

## Supplementary materials

## Fibrillin (FBN) gene family and its role in plant growth, development, and environmental stress

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## Supplementary material

**Supplementary Figure S1.** Distribution of the PAP\_fibrillin (PF04755) domain across different taxonomic categories. The presence of the PAP\_fibrillin domain is shown in various organisms as identified through InterPro database analysis. The domain is color-coded by taxonomic category: Eukaryota is represented in green, and bacteria is represented in violet. PAP indicates proteins that are typically involved in lipid binding and are associated with plastids, which are key organelles in the cellular context of eukaryotic organisms. The presence and distribution of the PAP\_fibrillin domain across these two major taxonomic groups highlight its evolutionary significance and potential functional roles within diverse biological systems. PAP, plastid lipid-associated protein.

Supplementary Table S1. The fibrillin (FBN) families identified in plants.



**Supplementary Figure S1.** Distribution of the PAP\_fibrillin (PF04755) domain across different taxonomic categories. The presence of the PAP\_fibrillin domain is shown in various organisms as identified through InterPro database analysis. The domain is color-coded by taxonomic category: Eukaryota is represented in green, and bacteria is represented in violet. PAP indicates proteins that are typically involved in lipid binding and are associated with plastids, which are key organelles in the cellular context of eukaryotic organisms. The presence and distribution of the PAP\_fibrillin domain across these two major taxonomic groups highlight its evolutionary significance and potential functional roles within diverse biological systems. PAP, plastid lipid-associated protein.

Plant	FBN gene numbers	References
Arabidopsis thaliana	14	(Singh and McNellis, 2011)
Solanum lycopersicum	14	(Sun et al., 2022)
Cucumis sativus	10	(Kim et al., 2018)
Oryza sativa	11	(Li et al., 2020)
Triticum aestivum	26	(Jiang et al., 2020)
Cicer arietinum	12	(Pandey et al., 2023)
Crocus sativus	10	(Pandey et al., 2023)
Glycine max	16	(Zafer et al., 2023)
Populus trichocarpa	11	(Zafer et al., 2023)
Physcomitrium patens	10	(Zafer et al., 2023)

Supplementary Table S1. The fibrillin (FBN) families identified in plants.

## References

- Jiang, Y., Hu, H., Ma, Y., and Zhou, J. (2020). Genome-wide identification and characterization of the fibrillin gene family in *Triticum aestivum*. *PeerJ* 8, e9225. doi:10.7717/peerj.9225
- Kim, I., Lee, S. C., Kim, E. H., Song, K., Yang, T. J., and Kim, H. U. (2018). Genome-wide identification and expression analyses of the fibrillin family genes suggest their involvement in photoprotection in cucumber. *Plants* 7, 50. doi:10.3390/plants7030050
- Li, J., Li, X., Khatab, A. A., and Xie, G. (2020). Phylogeny, structural diversity and genome-wide expression analysis of fibrillin family genes in rice. *Phytochemistry* 175, 112377. doi:10.1016/j.phytochem.2020.112377
- Pandey, A., Sharma, P., Mishra, D., Dey, S., Malviya, R., and Gayen, D. (2023). Genome-wide identification of the fibrillin gene family in chickpea (*Cicer arietinum* L.) and its response to drought stress. *Int J. Biol. Macromol.* 234, 123757. doi:10.1016/j.ijbiomac.2023.123757
- Singh, D. K., and McNellis, T. W. (2011). Fibrillin protein function: the tip of the iceberg? *Trends Plant Sci.* 16, 432-441. doi:10.1016/j.tplants.2011.03.014
- Sun, H., Ren, M., and Zhang, J. (2022). Genome-wide identification and expression analysis of fibrillin (FBN) gene family in tomato (*Solanum lycopersicum* L.). *PeerJ* 10, e13414. doi:10.7717/peerj.13414
- Zafer, M. Z., Tahir, M. H. N., Khan, Z., Sajjad, M., Gao, X., Bakhtavar, M. A., Waheed, U., Siddique, M., Geng, Z., and Ur Rehman, S. (2023). Genome-wide characterization and sequence polymorphism analyses of *Glycine max* fibrillin (FBN) revealed its role in response to drought condition. *Genes* 14, 1188. doi:10.3390/genes14061188