НОВОСТИ БИОЛОГИИ РАСТЕНИЙ, Май 2018

Root exudates affect soil stability, water repellency
Research digs into delicate plant, soil interactions.
https://www.eurekalert.org/pub_releases/2018-04/asoa-rea041618.php

Researchers identify the cells that trigger flowering
A new study uncovers exactly where a key protein forms before it triggers the flowering process in plants.
https://www.eurekalert.org/pub_releases/2018-04/cu-rit040518.php

Communication via calcium wave
Studies suggest that the local auxin signals can be communicated over long distances using calcium waves in order to generate an auxin signal also in target cells located far away.
https://www.eurekalert.org/pub_releases/2018-03/uow-cvc032818.php

A mechanistic framework for auxin dependent *Arabidopsis* root hair elongation to low external phosphate
Here we report that auxin plays a critical role promoting root hair growth in Arabidopsis in response to low external phosphate.
https://www.nature.com/articles/s41467-018-03851-3

Water-stress induced downsizing of light-harvesting antenna complex protects developing rice seedlings from photo-oxidative damage
Results demonstrate that developing seedlings under water deficit could downsize their light-harvesting capacity and components of photosynthetic apparatus to prevent photo-oxidative stress, excess ROS generation and membrane lipid peroxidation.
https://www.nature.com/articles/s41598-017-14419-4

Plant hormonomics: multiple phytohormone profiling by targeted metabolomics
Scientists present a method for the simultaneous targeted profiling of 101 phytohormone-related analytes from minute amounts of fresh plant material (< 20 mg).
http://www.plantphysiol.org/content/early/2018/04/27/pp.18.00293

Identification of functional single-nucleotide polymorphisms affecting leaf hair number in *Brassica rapa*
The procedures optimized here can be used to explain the molecular mechanisms of natural variation and to facilitate molecular breeding of many crops.
http://www.plantphysiol.org/content/early/2018/04/23/pp.18.00025

Plant endomembrane dynamics: studies of K+/H+ antiporters provide insights on the effects of pH and ion homeostasis
Here, we review the regulation of cytosolic and vacuolar pH, highlighting the similarities and distinctions of NHX and CHX members.
http://www.plantphysiol.org/content/early/2018/04/24/pp.18.00142

Cytokinin perception in potato: New features of canonic players
Expression of potato CK receptors was found to be organ-specific and sensitive to growth conditions, particularly to sucrose content.
https://www.biorxiv.org/content/early/2018/04/04/269266

В Антарктике впервые вырастили свежие овощи
На антарктической исследовательской станции собрали первый урожай свежих овощей, выращенных без почвы и солнечного света.
https://naked-science.ru/article/sci/v-antarktike-vpervye-vyrastili-svezhie

Greener and cheaper technique for biofuel production
A research team has found that a natural bacterium isolated from mushroom crop residue can directly convert cellulose to biobutanol, a biofuel.
https://www.sciencedaily.com/releases/2018/04/180406100547.htm

Ученые сделали прорыв в генетике пшеницы
Новое исследование позволило изолировать ген, который контролирует форму и размер колосков.

http://zoom.cnews.ru/rnd/article/item/uchenye_sdelali_proryv_v_genetike

BRI1 and BAK1 interact with G proteins and regulate sugar-responsive growth and development in *Arabidopsis*
Findings reveal an important genetic and molecular mechanism by which BR receptors associate with G proteins to regulate sugar-responsive growth and development.
https://www.nature.com/articles/s41467-018-03884-8

Cell biology: Dynamics of microtubules
Filamentous polymers called microtubules play vital roles in chromosome segregation and molecular transport. An team has now examined how microtubule lengths vary in response to changes in the availability of their protein components.
https://www.sciencedaily.com/releases/2018/04/180406112216.htm

Newly discovered hormone helps keep plants from dehydrating
The study shows how the peptide CLE25 moves from the roots to the leaves when water is scarce and helps prevent water loss by closing pores in the leaf surface.
https://www.eurekalert.org/pub_releases/2018-04/r-ndh040218.php

Современные высшие растения возникли в результате сдвига экспрессии генов
Предложена гипотеза, согласно которой переход от крайне простого и зависимого спорофита к сложному и автономному произошел в результате переноса на спорофит экспрессии нескольких групп регуляторных генов, которые вначале обеспечивали развитие гаметофита.
https://elementy.ru/novosti_nauki/433239/Sovremennye_vysshie_rasteniya_voznikli_v_rezultate_sdviga_ekspressii_genov

Photosynthetic protein structure that harvests and traps infrared light
Scientists have solved the structure of a photosynthetic protein to reveal how it converts near-infrared light into an electrical charge.
https://www.sciencedaily.com/releases/2018/04/180404133518.htm

Discovery of compounds that keep plants fresh
Controlling plant pore openings for drought tolerance and delay in leaf withering
https://www.eurekalert.org/pub_releases/2018-04/iotb-doc040818.php

Составила: Жуковская Н.В.