Curriculum Vitae
Taishi Umezawa

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Education

Ph.D., Graduate School of Agricultural Sciences, Laboratory of Plant Genetic Engineering (Advisor: Dr. Tatsuhito Fujimura), University of Tsukuba, Tsukuba, JAPAN (2001)
"*Isolation of salt stress-responsive genes from soybean.*"

Master of Science, Graduate School of Agricultural Sciences, Laboratory of Crop Science (Advisor: Dr. Takao Ueda), University of Tsukuba, Tsukuba, JAPAN (1998)
"*Biochemical analysis of salt tolerance in soybean.*"

B.A. in Agricultural Science, University of Tsukuba, Tsukuba, JAPAN (1996)

Professional Experience

Professor, Faculty of Agriculture, Tokyo University of Agriculture and Technology, Koganei, JAPAN (July 2019-present)

Associate Professor, Faculty of Agriculture, Tokyo University of Agriculture and Technology, Koganei, JAPAN (July 2011-2019)
"Protein phosphorylation network in response to abscisic acid in plants."

Research Scientist, Gene Discovery Research Team (Advisor: Dr. Kazuo Shinozaki), RIKEN Plant Science Center, Tsukuba, JAPAN (April 2004 - June 2011)
"*Signal transduction system in response to environmental stresses in Arabidopsis.*"

*Visiting Scholar, Department of Biochemistry, Laboratory of Dr. Scott C. Peck, Columbia, MO, USA (2007, 2011) "*Phospho-proteomics of abiotic stress responses in plants*"

Post-Doctoral Research Associate, Laboratory of Plant Molecular Biology (Advisor: Dr. Kazuo Shinozaki), RIKEN, Tsukuba, JAPAN (April 2001 – March 2004)
"*Identification of key genes for stress tolerance in plants.*"

Awards and Fellowships

Highly Cited Researcher, Clarivate Analytics (2017-2019)

Selected publications

1. Takase, H., Nagano, A., Yamauchi, S., Hayashi, Y., Takahashi, K., Kamiyama, Y., Yamashita, K., Katagiri, S., Li, Y., Fuji, S., Tahara, K., Noguchi, M., Kawaguchi, Y., Adachi, S., Kodama, Y., Nishihama, R., Takemiya, A., Kinoshita, T. and **Umezawa, T.** "Raf-like protein kinase heterocomplexes directly regulate the plant plasma membrane H^+-ATPase." ***Science*** 392(6799): 755-760.
2. Yamauchi, S., Fuji, S., Ikuta, H., Sugiyama, N., Kodama, Y., Distefano, L., Fujii, H., Yamashita, K., Takase, H., Nomoto, M., Tada, Y., **Umezawa, T.**, Hotta, K., Santelia, D., Shimazaki, K.I. and Takemiya, A. (2026) "Phosphorylation of WDR48 by phototropins drives starch degradation to promote stomatal opening." ***Nat. Commun.*** 17:3601.
3. Yamashita, K., Katagiri, S., Takase, H., Li, Y., Oishi, A., Otoguro, A., Kamiyama, Y., Yamauchi, S., Wang, Y-S., Takemiya, A., Mori, I.C., Kollist, H. and **Umezawa, T.** (2025) "MAP4K1 and MAP4K2 regulate ABA-induced and Ca^{2+}-mediated stomatal closure in Arabidopsis." ***Science Adv.*** 11(51): eadt4916.
4. Kamiyama, Y., Katagiri, S., Li, Y., Yamashita, K., Takase, H. and **Umezawa, T.** (2025) "Hyperosmolarity-induced suppression of group B1 Raf-like protein kinases modulates drought-growth trade-off in Arabidopsis" ***Proc. Natl. Acad. Sci. USA.*** 121(52):e2419204121.
5. Li, Y., Kamiyama, Y., Minegishi, F., Tamura, Y., Yamashita, K., Katagiri, S., Takase, H., Otani, M., Tojo, R., Rupp, G.E., Suzuki, T., Kawakami, N., Peck, S.C. and **Umezawa, T.** (2024) "Group C MAP kinases phosphorylate MBD10 to regulate ABA-induced leaf senescence in Arabidopsis." ***Plant J.*** 118(6):1747-1759.
6. Katagiri, S., Kamiyama, Y., Yamashita, K., Iizumi, S., Suzuki, R., Aoi, Y., Takahashi, F., Kasahara, H., Kinoshita, T. and **Umezawa, T.** (2024) "Accumulation of Phosphorylated SnRK2-Substrate 1 Promotes Drought Escape in Arabidopsis." ***Plant Cell Physiol.*** 65(2):259-268.
7. Kamiyama, Y., Hirotani, M., Ishikawa, S., Minegishi, F., Katagiri, S., Rogan, C.J., Takahashi, F., Nomoto, M., Ishikawa, K., Kodama, Y., Tada, Y., Takezawa, D., Anderson, J.C., Peck, S.C., Shinozaki, K. and **Umezawa, T.** (2021) "Arabidopsis group C Raf-like protein kinases negatively regulate abscisic acid signaling and are direct substrates of SnRK2." ***Proc. Natl. Acad. Sci. USA.*** 118(30):e2100073118.
8. Saruhashi, M., Kumar-Ghosh, T., Arai, K., Ishizaki, Y., Hagiwara, K., Komatsu, K., Izumikawa, K., Yoshikawa, H., Shiwa, Y., Umezawa, T., Sakata, Y. and Takezawa, D. (2015) "Plant Raf-like kinase integrates abscisic acid and hyperosmotic stress signaling upstream of SNF1-related protein kinase2." ***Proc. Nat. Acad. Sci. USA.*** 12(46): E6388-96.
9. **Umezawa, T.**, Sugiyama, N., Takahashi, F., Anderson, J.C., Ishihama, Y., Peck, S.C. and Shinozaki, K. "Genetics and phosphoproteomics reveal a protein phosphorylation network in the abscisic acid pathway in *Arabidopsis thaliana*." ***Sci. Signal.*** 6(270): rs8. (2013)
10. Umezawa, T., Sugiyama, Y., Mizoguchi, M., Hayashi, S., Myouga, F., Yamaguchi-Shinozaki, K., Ishihama, Y., Hirayama, T. and Shinozaki, K. (2009) "Type 2C protein phosphatases directly regulate abscisic acid-activated protein kinases in Arabidopsis." ***Proc. Natl. Acad. Sci. U.S.A.*** 106(41):17588-17593.