

大阪市立大学大学院理学研究科生物地球系専攻

自然誌機能生物学講座 情報生物学研究グループ 業績集

2014

Takekata, H., Numata, H., Shiga, S., Goto S.G. Silencing the circadian clock gene *Clock* using RNAi reveals dissociation of the circatidal clock from the circadian clock in the mangrove cricket. *Journal of Insect Physiology* 68, 16-22. doi: [10.1016/j.jinsphys.2014.06.012](https://doi.org/10.1016/j.jinsphys.2014.06.012)

Shimokawa, K., Numata, H., Shiga, S. Pars intercerebralis promotes oviposition in the bean bug, *Riptortus pedestris* (Heteroptera: Alydidae). *Applied Entomology and Zoology* 49, 525-528. doi: [10.1007/s13355-014-0281-z](https://doi.org/10.1007/s13355-014-0281-z)

Harada, E., Lee, R.E. Jr., Denlinger, D.L., Goto, S.G. Life history traits of adults and embryos of the Antarctic midge *Belgica antarctica*. *Polar Biology* 37, 1213-1217. doi: [10.1007/s00300-014-1511-0](https://doi.org/10.1007/s00300-014-1511-0)

Takekata, H., Numata, H., Shiga, S. The circatidal rhythm persists without the optic lobe in the mangrove cricket *Apteronomobius asahinai*. *Journal of Biological Rhythms* 29, 28-37. doi: [10.1177/0748730413516309](https://doi.org/10.1177/0748730413516309)

Hori, Y., Numata, H., Shiga, S., Goto, S.G. Both the anterior and posterior eyes function as photoreceptors for photoperiodic termination of diapause in the two-spotted spider mite. *Journal of Comparative Physiology A* 200, 161-167. doi: [10.1007/s00359-013-0872-0](https://doi.org/10.1007/s00359-013-0872-0)

Ikeno, T., Numata, H., Goto, S.G., Shiga, S. The involvement of the brain region containing pigment-dispersing factor-immunoreactive neurons in the photoperiodic response of the bean bug *Riptortus pedestris*. *Journal of Experimental Biology* 217, 453-462. doi: [10.1242/jeb.091801](https://doi.org/10.1242/jeb.091801)

Takekata, H., Goto, S.G., Satoh, A., Numata H. Light masking of the circatidal activity rhythm in the mangrove cricket *Apteronomobius asahinai*. *Biological Rhythm Research* 45, 229-233. doi: [10.1080/09291016.2013.797639](https://doi.org/10.1080/09291016.2013.797639)

2013

- Tanabe, K., Jombart, T., Horibe, S., Palacpac, N.M.Q., Honma, H., Tachibana, S.-I., Nakamura, M., Horii, T., Kishino, H., Mita, T. *Plasmodium falciparum* mitochondrial genetic diversity exhibits isolation-by-distance patterns supporting a sub-Saharan African origin. *Mitochondrion* 13, 630–636. doi: [10.1016/j.mito.2013.08.008](https://doi.org/10.1016/j.mito.2013.08.008)
- Ito, C., Goto, S.G., Numata, H. Desiccation and heat tolerance of eggs of the Asian tadpole shrimp, *Triops granarius*. *Zoological Science* 30, 760–766. doi: [10.2108/zsj.30.000](https://doi.org/10.2108/zsj.30.000)
- Shiga, S. Photoperiodic plasticity in circadian clock neurons in insects. *Frontiers in Invertebrate Physiology* 4, Article 69 doi: [10.3389/fphys.2013.00069](https://doi.org/10.3389/fphys.2013.00069)
- Ikeno, T., Ishikawa, K., Numata, H., Goto, S.G. Circadian clock gene, *Clock*, is involved in the photoperiodic response of the bean bug *Riptortus pedestris*. *Physiological Entomology* 38, 157–162. doi: [10.1111/phen.12013](https://doi.org/10.1111/phen.12013)
- Tanaka, A., Kuga, Y., Tanaka, Y., Goto, S.G., Numata, H., Shiga, S. Effects of ablation of the pars intercerebralis on ecdysteroid quantities and yolk protein expression in the blow fly, *Protophormia terraenovae*. *Physiological Entomology* 38, 192–201. doi: [10.1111/phen.12012](https://doi.org/10.1111/phen.12012)
- Sekizawa, A., Seki, S., Tokuzato, M., Shiga, S., Nakashima Y. Disposable penis and its replenishment in a simultaneous hermaphrodite. *Biology Letters* 9, Article 2. doi: [10.1098/rsbl.2012.1150](https://doi.org/10.1098/rsbl.2012.1150)
- Matsumoto, K., Numata, H., Shiga, S. Role of the brain in photoperiodic regulation of juvenile hormone biosynthesis in the brown-winged green bug, *Plautia stali*. *Journal of Insect Physiology* 59, 387–393. doi: [10.1016/j.jinsphys.2013.01.007](https://doi.org/10.1016/j.jinsphys.2013.01.007)
- Matsuno, T., Miyazaki, Y., Muramatsu, N., Numata, H. Circannual pupation timing is not correlated with circadian period in the varied carpet beetle *Anthrenus verbasci*. *Biological Rhythm Research* 40, 849–855. doi: [10.1080/09291016.2013.770293](https://doi.org/10.1080/09291016.2013.770293)

Matsuno, T., Kawasaki, Y., Numata, H. Small geographic variation in photoperiodic entrainment of the circannual rhythm in the varied carpet beetle, *Anthrenus verbasci*. *Zoological Science* 30, 304-310. doi: [10.2108/zsj.30.304](https://doi.org/10.2108/zsj.30.304)

Kawakami, Y., Numata, H. Effects of a pyrethroid on ovarian development in diapause females of the two spotted spider mite. *Journal of the Acarological Society of Japan* 22, 45-47. doi: [10.2300/acari.22.45](https://doi.org/10.2300/acari.22.45)

Goto, S.G. Roles of circadian clock genes in insect photoperiodism. *Entomological Science* 16, 1-16. doi: [10.1111/ens.12000](https://doi.org/10.1111/ens.12000)

後藤慎介 昆虫の光周性に時計遺伝子は関わるか？ 昆虫と自然 48(11) 特集：昆虫の時間生物学，最新の進歩. 9-12.

2012

Shiga, S. Plausible neural circuitry for photoperiodism in the blow fly, *Protophormia terraenovae*. *Acta Biologica Hungarica* 63 (Supple.2), 36-47. doi: [10.1556/ABiol.63.2012.Suppl.2.3](https://doi.org/10.1556/ABiol.63.2012.Suppl.2.3)

Takekata, H., Matsuura, Y., Goto, S.G., Satoh, A., Numata, H. RNAi of the circadian clock gene period disrupts the circadian rhythm but not the circatidal rhythm in the mangrove cricket. *Biology letters* 8, 488-491. doi: [10.1098/rsbl.2012.0079](https://doi.org/10.1098/rsbl.2012.0079)

2011

Moriyama, M., Numata, H. A cicada that ensured its fitness during climate warming by synchronizing its hatching time with the rainy season. *Zoological Science* 28, 875-881. doi: [10.2108/zsj.28.875](https://doi.org/10.2108/zsj.28.875)

Sato, N., Sekizawa, A., Awata, S., Munehara, H., Nakashima, Y. Isolation and characterization of microsatellite markers in the Nudibranch *Chromodoris tinctoria*. *Venus* 69(3,4), 214-217.

- Ikeno, T., Numata, H., Goto, S.G. Photoperiodic response requires *mammalian-type cryptochrome* in the bean bug *Riptortus pedestris*. Biochemical and Biophysical Research Communications 410, 394-397. doi: [10.1016/j.bbrc.2011.05.142](https://doi.org/10.1016/j.bbrc.2011.05.142)
- Miyazaki, Y., Goto, S.G., Tanaka, K., Saito, O., Watari, Y. Thermoperiodic regulation of the circadian eclosion rhythm in the flesh fly, *Sarcophaga crassipalpis*. Journal of Insect Physiology 57, 1249-1258. doi: [10.1016/j.jinsphys.2011.05.006](https://doi.org/10.1016/j.jinsphys.2011.05.006)
- Ikeno, T., Numata, H., Goto, S.G. Circadian clock genes *period* and *cycle* regulate photoperiodic diapause in the bean bug *Riptortus pedestris* males. Journal of Insect Physiology 57, 935-938. doi: [10.1016/j.jinsphys.2011.04.006](https://doi.org/10.1016/j.jinsphys.2011.04.006)
- Goto, S.G., Philip, B.N., Teets, N.M., Kawarasaki, Y., Lee, R.E., Denlinger, D.L. Functional characterization of an aquaporin in the Antarctic midge *Belgica antarctica*. Journal of Insect Physiology 57, 1106–1114. doi: [10.1016/j.jinsphys.2011.03.023](https://doi.org/10.1016/j.jinsphys.2011.03.023)
- Ikeno, T., Katagiri, C., Numata, H., Goto, S.G. Causal involvement of the *mammalian-type cryptochrome* in the cuticle deposition rhythm in the bean bug *Riptortus pedestris*. Insect Molecular Biology 20, 409-415. doi: [10.1111/j.1365-2583.2011.01075.x](https://doi.org/10.1111/j.1365-2583.2011.01075.x)
- Goto, S.G., Katagiri, C. Effects of acclimation temperature on membrane phospholipids in the flesh fly *Sarcophaga similis*. Entomological Science 14, 224-229. doi: [10.1111/j.1479-8298.2010.00439.x](https://doi.org/10.1111/j.1479-8298.2010.00439.x)
- Ito, C., Goto, S.G., Tomioka, K., Numata, H. Temperature entrainment of the circadian cuticle deposition rhythm in *Drosophila melanogaster*. Journal of Biological Rhythms 26, 14-23. doi: [10.1177/0748730410391640](https://doi.org/10.1177/0748730410391640)
- Hamasaka, Y., Watari, Y., Arai, T., Numata, H., Shiga, S. Comparison of the effect of constant light on the circadian rhythm of white-eye mutant and wild-type blow fly *Protophormia terraenovae*. Biological Rhythm Research 42, 303-311. doi: [10.1080/09291016.2010.511132](https://doi.org/10.1080/09291016.2010.511132)
- Kotaki, T., Shinada, T., Kaihara, K., Ohfune, Y., Numata, H. Biological activities of juvenile hormone III skipped bisepoxide in last instar nymphs and adults of a

stink bug, *Plautia stali*. Journal of Insect Physiology 57, 147-152. doi: [10.1016/j.jinsphys.2010.10.003](https://doi.org/10.1016/j.jinsphys.2010.10.003)

後藤慎介 ショウジョウバエの耐寒性と膜脂質. 低温科学 69, 145-149.

2010

Udaka, H., Ueda, C., Goto, S.G. Survival rate and expression of Heat-shock protein 70 and Frost genes after temperature stress in *Drosophila melanogaster* lines that are selected for recovery time from temperature coma. Journal of Insect Physiology 56, 1889-1894. DOI: [10.1016/j.jinsphys.2010.08.008](https://doi.org/10.1016/j.jinsphys.2010.08.008)

Ikeno, T., Tanaka, S.I., Numata, H. & Goto, S.G. Photoperiodic diapause under control of circadian clock genes in an insect. BMC Biology 8, 116. DOI: [10.1186/1741-7007-8-116](https://doi.org/10.1186/1741-7007-8-116)

Shintani, Y., Numata, H. Adaptive significance of the recurrent photoperiodic response in a spring-breeding carabid beetle, *Carabus yaconinus*. Entomological Science 13, 367–374. DOI: [10.1111/j.1479-8298.2010.00403.x](https://doi.org/10.1111/j.1479-8298.2010.00403.x)

Udaka, H., Numata, H. Comparison of the life cycle and photoperiodic response between northern and southern populations of the terrestrial slug *Lehmannia valentiana* in Japan. Zoological Science 27, 735-739. DOI: [10.2108/zsj.27.735](https://doi.org/10.2108/zsj.27.735)

Shintani, Y., Numata, H. Photoperiodic response of larvae of the yellow-spotted longicorn beetle *Psacothea hilaris* after removal of the stemmata. Journal of Insect Physiology 56, 1125-1129. DOI: [10.1016/j.jinsphys.2010.03.010](https://doi.org/10.1016/j.jinsphys.2010.03.010)

Tagaya, J., Numata, H., Goto, S.G. Sexual difference in the photoperiodic induction of pupal diapause in the flesh fly *Sarcophaga similis*. Entomological Science 13, 311-319. DOI: [10.1111/j.1479-8298.2010.00394.x](https://doi.org/10.1111/j.1479-8298.2010.00394.x)

Tokuda, Y., Ikeno, T., Goto, S.G., Numata, H., Ezaki, Y. Influence of habitat change on the evolution of morphology and life history traits of azooxanthellate solitary corals (Scleractinia: Flabellidae). Biological Journal of the Linnean Society 101, 184-192. DOI: [10.1111/j.1095-8312.2010.01479.x](https://doi.org/10.1111/j.1095-8312.2010.01479.x)

Kashiyama, K., Ito, C., Numata, H., Goto, S.G. Spectral sensitivity of light-induced hatching and expression of genes mediating photoreception in eggs of the Asian tadpole shrimp *Triops granarius*. Comparative Biochemistry and Physiology Part A 155, 416-421 DOI: [10.1016/j.cbpa.2010.03.012](https://doi.org/10.1016/j.cbpa.2010.03.012)

Muguruma, F., Goto, S.G., Numata, H., Shiga, S. Effect of photoperiod on clock gene expression and subcellular distribution of PERIOD in the circadian clock neurons of the blow fly *Protophormia terraenovae*. Cell and Tissue Research 340, 497–507. DOI: [10.1007/s00441-010-0966-8](https://doi.org/10.1007/s00441-010-0966-8)

Goto, S.G., Udaka, H., Ueda, C., Katagiri, C. Fatty acids of membrane phospholipids in *Drosophila melanogaster* lines showing rapid and slow recovery from chill coma. Biochemical and Biophysical Research Communications 391, 1251-1254. DOI: [10.1016/j.bbrc.2009.12.053](https://doi.org/10.1016/j.bbrc.2009.12.053)

Miyazaki, Y., Numata, H. Exhibition of circannual rhythm under constant light in the varied carpet beetle *Anthrenus verbasci*. Biological Rhythms Research 41, 441 - 448. DOI: [10.1080/09291010903411443](https://doi.org/10.1080/09291010903411443)

Moriyama, M., Numata, H. Desiccation tolerance in fully developed embryos in two cicadas, *Cryptotympana facialis* and *Graptopsaltria nigrofuscata*. Entomological Science 13, 68-74. DOI: [10.1111/j.1479-8298.2010.00365.x](https://doi.org/10.1111/j.1479-8298.2010.00365.x)

Inosaki, A., Yasuda, A., Shinada, T., Ohfune, Y., Numata, H., Shiga S. Mass spectrometric analysis of peptides in brain neurosecretory cells and neurohemal organs in the adult blow fly, *Protophormia terraenovae*. Comparative Biochemistry and Physiology - Part A: Molecular & Integrative Physiology 155, 190-199. DOI: [10.1016/j.cbpa.2009.10.036](https://doi.org/10.1016/j.cbpa.2009.10.036)

Kawakami, Y., Ito, K., Numata, H., Goto, S.G. Dominant and recessive inheritance patterns of diapause in the two-spotted spider mite, *Tetranychus urticae*. Journal of Heredity 101, 20-25. DOI: [10.1093/jhered/esp085](https://doi.org/10.1093/jhered/esp085)

Numata, H., Udaka, H. Photoperiodism in mollusks. In: Photoperiodism: The Biological Calendar. Nelson, R.J., Denlinger, D.L. and Somers, D.E. (eds.), Oxford University Press, Oxford, p.173-192. 詳細.

Goto, S.G., Shiga, S., Numata, H. Photoperiodism in
insects: perception of light and the role of clock genes. In:
Photoperiodism: The Biological Calendar. Nelson, R.J., Denlinger, D.L. and
Somers, D.E. (eds.), Oxford University Press, Oxford, p.258-286. 詳細.

後藤慎介 「ショウジョウバエの耐寒性とHsp」 「ショウジョウバエ」 「ニク
バエ」 『昆虫の低温耐性 ーその仕組みと調べ方ー』 岡山大学出
版会 詳細.