

# 8<sup>th</sup> Molecular Immunology & Immunogenetics Congress

March 20-21, 2017 Rome, Italy

## Variety of immunoglobulin G functions

**Roald Nezlin**

Weizmann Institute of Science, Israel

Immunoglobulins are multifunctional protein molecules. In recent years several new functional activities of IgG were found in the studies of non-immune IgG complexes with various proteins. Serum contains thousand proteins of various origin and properties, synthesized by cells of the liver, spleen and other organs. IgG molecules could serve as scavengers, removing proteins that are potentially harmful to the body like anaphylatoxins, small toxic proteins of complement protein superfamily ("cleansing" IgG function). The properties of non-immune IgG complexes differ from those of their individual components. Various receptors are located on the surface of cells together with Fc-receptors and IgG complexes with active ligands can interact simultaneously with these two different types of cell receptors. During the past decade, it was found that glucose-regulated cell proteins including Grp94 are overexpressed in malignant cells of both solid and hematological tumors. Increased production of Grp94 is correlated with the progression of carcinogenesis and metastasis. Grp94 molecules can release into the circulation and form stable non-immune complexes with IgG. The detection of Grp94-IgG complexes has important clinical significance in pathologies with the Grp94 overexpression. The IgG complexes facilitate the detection of biomarkers as well as their isolation by specific adsorption properties of IgG. The adsorption of IgG complexes by bacterial Protein G helps to evaluate the exact amount of IgG partners in the complexes by quantitative immunochemical methods.

roald.nezlin@weizmann.ac.il