

## Publications AG Zachgo

Althoff F., Zachgo S. (2020) Transformation of *Riccia fluitans*, an amphibious liverwort dynamically responding to environmental changes. International Journal of Molecular Sciences 21(15), 5410. DOI.org/10.3390/ijms21155410.

Romani F., Banic E., Florent S.N., Kanazawa T., Goodger J.Q.D., Mentink R., Dierschke T., Zachgo S., Ueda T., Bowman J.L., Tsiantis M., Moreno J.E. (2020) Oil body formation in *Marchantia polymorpha* is controlled by MpC1HDZ and serves as a defense against arthropod herbivores. Current Biology 30, 1-14.

Busch A., Deckena M., Almeida-Trapp M., Kopischke, S., Kock, C., Schuessler, E., Tsiantis, M., Mithofer, A., Zachgo S. (2019) MpTCP1 controls cell proliferation and redox processes in *Marchantia polymorpha*. New Phytologist, 224 (4), 1627-1641. DOI:10.1111/nph.16132.

Regensdorff, M., Deckena M., Stein M., Borchers A., Scherer G., Lammers M., Hänsch R., Zachgo S., Buschmann H. (2018) Transient genetic transformation of *Mougeotia scalaris* (Zygnematophyceae) mediated by the endogenous α-tubulin1 promoter. J. Phycol. DOI: 10.1111/jpy.12781.

Nishiyama T., Sakayama H., de Vries J., et al. (Chara genome consortium), Zachgo S., Langdale J., Maumus F., Van Der Straeten D., Gould S.B., Rensing S.A. (2018) The Chara genome: secondary complexity and implications for plant terrestrialization. Cell 174, 448-464.

Gutsche N., Holtmannspötter M., Maß L., O'Donoghue M., Busch A., Lauri A., Schubert V., Zachgo S. (2017) Conserved redox-dependent DNA binding of ROXY glutaredoxins with TGA transcription factors. Plant Direct, DOI: 10.1002/pld3.30.

Bowman J.L., Kohchi T., Yamato K.T., et al. (Marchantia genome consortium), Yotsui I., Zachgo S., Schmutz J. (2017) Insights into land plant evolution garnered from the *Marchantia polymorpha* genome. Cell 171, 287-304.

Kopischke S., Schüssler E., Althoff F., Zachgo S. (2017) TALEN-mediated genome-editing approaches in the liverwort *Marchantia polymorpha* yield high efficiencies for targeted mutagenesis. Plant Methods DOI 10.1186/s13007-017-0167-5.

Buschmann H., Zachgo S. (2016) The evolution of cell division: from streptophyte algae to land plants. Trends in Plant Science, 21, 872-883.

Gutsche N. and Zachgo S. (2016) The N-terminus of the floral Arabidopsis TGA transcription factor PERIANTHIA mediates redox-sensitive DNA-binding. PlosOne 29;11(4):e0153810.

Bowman J.L., Araki T., Arteaga-Vazquez M.A., Berger F., Dolan L., Haseloff J., Ishizaki K., Kyozuka J., Lin S.S., Nagasaki H., Nakagami H., Nakajima K., Nakamura Y., Ohashi-Ito K., Sawa S., Shimamura M., Solano R., Tsukaya H., Ueda T., Watanabe Y., Yamato K.T., Zachgo S., Kohchi T. (2016) The naming of names: guidelines for gene nomenclature in Marchantia. Plant Cell Physiol. 5, 257-61.

Lin P.C., Lu C.W., Shen B.N., Lee G.Z., Bowman J.L., Arteaga-Vazquez M.A., Liu L.Y., Hong S.F., Lo C.F., Su G.M., Kohchi T., Ishizaki K., Zachgo S., Althoff F., Takenaka M., Yamato K.T., Lin S.S. (2016) Identification of miRNAs and their targets in the liverwort *Marchantia polymorpha* by integrating RNA-Seq and degradome analyses. Plant Cell Physiol. 57, 339-58. doi: 10.1093/pcp/pcw020.

Buschmann, H\*, Holtmannspötter, M., Borchers, A., O'Donoghue, M.T., Zachgo, S. (2015) Microtubule dynamics of the centrosome-like polar organizers from the basal land plant *Marchantia polymorpha*, New Phytologist 209, 999-1013.

Buschmann, H., Dols, J., Kopischke, S., Pena, E.J., Andrade-Navarro, M.A., Zachgo, S., Szymanski, D.B., Heinlein, M., Doonan, J.H., Lloyd, C.W. (2015) Arabidopsis KCBP interacts with AIR9 but stays in the cortical division zone throughout mitosis via its MyTH4-FERM domain. J. of Cell Science 128, 2033-2046.

Gutsche N., Thurow C., Zachgo S., Gatz C. (2015) Plant-specific CC-type glutaredoxins: functions in developmental processes and stress response. Biol Chem, 396, 495-509.

Horn, S., Pabón-Mora, N., Theußl, V.S., Busch, A., Zachgo, S. (2014) Analysis of the CYC/TB1 class of TCP transcription factors in basal angiosperms and magnoliids. The Plant Journal 81, 559-571.

Busch, A., Horn, S., Zachgo, S. (2014) Differential transcriptome analysis reveals insight into monosymmetric corolla development of the crucifer *Iberis amara*. BMC Plant Biology 14, 285.

Althoff, F., Kopischke, S., Zobell, O., Ide, K., Ishizaki, K., Kohchi, T. and Zachgo, S. (2014) Comparison of the MpEF1 $\alpha$  and 35S promoters for application in *Marchantia polymorpha* overexpression studies. Transgenic Research 23, 235-244.

Li, S. and Zachgo, S. (2013) TCP3 interacts with R2R3-MYB proteins, promotes flavonoid biosynthesis and negatively regulates auxin response in *Arabidopsis thaliana*. *The Plant Journal* 76, 901-913. (Featured article)

Zachgo, S., Hanke, G.H. and Scheibe, R. (2013) Plant cell microcompartments: a redox perspective. *Biol. Chem.* 394(2), 203–216.

Busch, A., Horn, S., Mühlhausen, A., Mummenhoff, K. and Zachgo, S. (2012) Corolla monosymmetry: Evolution of a morphological novelty in the Brassicaceae Family. *Mol. Biol. Evol.* 29(4), 1241–1254.

Li, S., Gutsche, N. and Zachgo, S. (2011) The ROXY1 C-terminal L<sup>\*\*</sup>LL motif is essential for the interaction with TGA transcription factors. *Plant Physiol.* 157 (4), 2056-2068.

Murmu, J., Bush, M., DeLong, C., Li, S., Xu, M., Khan, M., Fobert, P., Zachgo, S. and Hepworth, SR. (2010) *Arabidopsis* bZIP transcription factors TGA9 and TGA10 interact with floral glutaredoxins ROXY1 and ROXY2 and are redundantly required for anther development. *Plant Physiol.* 154(3), 1492-504.

Ziemann, M., Bhav, M. and Zachgo, S. (2010) Bioinformatic studies of the wheat glutaredoxin gene family and functional analysis of the ROXY1 orthologues. *Functional Plant Biology* 38, 25-34.

Ziemann, M., Bhave, M. and Zachgo, S. (2009). Origin and diversification of land plant CC-type glutaredoxins. *Genome Biology and Evolution* 1, 1–12.

Busch, A. and Zachgo, S. (2009). Flower symmetry evolution: Towards understanding the abominable mystery of angiosperm radiation. *BioEssays* 31, 1181-1190.

Li, S. and Zachgo, S. (2009). Glutaredoxins in development and stress responses of plants. *Advances in Botanical Research* 52, 335-403.

Wang, Z., Xing, S., Birkenbihl, R.P. and Zachgo, S. (2009). Conserved functions of *Arabidopsis* and rice CC-type glutaredoxins in flower development and pathogen response. *Mol. Plant* 2, 323-335.

Li, S., Lauri, A., Ziemann, M., Busch, A., Bhave, M. and Zachgo, S. (2009). Nuclear activity of ROXY1, a glutaredoxin interacting with TGA factors, is required for petal development in *Arabidopsis thaliana*. *The Plant Cell* 21, 429-441.

This work was featured in:

- *The Plant Cell* (2009) 21, 363.
- *Science Signalling* (2009) N. R. Gough, Nuclear Glutaredoxin Promotes Petals. *Sci. Signal.* 2, ec73.

Zachgo, S. (2008). Evo-Devo-Forschung bei Blütenpflanzen. Praxis der Naturwissenschaften 57, 14-18.

Xing, S. and Zachgo, S. (2008). *ROXY1* and *ROXY2*, two CC type glutaredoxin genes, together control anther development in *Arabidopsis thaliana*. The Plant Journal 53, 790-801.

Busch, A. and Zachgo, S. (2007). Control of corolla symmetry in the Brassicaceae *Iberis amara*. PNAS 104, 16714-16719.

<http://www.f1000biology.com/article/id/1092466>

Xing, S. and Zachgo, S. (2007). Pollen lethality: a phenomenon in *Arabidopsis* RNA interference plants. Plant Physiology 145, 330-333.

<http://www.f1000biology.com/article/id/1091272/evaluation>

Lauri, A., Shuping, X., Heidmann, I., Saedler, H. and Zachgo, S. (2006). The pollen-specific *DEFH125* promoter from *Antirrhinum* is bound *in vivo* by the MADS-box proteins DEFICIENS and GLOBOSA. PLANTA 224, 61-71.

Xing, S., Lauri, A. and Zachgo, S. (2006). Redox regulation and flower development: a novel function for glutaredoxins. Plant Biology 8, 547-555.

Zachgo, S. (2006). Eine neue Funktion für Glutaredoxine in der Blütenentwicklung. Annual book of the Max Planck Society.

Xing, S., Rosso, M.G. and Zachgo, S. (2005). *ROXY1*, a member of the plant glutaredoxin family, is required for petal development in *Arabidopsis thaliana*. Development 132, 1555-1565.

<http://www.f1000biology.com/article/id/1009829/evaluation>

Bey, M., Stüber, K., Fellenberg, K., Schwarz-Sommer, Z., Sommer, H., Saedler, H. and Zachgo, S. (2004). Characterization of *Antirrhinum* petal development and identification of target genes of the class B MADS box gene *DEFICIENS*. The Plant Cell 16, 3197-215.

<http://www.f1000biology.com/article/id/1022507/evaluation>

Zachgo, S.; *In situ* hybridization; Gillmartin, P. and Bowler, C. (Ed.); 2002. Practical Approach Series; Molecular Plant Biology: A Practical Approach VOLUME 2, IRL Press at Oxford University Press: Oxford, England, UK.

Bey, M., Müller, B.M., Lauri, A. and Zachgo, S. (2002). Isolating class B target genes from *Antirrhinum majus*. Flowering Newsletter 34, 19-26.

Martin, C., Bhatt, K., Baumann, K., Jin, H., Zachgo, S., Roberts, K., Schwarz-Sommer, Z., Glover, B. and Perez-Rodrigues, M. (2002). The mechanics of cell fate determination in petals. Phil. Trans. Royal Society London 357, 809-813.

Müller, B.M., Saedler, H. and Zachgo, S. (2001). The MADS-box gene *DEFH28* from *Antirrhinum* is involved in the regulation of floral meristem identity and fruit development. *The Plant Journal* 28, 169-180.

Zachgo, S., Perbal, M.C., Saedler, H. and Schwarz-Sommer, Z. (2000). In situ analysis of RNA and protein expression in whole mounts facilitates detection of floral gene expression dynamics. *The Plant Journal* 23, 697-702.

Wilkinson, M., de Andrade Silva, E., Zachgo, S., Saedler, H. and Schwarz-Sommer, Z. (2000). *CHORIPETALA* and *DESPENTEADO*: general regulators during plant development and potential floral targets of *FIMBRIATA*-mediated degradation. *Development* 127, 3725-3734.

Wilkinson, M., Zachgo, S. und Saedler, H. (1999). Das ABC der Blütengene: Ein internes Programm steuert die Blütenentwicklung des Löwenmäulchens. MPIZ Forschung aktuell, 20-23.

Millar, A.A., Clemens, S., Zachgo, S., Giblin, E.M., Taylor, D.C. and Kunst, L. (1999). *CUT1*, an *Arabidopsis* gene involved in wax biosynthesis and pollen fertility, encodes a very-long-chain fatty acid condensing enzyme. *The Plant Cell* 11, 825-838.

Zachgo, S., Saedler, H. and Schwarz-Sommer, Z. (1997). Pollen-specific expression of *DEFH125*, a MADS-box transcription factor in *Antirrhinum* with unusual features. *The Plant Journal* 5, 1043-1050.

Zachgo, S., de Andrade Silva, E., Motte, P., Tröbner, W., Saedler, H. and Schwarz-Sommer, Z. (1995). Functional analysis of the *Antirrhinum* floral homeotic *DEFICIENS* gene *in vivo* and *in vitro* by using a temperature-sensitive mutant. *Development* 121, 2861-2875.

Zachgo, S., Dobberstein, B. and Griffiths, G. (1992). A block in degradation of MHC class II-associated invariant chain correlates with a reduction in transport from endosome carrier vesicles to the prelysosome compartment. *Journal of Cell Science* 103, 811-822.

## Publications – Botanical Garden

Borgmann, P., Westerholt, R., Oevermann, S. Zachgo, S. (2017) Webbasierte und mobile Datenerfassung im Projekt ‘Netzwerk zum Schutz gefährdeter Wildpflanzen in Deutschland (WIPs-De)’ *Natur und Landschaft*, 2: 69-75.

Borgmann, P., Burkart, M., Lauterbach, D., Listl, D., Martens, A., Nick, P., Oevermann, S., Poschlod, P., Radkowitsch, A., Reisch, C., Stevens, A.-D., Straubinger, C., Zippel, E., Zachgo, S. (2015): WIPs-De: Wildpflanzenschutz Deutschland - Ein Projekt des Bundesprogramms zur Biologischen Vielfalt. Natur und Landschaft 90, Heft 12, S. 550-555.

Lauterbach, D., Borgmann, P., Daumann, J., Kuppinger A.-L., Listl, D., Martens, A., Nick, P., Oevermann, S., Poschlod, P., Radkowitsch, A., Reisch, C., Stevens, A.-D., Straubinger, C., Zachgo, S., Zippel, E., Burkart, M. (2015): Allgemeine Qualitätsstandards für Erhaltungskulturen gefährdeter Wildpflanzen. Gärtnerisch-Botanischer Brief 200, S. 16-39

Borgmann, P., Oevermann, S., Friesen, N. und Zachgo, S. (2014) Die Genbank für Wildpflanzen für Ernährung und Landwirtschaft (WEL). In: Poschlod, P., Borgmann, P., Listl, D., Reisch, C. Zachgo, S. (eds.): Handbuch Genbank WEL. Regensburg: HOPPEA Denkschriften der Regensburgischen Botanischen Gesellschaft, 41 – 69.

Borgmann, P., Westerholt, R., Oevermann, S. and Zachgo, S. (2014) [WEL-Webmapping](#). In: Poschlod, P., Borgmann, P., Listl, D., Reisch, C. and Zachgo, S. (eds.): Handbuch Genbank WEL. Regensburg: HOPPEA Denkschriften der Regensburgischen Botanischen Gesellschaft, 133 - 140.

Bleeker, W., Buschermöhle, F., Zachgo, S. (2012) Zertifizierung von Wildpflanzenherkünften mit molekularen Methoden. Ber. Ges. Pflanzenbauwiss. 6, 30 - 32.

Borgmann, P., Westerholt, R., Zimmer, B., Zachgo, S. (2012) Einsatz eines Geoportals in der Saatgut erfassung. Ber. Ges. Pflanzenbauwiss. 6, 17 – 19.

Zachgo, S., Friesen, N., Borgmann, P. (2012) Genbank für Wildpflanzen für Ernährung und Landwirtschaft (WEL). Ber. Ges. Pflanzenbauwiss. 6, 5 – 8.

Borgmann, P. und Zachgo, S. (2010) Aufbau einer nationalen Genbank für Wildpflanzen für Ernährung und Landwirtschaft (WEL). Tagungsband Informationstage Biologische Vielfalt, BLE. S. 195-209.