

## ***CURRICULUM VITAE***

**Ivan Kulich**

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**Date of Birth:** 25.04.1984 (Bojnice, Slovakia)

2 children, born in 2018 and 2020

### ***Education and Academic record***

- 1.4.2024-present** Principal Investigator at the Biology Centre CAS Institute of Plant Molecular Biology
- 2021-31.3.2024** Second postdoctoral position at IST Austria, Jiří Friml group.
- 2018-2021** Alexander von Humboldt stipend. Postdoctoral fellow at the University of Regensburg on Armadillo repeat only proteins in ROP GTPase cycle
- 2018-2020** Awarded by Czech Science Foundation grant [18-12579S](#) on the plant cell polarity development upon mechanical stimuli and pathogen attack.
- 2014-2017** Awarded by 3-year post-junior grant [14-27329P](#) from Czech Science Foundation focusing on the trichome polarity.
- 2013** PhD thesis focusing on the multiple functions of the plant exocyst complex.
- 2011** Awarded by Charles University Grant Agency grant [658112](#) focusing on the exocyst complex in the trichome polarity and morphogenesis.
- 2008** Participating in grant [GAAV KJB 600380802](#), [EMBO Short term fellowship](#), and visit in Tel Aviv University (Prof. Shaul Yalovsky).
- 2007-2013** PhD studies at Faculty of Natural Sciences of Charles University, biology studies, focusing at plant molecular and cellular biology, visit to collaborative laboratory at Oregon State University (Prof. John Fowler).
- 2006** Participating in grant [MSMT ME841](#).
- 2002-2007** Faculty of Natural Sciences of Charles University, biology studies, focusing on plant molecular biology, finished master degree.
- 1998-2002** Secondary school V.B.Nedožerského in Prievidza, class with extended education of mathematics and natural sciences.

## Teaching activities

- 2012-2017** Lecturing the Plant Physiology course at the Faculty of Natural Sciences of Charles University, both Czech and English parallels, 50% of all lectures.
- 2011-2018** Participating in a plant molecular biology practical course.
- 2012-present** Supervised 3 bachelor students, 4 master students and **2 Ph.D. students** (one finished in 2018, other finished in 2020).

## Other activities and awards

- Organized the conference “European Network for Plant Endomembrane Research 2017” in Prague (ENPER2017).
- Best poster award by the American Society of Plant Biologists from the International Workshop on Plant Membrane Biology in Glasgow, 2019.
- Plant Physiology cover: <http://www.plantphysiol.org/content/168/1/local/front-matter.pdf>
- Reviewing for multiple journals, including Plant Cell
- A hobby of 3D printing lab equipment (customized imaging chambers, magnetic racks, models for teaching etc.)

## Publication list

### Notes to the publications

I am corresponding author of 5 publications (highlighted name in blue). Important publications are underlined. My H-index is 18 with 1632 citations (7.2.2024)

- Kulich, I.**, Schmid, J., Teplova, A., Qi, L., Friml, J., 2023. Rapid redirection of auxin fluxes during root gravitropism by translocation of NGR proteins driving polarization of PIN-activating kinases. *eLife* 12.
- Bieleszová, K., Hladík, P., Kubala, M., Napier, R., Brunoni, F., Gelová, Z., Fiedler, L., **Kulich, I.**, Strnad, M., Doležal, K., Novák, O., Friml, J., Žukauskaitė, A., 2023. New fluorescent auxin derivatives: anti-auxin activity and accumulation patterns in *Arabidopsis thaliana*. *Plant Growth Regulation* 1-14.
- Huebbers, J.W., Caldarescu, G.A., Kubatova, Z., Sabol, P., Levecque, S.C., Kuhn, H., **Kulich, I.**, Reinstaedler, A., Buettgen, K., Manga-Robles, A., others, 2023. Interplay of EXO70 and MLO proteins modulates trichome cell wall composition and powdery mildew susceptibility. *The Plant Cell*
- Ortmannová, J., Sekereš, J., **Kulich, I.**, Šantrůček, J., Dobrev, P., Žárský, V., Pečenková, T., 2022. *Arabidopsis* EXO70B2 exocyst subunit contributes to papillae and encasement formation in antifungal defence. *Journal of experimental botany* 73, 742–755.
- Rodriguez, L., Fiedler, L., Zou, M., Giannini, C., Monzer, A., Gelova, Z., Verstraeten, I., Hajny, J., Tan, S., Hoermayer, L., **Kulich, I.** and others, 2022. Cell surface auxin signalling directly targets PIN-mediated auxin fluxes for adaptive plant development. *bioRxiv* 2022–11.
- Xin, P., Schier, J., Šefrnová, Y., **Kulich, I.**, Dubrovsky, J.G., Vielle-Calzada, J.-P., Soukup, A., 2022. The *Arabidopsis* TETRATRICOPEPTIDE-REPEAT THIOREDOXIN-LIKE (TTL) family members are involved in root system formation via their interaction with cytoskeleton and cell wall remodeling. *The Plant Journal* 112, 946–965.
- Marković, V., **Kulich, I.**, Žárský, V., 2021. Functional specialization within the EXO70 gene family in *Arabidopsis*. *International Journal of Molecular Sciences* 22, 7595.
- Marković, V., Cvrčková, F., Potocký, M., **Kulich, I.**, Pejchar, P., Kollárová, E., Synek, L., Žárský, V., 2020. EXO70A2 is critical for exocyst complex function in pollen development. *Plant physiology* 184, 1823–1839.
- Širl, M., Šnajdrová, T., Gutiérrez-Alanís, D., Dubrovsky, J.G., Vielle-Calzada, J.P., **Kulich, I.**, Soukup, A., 2020. At-hook motif nuclear localised protein 18 as a novel modulator of root system architecture. *International journal of molecular sciences* 21, 1886.

- Kulich, I., Vogler, F., Bleckmann, A., Cyprys, P., Lindemeier, M., Fuchs, I., Krassini, L., Schubert, T., Steinbrenner, J., Beynon, J., others, 2020.** ARMADILLO REPEAT ONLY proteins confine Rho GTPase signalling to polar growth sites. *Nature Plants* 6, 1275–1288.
- Kubátová, Z., Pejchar, P., Potocký, M., Sekereš, J., Žárský, V., **Kulich, I.**, 2019. Arabidopsis trichome contains two plasma membrane domains with different lipid compositions which attract distinct EXO70 subunits. *International journal of molecular sciences* 20, 3803.
- Kulich, I., Vojtíková, Z., Sabol, P., Ortmanová, J., Neděla, V., Tihlaříková, E., Žárský, V., 2018.** Exocyst subunit EXO70H4 has a specific role in callose synthase secretion and silica accumulation. *Plant physiology* 176, 2040–2051.
- Pečenková, T., Markovič, V., Sabol, P., **Kulich, I., Žárský, V., 2018.** Exocyst and autophagy-related membrane trafficking in plants. *Journal of Experimental Botany* 69, 47–57.
- Synek, L., Vukašinović, N., **Kulich, I., Hála, M., Aldorfová, K., Fendrych, M., Žárský, V., 2017.** EXO70C2 is a key regulatory factor for optimal tip growth of pollen. *Plant Physiology* 174, 223–240.
- Sabol, P., **Kulich, I., Žárský, V., 2017.** RIN4 recruits the exocyst subunit EXO70B1 to the plasma membrane. *Journal of experimental botany* 68, 3253–3265.
- Pečenková, T., Sabol, P., **Kulich, I., Ortmanová, J., Žárský, V., 2016.** Constitutive negative regulation of R proteins in Arabidopsis also via autophagy related pathway? *Frontiers in plant science* 7, 260.
- Kulich, I., Vojtíková, Z., Glanc, M., Ortmanová, J., Rasmann, S., Žárský, V., 2015.** Cell wall maturation of Arabidopsis trichomes is dependent on exocyst subunit EXO70H4 and involves callose deposition. *Plant Physiology* 168, 120–131.
- Rybak, K., Steiner, A., Synek, L., Klaeger, S., **Kulich, I., Facher, E., Wanner, G., Kuster, B., Zarsky, V., Persson, S., others, 2014.** Plant cytokinesis is orchestrated by the sequential action of the TRAPP II and exocyst tethering complexes. *Developmental Cell* 29, 607–620.
- Kulich, I., Žárský, V., 2014.** Autophagy-related direct membrane import from ER/cytoplasm into the vacuole or apoplast: a hidden gateway also for secondary metabolites and phytohormones? *International Journal of Molecular Sciences* 15, 7462–7474.
- Žárský, V., **Kulich, I., Fendrych, M., Pečenková, T., 2013.** Exocyst complexes multiple functions in plant cells secretory pathways. *Current opinion in plant biology* 16, 726–733.
- Kulich, I., Pečenková, T., Sekereš, J., Smetana, O., Fendrych, M., Foissner, I., Höftberger, M., Žárský, V., 2013.** Arabidopsis exocyst subcomplex containing subunit EXO70B1 is involved in autophagy-related transport to the vacuole. *Traffic* 14, 1155–1165.
- Drdova, E.J., Synek, L., Pečenková, T., Hála, M., **Kulich, I., Fowler, J.E., Murphy, A.S., Žárský, V., 2013.** The exocyst complex contributes to PIN auxin efflux carrier recycling and polar auxin transport in Arabidopsis. *The Plant Journal* 73, 709–719.
- Cvrčková, F., Grunt, M., Bezvoda, R., Hála, M., **Kulich, I., Rawat, A., Žárský, V., 2012.** Evolution of the land plant exocyst complexes. *Frontiers in plant science* 3, 159.
- Pečenková, T., Hála, M., **Kulich, I., Kocourková, D., Drdová, E., Fendrych, M., Toupalová, H., Žárský, V., 2011.** The role for the exocyst complex subunits Exo70B2 and Exo70H1 in the plant–pathogen interaction. *Journal of experimental botany* 62, 2107–2116.
- Kulich, I., Cole, R., Drdová, E., Cvrčková, F., Soukup, A., Fowler, J., Žárský, V., 2010.** Arabidopsis exocyst subunits SEC8 and EXO70A1 and exocyst interactor ROH1 are involved in the localized deposition of seed coat pectin. *New Phytologist* 188, 615–625.
- Hála, M., Cole, R., Synek, L., Drdova, E., **Kulich, I., Pecenkova, T., Hochholdinger, F., Cvrckova, F., Fowler, J., Zarsky, V., 2008.** Exocyst complex functions in plant development. *Comparative Biochemistry and Physiology, Part A* 3, S189.