

Il 20/11/2017 alle ore 15.00 si terrà in Aula Rasetti (Edificio Marconi, Dipartimento di Fisica) il seminario della vincitrice della procedura concorsuale per RTDa Bando D.D. 6/2017 SC05E1 SSD BIO/10, Dr.ssa Alba Lepore

Titolo: Structural aspects of antibody-antigen recognition

Abstract

Antibodies are a class of Y-shaped proteins produced by B-cells that the immune system uses to identify and neutralize foreign pathogens such as bacteria and viruses. They have the remarkable ability to recognize virtually any foreign targets and bind to these with extraordinary affinity and specificity. These characteristics make antibodies an ideal tool for the prevention and treatment of diseases as well as for biotechnological applications. Knowing the structure of antibodies is clearly instrumental for gaining insights into the biological phenomena of the antibody–antigen recognition as well as to interpret clinical data and rationally redesign the molecule for medical and biotechnological purposes. However, the identification of the type of molecule bound by an antibody is a very complex and so far unsolved problem. While the antigen binding site of the antibody is complementary in shape to its cognate epitope, the latter can be of many different shapes even in similar molecules and, on the contrary, be similar in different molecules or types of molecules. We developed a novel approach for surface comparison of antibody binding sites which offers a significant technical advantage over other approaches and also represents a step towards the very elusive but important goal of predicting antibody specificity.

Il Direttore,

Prof. Paolo Mataloni