

## Special Issue

# Advances in Our Understanding of the Plant Thylakoid and Its Lumen—from Empty Space to Crowded Compartment

### Message from the Guest Editor

The thylakoid lumen is known to be important for the formation of a proton gradient over the thylakoid membrane, which is needed for ATP synthesis; supporting and stabilizing oxygen evolution; and linking the electron transport between Photosystems II and I. It is now more than 20 years since the first pioneering proteomic analysis of the lumen compartment was published. This study showed that the lumen compartment contains a specific proteome with more than 40 unique proteins from various protein classes and several with unknown function. This has opened a new research avenue with many exciting new aspects, and it has become clear that the lumen-located proteins play a crucial role in numerous processes, most often linked with regulating thylakoid biogenesis and the activity and turnover of photosynthetic protein complexes. This emphasizes the important role of the thylakoid lumen for photosynthetic electron transfer and ultimately for plant fitness.

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### Guest Editor

Prof. Dr. Wolfgang P. Schröder

Department of Chemistry, Umeå University, SE-901 87 Umeå, Sweden

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## International Journal of Molecular Sciences

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Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[ijms@mdpi.com](mailto:ijms@mdpi.com)

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### Editor-in-Chief

Prof. Dr. Maurizio Battino

Department of Odontostomatologic and Specialized Clinical Sciences,  
Sez-Biochimica, Faculty of Medicine, Università Politecnica delle  
Marche, Via Ranieri 65, 60100 Ancona, Italy

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