

Special Issue

Frontiers in the Evolution and Engineering of Cellular Transporters and Receptors

Message from the Guest Editors

Cellular transporters and receptors provide essential mechanisms for regulating living systems, yet surprisingly little research has gone into either their origins or ways to modify their properties in order to improve or alter their functions. We perceive the questions of origins and engineering of transporters and receptors to be linked problems because the same basic techniques are likely to be needed to investigate how the first, simple proteins evolved to transport molecules or messages across cell membranes as needed to generate novel variants with new functionalities. The purpose of this volume is to bring together investigators who have been working on these problems, whether from a theoretical, experimental, or engineering perspective, in order to develop a sense of what has been accomplished so far, how much remains to be explored, and ways in which natural evolutionary processes and engineering approaches can be integrated to create new possibilities.

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