heart rate in rats without these drawbacks. To contact the animal limbs used liquid electrodes which are two small baths filled with conductive fluid (saline solution). To provide the relative immobility (and quiet) of the animal the two baths was covered with a dark chamber without a bottom and with an entrance for the rat. During the experiment, a rat placed near the chamber comes into it (for the innate preference for darkness) and locates itself inside with its head for the exit. At that moment ECG recording starts. This method allows to record heart rate in the intact rodents (without anesthesia and stress) and does not require substantial preparation. It is not suitable for standard ECG analysis of the heart condition and function, but this is a good way for recording heart rate for the further analysis of its variability.

Comments: 4 pages, 3 figures, preprint

Subjects: **Quantitative Methods (q-bio.QM)**; Medical Physics (physics.med-ph)

ACM classes: J.3

Cite as: [arXiv:1204.2756](https://arxiv.org/abs/1204.2756) [q-bio.QM]

(or [arXiv:1204.2756v1](https://arxiv.org/abs/1204.2756v1) [q-bio.QM] for this version)

## Submission history

From: Valery Mukhin [[view email](#)]

[v1] Thu, 12 Apr 2012 15:29:18 GMT (162kb)

*Which authors of this paper are endorsers?*

## Download:

- [PDF only](#)

Current browse context:

q-bio.QM

[< prev](#) | [next >](#)

[new](#) | [recent](#) | [1204](#)

Change to browse by:

[physics](#)

[physics.med-ph](#)

[q-bio](#)

## References & Citations

- [NASA ADS](#)

## Bookmark (what is this?)



Science  
WISE