



Cover: In this issue, Ko et al. study the energetics of fire ant rafts. Fire ants link their bodies together to build waterproof rafts. Ants on rafts use around 43% more energy than ants on land. Moreover, under stressful conditions, such as when the raft is small, the ants expend energy consistent with Kleiber's law of metabolism, a law that predicts the metabolic rates of animals from mice to elephants. Image licensed under a Creative Commons Attribution 4.0 International license.

RESEARCH ARTICLES

Metabolic scaling of fire ants (*Solenopsis invicta*) engaged in collective behaviors

Ko, H., Komilian, K., Waters, J. S. and Hu, D. L.
bio059076

Morpho-functional comparison of differentiation protocols to create iPSC-derived cardiomyocytes

Nijak, A., Simons, E., Vandendriessche, B., Van de Sande, D., Fransen, E., Sieliwończyk, E., Van Gucht, I., Van Craenenbroeck, E., Saenen, J., Heidbuchel, H., Ponsaerts, P., Labro, A. J., Snyders, D., De Vos, W., Schepers, D., Alaerts, M. and Loeys, B. L.
bio059016

Downstream events initiated by expression of FSHD-associated DUX4: Studies of nucleocytoplasmic transport, γ H2AX accumulation, and Bax/Bak-dependence

Masteika, I. F., Sathya, A., Homma, S., Miller, B. M., Boyce, F. M. and Miller, J. B.
bio059145

Loss of *p19Arf* promotes fibroblast survival during leucine deprivation

Roby, K. C., Lieberman, A., Kim, B.-J., Zaragoza Rodríguez, N., Posimo, J. M., Tsang, T., Verginadis, I. I., Puré, E., Brady, D. C., Koumenis, C. and Ryeom, S.
bio058728

Expression levels and activities of energy-yielding ATPases in the oligohaline neritid snail *Theodoxus fluviatilis* under changing environmental salinities

Knobloch, J., Müller, C. and Hildebrandt, J.-P.
bio059190

METHODS & TECHNIQUES

An optimized retroviral toolbox for overexpression and genetic perturbation of primary lymphocytes

van der Donk, L. E. H., van der Spek, J., van Duivenvoorde, T., ten Brink, M. S., Geijtenbeek, T. B. H., Kuijl, C. P., van Heijst, J. W. J. and Ates, L. S.
bio059032

Construction of a human hTERT RPE-1 cell line with inducible Cre for editing of endogenous genes

Hindul, N. L., Jhita, A., Oprea, D. G., Hussain, T. A., Gonchar, O., Campillo, M. A. M., O'Regan, L., Kanemaki, M. T., Fry, A. M., Hirota, K. and Tanaka, K.
bio059056

Novel protocol to observe the intestinal tuft cell using transmission electron microscopy

Kozono, T., Tamura-Nakano, M., Kawamura, Y. I., Tonozuka, T. and Nishikawa, A.
bio059007

Computational anatomy and geometric shape analysis enables analysis of complex craniofacial phenotypes in zebrafish

Diamond, K. M., Rolfe, S. M., Kwon, R. Y. and Maga, A. M.
bio058948

exTREEmTIME: a method for incorporating uncertainty into divergence time estimates

Carruthers, T. and Scotland, R. W.
bio059181

FIRST PERSON

First person – Hungtang Ko
bio059234

First person – Kerry Roby
bio059212

First person – Takuma Kozono
bio059210

First person – Kelly Diamond
bio059235

First person – Tom Carruthers
bio059205