

GENERAL INTRODUCTION

Connective tissue is a mesenchymal tissue in the adult. It is made up of four morphologic components, namely, cells, vessels, fibers, and ground substance. The proportion of these constituents varies. Ground substance is found almost everywhere, in the extracellular or intercellular space. It is a gel of varying consistency, composed of salts, water, proteins, and polysaccharides, in solution. Some of these polysaccharides, known as mucopolysaccharides, exist as protein polysaccharide complexes. The physical state of this ground substance may be related to the degree of polymerization, and the latter may be dependent on the synthesis and breakdown. The function of the ground substance, as an intercellular medium, may therefore be dependent on the metabolism of these complexes.

There are three fibers, or three types of fibers, in connective tissue: collagen, elastin, and reticulum. Much more is known of the protein collagen than about elastin and reticulum. Understanding the chemistry and metabolism of collagen is an important precursor to understanding its function.

The four main macromolecular constituents of human tissue are polysaccharides, nucleic acids, proteins, and certain lipids. These are complexes that do not dialyze through a graded dialysis tubing. The constituents of connective tissue, as outlined above, do not dialyze, and fit the crude definition of macromolecules. This, therefore, in brief, is an explanation of the terms of our title, "Connective Tissue: Intercellular Macromolecules."

It has been stated that biochemistry was begot out of chemistry by an unknown father. The unknown father must at least have been some sort of a biological creature. The function of biochemistry has been to explain the complexities of biological thought, to break down biological thought to simpler entities. The more recent advances in biochemistry have been the unusual accomplishments brought about by the contributions of, one, straight chemistry, and, two, molecular geometric visualization and interpretation of physicochemical factors, combined with biological common sense which is based on biochemical mechanisms, visualization of biological fine structure, and observation of biological phenomena.

Our symposium will try to reach these levels of accomplishment in a field of biological importance and interest. The chairman of each session has organized his program with these aims in view.

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