

Public Lecture – Garland R. Marshall

Molecular Recognition: The Devil's in the Details

Biology is based on molecular recognition: allergic responses, control of development and the menstrual cycle, drug resistance, etc. depends on the diversity of chemical substances produced in organisms. It is essential for one molecule in a soup of hundred of thousand of other molecules to find and activate its biological partner. The study of molecular recognition is the reason d'être for many biochemists, biophysicists, chemists and medicinal chemists. Two properties that are critical are affinity and specificity. The physical basis of these two properties will be explored based on examples from enzymology, bacterial and viral pathogenesis, drug design, and control of expression. The concepts utilized by medicinal chemists in their search for a magic bullet for AIDS or arthritis will be discussed.