



Cover: Bees are thought to have evolved from a wasp ancestor. Through millions of years of evolution by natural selection, honey bees and paper wasps have developed distinctly different, but both highly efficient, penetration techniques in concert with the macroscopic morphologies and elegant microstructures of their stings. Research into wasp and bee stings can provide inspiration for the design of bioinspired microneedles. Photo credit: Zi-Long Zhao. See the article by Feng et al. (921-928).

RESEARCH ARTICLES

- 753 The cuticle modulates ultraviolet reflectance of avian eggshells
Fecheyr-Lippens, D. C., Igic, B., D’Alba, L., Hanley, D., Verdes, A., Holford, M., Waterhouse, G. I. N., Grim, T., Hauber, M. E. and Shawkey, M. D.
- 760 Is “cooling then freezing” a humane way to kill amphibians and reptiles?
Shine, R., Amiel, J., Munn, A. J., Stewart, M., Vyssotski, A. L. and Lesku, J. A.
- 764 Regulation of lipid droplet dynamics in *Saccharomyces cerevisiae* depends on the Rab7-like Ypt7p, HOPS complex and V1-ATPase
Bouchez, I., Pouteaux, M., Canonge, M., Genet, M., Chardot, T., Guillot, A. and Froissard, M.
- 776 Variation in Dube3a expression affects neurotransmission at the *Drosophila* neuromuscular junction
Valdez, C., Scroggs, R., Chassen, R. and Reiter, L. T.
- 783 Precursor cells from Atlantic salmon (*Salmo salar*) visceral fat holds the plasticity to differentiate into the osteogenic lineage
Ytteborg, E., Todorovic, M., Krasnov, A., Takle, H., Kristiansen, I. Ø. and Ruyter, B.
- 792 The ArfGAP2/3 Glo3 and ergosterol collaborate in transport of a subset of cargoes
Estrada, A. F., Muruganandam, G., Prescianotto-Baschong, C. and Spang, A.
- 803 The influence of motion quality on responses towards video playback stimuli
Ware, E., Saunders, D. R. and Troje, N. F.
- 812 The eyes of the deep diving hooded seal (*Cystophora cristata*) enhance sensitivity to ultraviolet light
Hogg, C., Neveu, M., Folkow, L., Stokkan, K.-A., Hoh Kam, J., Douglas, R. H. and Jeffery, G.
- 819 Endoglin potentiates nitric oxide synthesis to enhance definitive hematopoiesis
Nasrallah, R., Knezevic, K., Thai, T., Thomas, S. R., Göttgens, B., Lacaud, G., Kouskoff, V. and Pimanda, J. E.
- 830 Nodal signaling is required for mesodermal and ventral but not for dorsal fates in the indirect developing hemichordate, *Ptychodera flava*
Röttinger, E., DuBuc, T. Q., Amiel, A. R. and Martindale, M. Q.
- 843 The canonical eIF4E isoform of *C. elegans* regulates growth, embryogenesis, and germline sex-determination
Mangio, R. S., Votra, S. B. and Pruyne, D.
- 852 The insulator protein CTCF regulates *Drosophila* steroidogenesis
Fresán, U., Cuartero, S., O’Connor, M. B. and Espinàs, M. L.
- 858 Saponin-permeabilization is not a viable alternative to isolated mitochondria for assessing oxidative metabolism in hibernation
Mathers, K. E. and Staples, J. F.
- 865 Asymmetric cell division of granule neuron progenitors in the external granule layer of the mouse cerebellum
Haldipur, P., Sivaprakasam, I., Periasamy, V., Govindan, S. and Mani, S.
- 873 BAZ1B is dispensable for H2AX phosphorylation on Tyrosine 142 during spermatogenesis
Broering, T. J., Wang, Y.-L., Pandey, R. N., Hegde, R. S., Wang, S.-C. and Namekawa, S. H.
- 885 Matrix compliance and the regulation of cytokinesis
Sambandamoorthy, S., Mathew-Steiner, S., Varney, S., Zuidema, J. M., Gilbert, R. J., Van De Water, L. and LaFlamme, S. E.
- 893 Dysregulated LIF-STAT3 pathway is responsible for impaired embryo implantation in a Streptozotocin-induced diabetic mouse model
Wang, T.-S., Gao, F., Qi, Q.-R., Qin, F.-N., Zuo, R.-J., Li, Z.-L., Liu, J.-L. and Yang, Z.-M.
- 903 Inexhaustible hair-cell regeneration in young and aged zebrafish
Pinto-Teixeira, F., Viader-Llangués, O., Torres-Mejía, E., Turan, M., González-Gualda, E., Pola-Morell, L. and López-Schier, H.
- 910 SNAP23/25 and VAMP2 mediate exocytic event of transferrin receptor-containing recycling vesicles
Kubo, K., Kobayashi, M., Nozaki, S., Yagi, C., Hatsuzawa, K., Katoh, Y., Shin, H.-W., Takahashi, S. and Nakayama, K.
- 921 Structures, properties, and functions of the stings of honey bees and paper wasps: a comparative study
Zhao, Z.-L., Zhao, H.-P., Ma, G.-J., Wu, C.-W., Yang, K. and Feng, X.-Q.
- 929 Resveratrol increases F508del-CFTR dependent salivary secretion in cystic fibrosis mice
Dhooghe, B., Bouckaert, C., Capron, A., Wallemacq, P., Leal, T. and Noel, S.