



## Î±-Gal and Anti-Gal: Î±1,3-Galactosyltransferase, Î±-Gal Epitopes, and the Natural Anti-Gal Antibody Subcellular Biochemistry (Hardback)

By -

Springer Science+Business Media, United States, 1999. Hardback. Condition: New. 1999 ed.. Language: English . Brand New Book \*\*\*\*\* Print on Demand \*\*\*\*\*. It has been 15 years since the first report on the isolation of anti-Gal from human serum and the demonstration that this antibody is the most prevalent antibody in humans (Galili et al. , ]. Exp. Med. 160: 1519, 1984). Subsequent interdisciplinary studies in immunology, carbohydrate biochemistry, molecular biology, and evolution demonstrated the highly restricted specificity of anti-Gal for the carbohydrate epitope Gal α1-3Galβ1-4GlcNAc-R, (termed here the a-gal epitope), the unprecedented evolutionary pattern of distribution of a-gal and anti-Gal in mammals, and explained the evolution of this antigen and antibody by analysis of the a 1,3galactosyltransferase gene, the gene that encodes the enzyme that synthesizes the a-gal epitope. These studies have suggested that a major selection process that occurred in the course of evolution of ancestral Old World primates resulted in the inactivation of the a1,3galactosyltransferase gene and the subsequent appearance of anti-Gal in these primates. Other studies in immunoparasitology have demonstrated the possible physiologic significance of anti-Gal in protection against certain parasitic infections. Major scientific attention was focused on a-gal...



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