Vol. 79 No. 2 June 2014

CYTOLOGIA

International Journal of Cytogenetics and Cell Biology

Technical note

Sugar Solution Induces Clustered Lips

Plant stomata, are formed by a pair of lip-shaped guard cells, regulate gas exchange and transpiration on the aerial plant body surface. Guard cells are generally surrounded by pavement cells, that is, there are very few guard cell pairs in direct contact with one another. The spatial pattern of the leaf epidermal development is known as the 'one-cell spacing rule' (Sachs 1991). Recently, we found that immersing hydroponic cultures in sucrose solution induced abnormally clustered stomata in cotyledons of *Arabidopsis* seedlings. A stomatal lineage marker line E1627, in which stomatal lineage cells are specific labeled by GFP (Gardner *et al.* 2009), showed that the sugar solution treatment perturbed the guard cell fate. Our finding would be helpful to investigate stomatal distributional patterning during plant stomatal development, with a very simple experimental procedure.

Cover figure showed cotyledon leaf epidermis of E1627 that was grown in 1/2 Murashige–Skoog media solution (pH 5.8) supplemented without- (left) or with 1% sucrose (right), and stained with 32 μ M fluorescent dye FM4-64 to visualize plasma membranes with a confocal laser scanning microscopy. Please refer to the original report article by Akita K., Hasezawa S., and Higaki T. 2013. PLoS ONE 8: e72456.

(Kae Akita, and Seiichiro Hasezawa*, Department of Integrated Biosciences, Graduate School of Frontier Sciences, The University of Tokyo, Kashiwanoha, Kashiwa, Chiba 277–8562, Japan.)

* Corresponding author, e-mail: hasezawa@k.u-tokyo.ac.jp
DOI: 10.1508/cytologia.79.125