



Interactions between membrane transporters and phospholipids

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Book Condition: New. Publisher/Verlag: VDM Verlag Dr. Müller | Phosphatidylethanolamine regulates the function and the structure of LmrP, a bacterial multidrug transporter associated to antibiotic resistance | Highly solved crystal structures and a wealth of biochemical data are now available for an increasing number of membrane proteins. However, the question of how lipid molecules interact with integral membrane proteins and regulate their structure and function in biological membranes remains unsatisfactorily addressed. This book discusses the functional mechanisms of membrane proteins in general and the effect of the surrounding lipidic environment, in the context of recent developments in the field. Recent experimental investigations on the proton gradient-driven multidrug transporter LmrP are also discussed. Using this membrane protein as a model, we demonstrated that the protein structure and function was depending on the phosphatidylethanolamine (PE) headgroup. We then showed that a negatively charged residue, Asp68, could participate in the interaction with PE and that such interaction is required for proper activity and structure of the protein. Because Asp-68 belongs to a highly conserved motif of the Major Facilitator Superfamily (MFS), this interaction might be a general feature of these transporters that is involved in proton gradient sensing and lipid dependence. | Format: Paperback | Language/Sprache: english | 138 gr | 92 pp.



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