



研究室の業績 2012

Matsumoto S, Mizutani M, Sakata K, Shimizu B.: Molecular cloning and functional analysis of the ortho-hydroxylases of p-coumaroyl coenzyme A/feruloyl coenzyme A involved in formation of umbelliferone and scopoletin in sweet potato, *Ipomoea batatas* (L.) Lam. *Phytochemistry* 74: 49-57.

Vialart G, Hehn A, Olry A, Ito K, Krieger C, Larbat R, Paris C, Shimizu B, Sugimoto Y, Mizutani M, Bourgaud F.: A 2-oxoglutarate-dependent dioxygenase from *Ruta graveolens* L. exhibits p-coumaroyl-coA 2'-hydroxylase activity (C2'H), a missing step in the synthesis of umbelliferone in plants. *Plant J.* 70 (3), 460-467.

kusakari, K., Yokoyama, Y., Inomata, S., Gozu, Y, Katagiri, C., Sugimoto, Y.: Large-scale production of saikosaponins through root culturing of *Bupleurum falcatum* L. using modified airlift reactors, *Journal of Bioscience and Bioengineering*, 113 (1), 99-105

Yamauchi, Y., Hasegawa, A., Mano, J., Khorobrykh, S., Mizutani, M., Sugimoto, Y.: Chloroplastic NADPH-dependent alkenal/one oxidoreductase contributes to detoxification of reactive carbonyls originated from photosystem I under oxidative stress, *FEBS Letters*, 586, 1208-1213.

Nakai, A., Yamauchi, Y., Sumi, K., Tanaka, K.: Role of acylamino acid-releasing enzyme/oxidized protein hydrolase in sustaining homeostasis of the cytoplasmic antioxidative system, *Planta* 236, 426-436.

Marutani, Y., Yamauchi, Y., Akimoto, S., Mizutani, M., Sugimoto, Y.: Damage to photosystem II due to heat stress without light-driven electron flow: involvement of enhanced introduction of reducing power into thylakoid membranes, *Planta*, 236, 753-761.

Sawada, R., Yamauchi, Y., Sugimoto, Y.: Germination response of *Striga hermonthica* and *Orobancha minor* seeds pre-treated with the synthetic strigolactone GR24, *Recent Research Developments in Phytochemistry*, 10, 1-12.

Gohain B, Borchetia S, Bhorali P, Agarwal N, Bhuyan LP, Rahman A, Sakata K, Mizutani M, Shimizu B, Gurusubramaniam G, Ravindranath R, Kalita MC, Hazarika M, Das S.: Understanding Darjeeling tea flavour on a

molecular basis. *Plant Mol Biol.* 78 (6), 577-97.

Todoroki Y, Naiki K, Muramatsu T, Ohnishi T, Ueno K, Mizutani M, Hirai N.: A conformationally restricted uniconazole analogue as a specific inhibitor of rice ent-kaurene oxidase, CYP701A6. *Bioorg Med Chem Lett.* 22 (9), 3240-3.

Okazaki M, Kittikorn M, Ueno K, Mizutani M, Hirai N, Kondo S, Ohnishi T, Todoroki Y.: Abscinsazole-E2B, a practical and selective inhibitor of ABA 8'-hydroxylase CYP707A. *Bioorg Med Chem.* 20 (10), 3162-72.

Mizutani M.: Impacts of diversification of cytochrome P450 on plant metabolism. *Biol Pharm Bull.* 35 (6), 824-32

Sakamoto T, Ohnishi T, Fujioka S, Watanabe B, Mizutani M. (2012): Rice CYP90D2 and CYP90D3 catalyze C-23 hydroxylation of brassinosteroids in vitro. *Plant Physiol Biochem.* 58, 220-6

Ohnishi T, Godza B, Watanabe B, Fujioka S, Hategan L, Ide K, Shibata K, Yokota T, Szekeres M, Mizutani M.: CYP90A1/CPD, a brassinosteroid biosynthetic cytochrome P450 of Arabidopsis, catalyzes C-3 oxidation. *J Biol Chem.* 287 (37), 31551-60.



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