

Xylem Differentiation-Inducing Polyamine Xylemin

Xylemin Dihydrochloride

250mg / 1g [X0080]

Xylemin is a polyamine whose unique function was reported by Taku Takahashi, Hiroyasu Motose and coworkers in 2016. It promotes xylem differentiation with co-treatment of synthetic proauxin (2,4-D IOE) by the inhibition of thermospermine biosynthesis. (thermospermin suppresses xylem differentiation.)

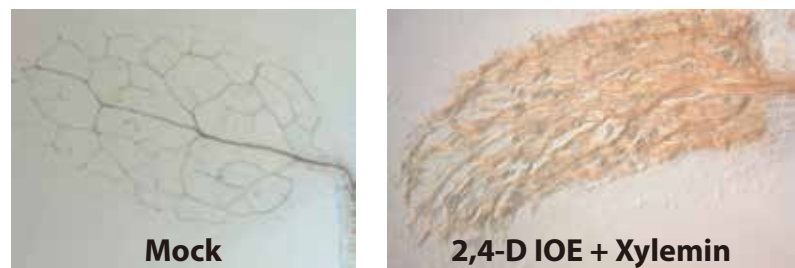
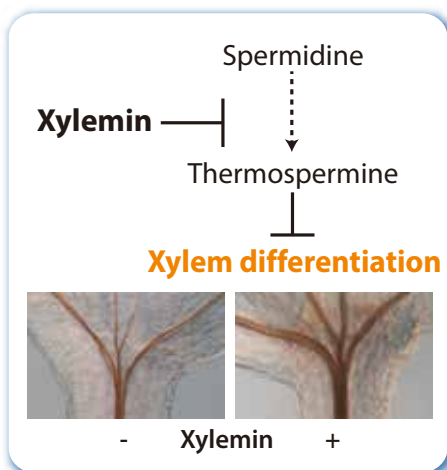


Figure 1. Cotyledons of *Nicotiana benthamiana* cleared after fixation. (Left ; Grown in the media not containing xylemin and proauxin.) (Right ; Grown in the media containing xylemin and proauxin.)

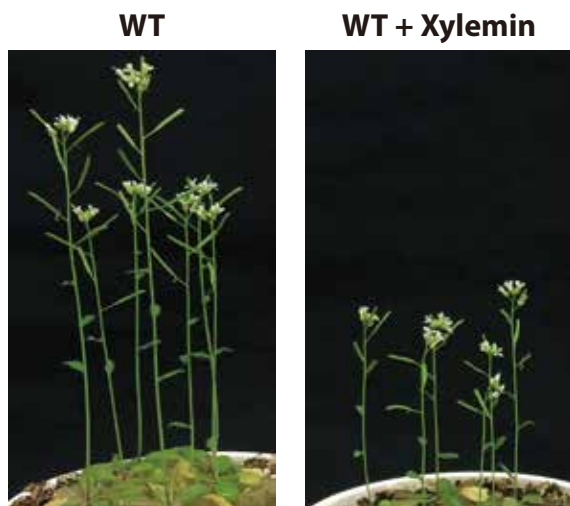


Figure 2. Xylemin has an effect on dwarfing. (Right ; *Arabidopsis thaliana* grown with xylemin applied on its shoot apex.)

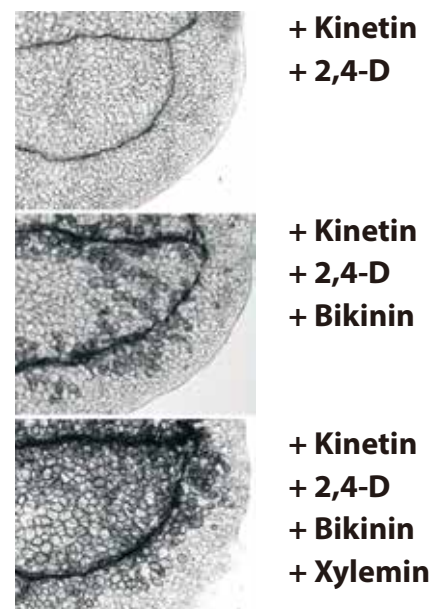


Figure 3. Synergistic effect of xylemin in ectopic xylem differentiation of cotyledons of *A. thaliana*.

Image data and every kind of information have been provided by Prof. Taku Takahashi and Assoc. Prof. Yasuhiro Motose.

References

- 1) K. Yoshimoto, H. Takamura, I. Kadota, H. Motose, T. Takahashi, *Sci. Rep.* **2016**, *6*, 21487. <https://doi.org/10.1104/pp.104.055145>
- 2) Y. Kondo, H. Fukuda, *et al.*, *Nat. Commun.* **2014**, *5*, 3504. <https://doi.org/10.1038/ncomms4504>
- 3) M. Yamaguchi, T. Demura, *et al.*, *Plant Physiol.* **2010**, *153*, 906. <https://doi.org/10.1104/pp.110.154013>
- 4) S. Sawa, T. Demura, G. Horiguchi, M. Kubo, H. Fukuda, *Plant Physiol.* **2005**, *137*, 141. <https://doi.org/10.1104/pp.104.055145>

Xylem Differentiation-Inducing Polyamine: Xylemin

Other compounds reported as accelerators for xylem differentiation^{2,3,4)}

Bikinin	25mg [B4826]
Dexamethasone	1g [D1961]
β-Estradiol	1g / 5g / 25g [E0025]
Kinetin	1g / 5g [K0009]
2,4-D	25g / 500g [D0396]

Related Products

2,4-D Octan-2-yl Ester (= 2,4-D IOE)	100mg / 1g [O0518]
Putrescine	25g / 400g [D0239]
Spermidine Phosphate	1g / 5g [S0068]
Spermine Tetrahydrochloride	5g / 25g [B1468]

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