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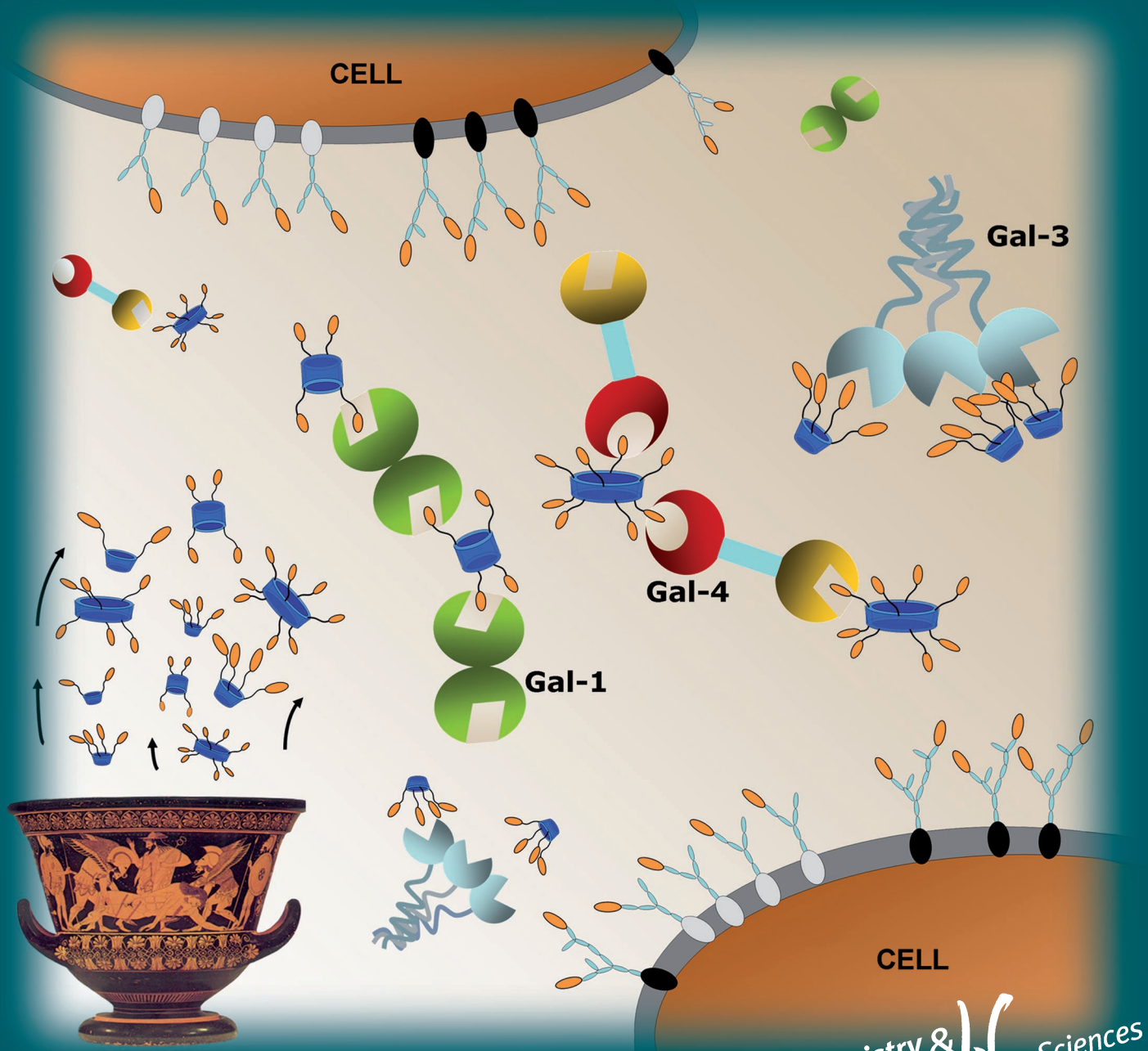
CHEMBIOCHEM

OF CHEMICAL BIOLOGY



Chemistry & Life Sciences

10/2008

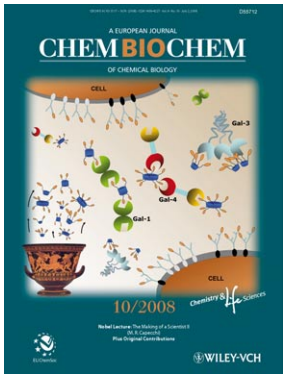
Nobel Lecture: The Making of a Scientist II
(M. R. Capecchi)
Plus Original Contributions

EUChemSoc

WILEY-VCH

Cover Picture

Sabine André, Francesco Sansone, Herbert Kaltner, Alessandro Casnati, Jürgen Kopitz, Hans-Joachim Gabius*, and Rocco Ungaro*



The cover picture shows how distinct glycoclusters can interfere with the activity of human adhesion/growth-regulatory proteins. The three human lectins of medical relevance (Gal-1, Gal-3 and Gal-4) selectively bind to multivalent calixarene glycoconjugates, neutralizing lectin activity. Of note is that the sugar ligands are presented with different spatial topology. This diversity is depicted as generated from an ancient *Calix*, the etymological origin of the name of these macrocycles. The orange ellipses on the cell surface and on the macrocycle scaffolds (in blue) represent sugar units that compete for lectin binding. In vitro bioassays indicate clear intergalectin selectivity of inhibition that depends on the conformational properties of the calix[*n*]arene scaffold and on the valency of the glycoclusters. The assays also reveal the potent reactivity of the glycoclusters towards a plant toxin from *Viscum album L.*, akin to ricin. Further details can be found in the article by H.-J. Gabius, R. Ungaro, et al. on p. 1649 ff.