

# Contents

<b>1</b>	<b>Human-Specific Evolutionary Changes in the Biology of Siglecs .....</b>	<b>1</b>
	Flavio Schwarz, Jerry J. Fong, and Ajit Varki	
<b>2</b>	<b>Structural Changes of GPI Anchor After Its Attachment to Proteins: Functional Significance.....</b>	<b>17</b>
	Taroh Kinoshita	
<b>3</b>	<b>Novel Insights in Membrane Biology Utilizing Fluorescence Recovery After Photobleaching .....</b>	<b>27</b>
	Amitabha Chattopadhyay and Md. Jafurulla	
<b>4</b>	<b>Defects in Erythrocyte Membrane Skeletal Architecture .....</b>	<b>41</b>
	Avik Basu and Abhijit Chakrabarti	
<b>5</b>	<b>Membrane Rafts in the Erythrocyte Membrane: A Novel Role of MPP1p55.....</b>	<b>61</b>
	Aleksander F. Sikorski, Joanna Podkalicka, Walis Jones, and Agnieszka Biernatowska	
<b>6</b>	<b>Immuno-Modulatory Role of Porins: Host Immune Responses, Signaling Mechanisms and Vaccine Potential.....</b>	<b>79</b>
	Sanica C. Sakharwade, G.V.R. Krishna Prasad, and Arunika Mukhopadhyaya	
<b>7</b>	<b><i>Vibrio cholerae</i> Cytolysin: Structure–Function Mechanism of an Atypical <math>\beta</math>-Barrel Pore-Forming Toxin .....</b>	<b>109</b>
	Anand Kumar Rai and Kausik Chattopadhyay	
<b>8</b>	<b>New Vis-Tas in Lactosylceramide Research .....</b>	<b>127</b>
	Subroto Chatterjee, Sumita Mishra, and Sara Kimiko Suzuki	

<b>9</b>	<b>Plasma Membrane-Associated Sialidase Confers Cancer Initiation, Promotion and Progression.....</b>	<b>139</b>
	Taeko Miyagi, Kohta Takahashi, Kazuhiro Shiozaki, Kazunori Yamaguchi, and Masahiro Hosono	
<b>10</b>	<b>A Signal with a Difference: The Role of GPI Anchor Signal Sequence in Dictating Conformation and Function of the Als5 Adhesin in <i>Candida albicans</i>.....</b>	<b>147</b>
	Mohammad Faiz Ahmad, Pareeta Gajraj Mann, and Sneha Sudha Komath	
<b>11</b>	<b>Novel Chondroitin Sulfate Oligosaccharide Motifs as Biomarkers: Insights into Their Involvement in Brain Development.....</b>	<b>165</b>
	Kazuyuki Sugahara	
<b>12</b>	<b>Role of Hyaluronidases in the Catabolism of Chondroitin Sulfate .....</b>	<b>185</b>
	Shuhei Yamada	
<b>13</b>	<b>Pattern Recognition in Legume Lectins to Extrapolate Amino Acid Variability to Sugar Specificity .....</b>	<b>199</b>
	Nisha Jayaprakash Grandhi, Ashalatha Sreshty Mamidi, and Avadhesha Surolia	
<b>14</b>	<b>Conformational Dynamics of Oligosaccharides Characterized by Paramagnetism-Assisted NMR Spectroscopy in Conjunction with Molecular Dynamics Simulation.....</b>	<b>217</b>
	Ying Zhang, Takumi Yamaguchi, Tadashi Satoh, Maho Yagi-Utsumi, Yukiko Kamiya, Yoshitake Sakae, Yuko Okamoto, and Koichi Kato	
<b>15</b>	<b>Characterization of Cholesterol Crystalline Domains in Model and Biological Membranes Using X-Ray Diffraction .....</b>	<b>231</b>
	R. Preston Mason and Robert F. Jacob	
<b>16</b>	<b>Role of Lipid-Mediated Effects in <math>\beta_2</math>-Adrenergic Receptor Dimerization.....</b>	<b>247</b>
	Xavier Prasanna, Amitabha Chattopadhyay, and Durba Sengupta	
<b>17</b>	<b>Effect of Temperature on the Phase Behaviour of Fully Saturated DAPC Lipid Bilayer: A Comparative Molecular Dynamics Simulation Study .....</b>	<b>263</b>
	Ipsita Basu and Chaitali Mukhopadhyay	
<b>18</b>	<b>Biophysical Characterization of the Interaction of <i>O</i>-acetylcholines with the Major Bovine Seminal Plasma Protein, PDC-109 .....</b>	<b>279</b>
	Rajani S. Damai, Pradip K. Tarafdar, Bhanu Pratap Singh, S. Thirupathi Reddy, and Musti J. Swamy	

<b>19 Crystal Structure of Apo and Ligand Bound <i>Vibrio cholerae</i> Ribokinase (Vc-RK): Role of Monovalent Cation Induced Activation and Structural Flexibility in Sugar Phosphorylation</b> .....	293
Rakhi Paul, Madhumita Dandopath Patra, and Udayaditya Sen	
<b>20 Synthetic Glycolipids and (p)ppGpp Analogs: Development of Inhibitors for Mycobacterial Growth, Biofilm and Stringent Response</b> .....	309
Kirtimaan Syal, Krishnagopal Maiti, Kottari Naresh, Dipankar Chatterji, and N. Jayaraman	
<b>21 Regulations of Glycolipid: XI. Glycosyltransferase (GSL: GLTs) Genes Involved in SA-LeX and Related GSLs Biosynthesis in Carcinoma Cells by Biosimilar Apoptotic Agents: Potential Anticancer Drugs</b> .....	329
Subhash Basu, Rui Ma, Joseph R. Moskal, and Manju Basu	
<b>22 N-Acetylglucosaminyl 1-Phosphate Transferase: An Excellent Target for Developing New Generation Breast Cancer Therapeutic</b> .....	355
Aditi Banerjee, Juan A. Martinez, Maria O. Longas, Zhenbo Zhang, Jesus Santiago, Krishna Baksi, and Dipak K. Banerjee	
<b>23 Involvement of Vascular Endothelial Growth Factor in Serotonin 1A Receptor-Mediated Neuroproliferation in Neonatal Mouse Hippocampus</b> .....	375
S. Samaddar, B. Ranasinghe, S.J. Tantry, P.R. Debata, and P. Banerjee	
<b>24 Structural Heterogeneity of Glycoform of Alpha-1 Acid Glycoprotein in Alcoholic Cirrhosis Patients</b> .....	389
Goutam Mandal, Hirokazu Yagi, Koichi Kato, and Bishnu Pada Chatterjee	
<b>Index</b> .....	403

Biochemical Roles of Eukaryotic Cell Surface  
Macromolecules

Chakrabarti, A.; Surolia, A. (Eds.)

2015, IX, 411 p. 127 illus., 72 illus. in color., Hardcover

ISBN: 978-3-319-11279-4