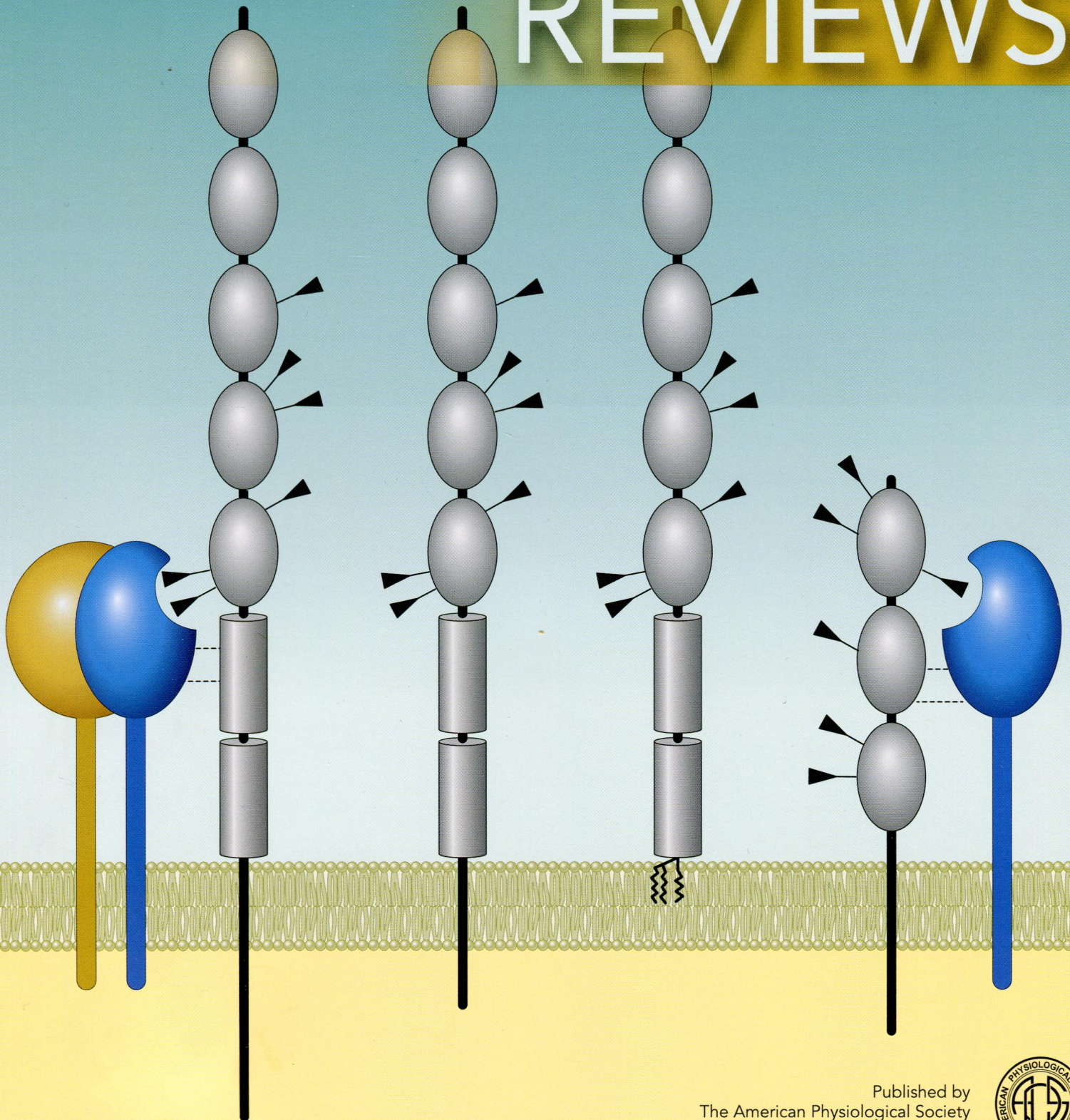


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P59/5

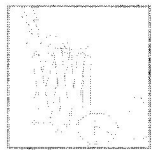
Volume 94 Number 2 April 2014

PHYSIOLOGICAL REVIEWS®



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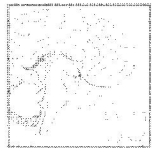




Oxidative Stress: An Essential Factor in the Pathogenesis of Gastrointestinal Mucosal Diseases

329

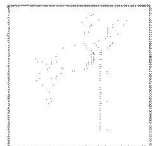
Asima Bhattacharyya, Ranajoy Chattopadhyay, Sankar Mitra, and Sheila E. Crowe



Thyroid Hormone Regulation of Metabolism

355

Rashmi Mullur, Yan-Yun Liu, and Gregory A. Brent



Transglutaminase Regulation of Cell Function

383

Richard L. Eckert, Mari T. Kaartinen, Maria Nurminskaya, Alexey M. Belkin, Gozde Colak, Gail V. W. Johnson, and Kapil Mehta



Structure and Function of TMEM16 Proteins (Anoctamins)

419

Nicoletta Pedemonte and Luis J. V. Galiotta



Sialic Acids in the Brain: Gangliosides and Polysialic Acid in Nervous System Development, Stability, Disease, and Regeneration

461

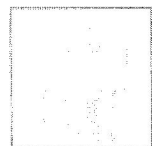
Ronald L. Schnaar, Rita Gerardy-Schahn, and Herbert Hildebrandt



Mitochondrial Channels: Ion Fluxes and More

519

Ildiko Szabo and Mario Zoratti



Cardiac Potassium Channel Subtypes: New Roles in Repolarization and Arrhythmia

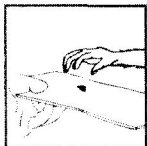
609

Nicole Schmitt, Morten Grunnet, and Søren-Peter Olesen

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Cover: Model for the enzymatic specificity of polysialic acid transfer to the neural cell adhesion molecule NCAM and the synaptic cell adhesion molecule SynCAM 1. *Left:* two mammalian polysialyltransferases, ST8Sia-II and ST8Sia-IV, are shown as blue and gold transmembrane molecules facing the Golgi lumen. Each independently transfers polysialic acid primarily to NCAM on its fifth immunoglobulin-like (Ig-like) domain (gray oval) at the terminus of two specific N-linked glycans (black triangles). Interactions between each transferase and NCAM's first fibronectin type III repeat (gray cylinder) are required to position the enzyme active site. *Middle:* all three NCAM isoforms, which differ in their membrane and intracellular domains, are acceptors for polysialylation. *Right:* ST8Sia-II (blue) also adds polysialic acid to the first Ig-like domain of SynCAM 1, targeted via interactions with the SynCAM's second Ig-like domain. See Schnaar, Ronald L., Rita Gerardy-Schahn, and Herbert Hildebrandt. *Physiol Rev* 94: 461–518, 2014.



**Cortical Mechanisms Underlying the Organization
of Goal-Directed Actions and Mirror Neuron-Based
Action Understanding**

655

Giacomo Rizzolatti, Luigi Cattaneo, Maddalena Fabbri-Destro,
and Stefano Rozzi

Corrigendum

707