

## Neurophysiology

**Principal Investigator** Tadachika Koganezawa

**E-mail.address** t-kogane@md.tsukuba.ac.jp

**URL** <http://www.md.tsukuba.ac.jp/basic-med/physiology/t-kogane/>



### Major Scientific Interests of the Group

We are studying mechanisms of circulatory and respiratory regulation by the central nervous system. Especially, we are electrophysiologically approaching to mechanisms of circulatory and respiratory regulation by the autonomic nervous system using in vivo and in situ preparations of rodents.

### Projects for Regular Students in Doctoral or Master's Programs

- 1) Cardiovascular regulation by the central nervous system
- 2) Respiratory regulation by the central nervous system
- 3) Mechanisms of the neurogenic hypertension

### Study Programs for Short Stay Students (one week – one trimester) (select one or two)

- 1) Recording of cardiovascular and respiratory parameters in human and rodent.
- 2) Physiological analysis of cardiovascular and respiratory parameters in human and rodent.

### Selected Publications

- 1) Koganezawa T, Paton JF Intrinsic chemosensitivity of rostral ventrolateral medullary sympathetic premotor neurons in the in situ arterially perfused preparation of rats. *Exp Physiol*, 99(11), 1453-66 (2014)
- 2) Koganezawa T, Okada Y, Terui N, Paton JF, Oku Y A  $\mu$ -opioid receptor agonist DAMGO induces rapid breathing in the arterially perfused in situ preparation of rat. *Respir Physiol Neurobiol*, 177(2), 207-211 (2011)
- 3) Koganezawa T, Shimomura Y, Terui N. The viscerosympathetic response in rabbits is mediated by GABAergic and glutamatergic inputs into the sympathetic premotor neurons of the rostral ventrolateral medulla. *Exp Physiol*, 95(11), 1061-1070 (2010)
- 4) Wang R, Koganezawa T, Terui N. Different responses of sympathetic premotor neurons in the rostral ventrolateral medulla to stimulation of the dorsomedial hypothalamus in rabbits. *Brain Res*, 1356, 44-53 (2010)
- 5) Koganezawa T, Shimomura Y, Teuri N. The role of the RVLM neurons in the viscerosympathetic reflex: A mini review. *Auton Neurosci*, 142(1-2), 17-19. (2008)