Orotic Acid

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Preface

This volume reviews a series of different publications dealing with orotic acid. Orotic acid was isolated from cow's milk 75 years ago by Biscaro and Belloni in Italy. Fifty years later again Italian scientists described the growth-promoting activity of orotic acid in vitamin B_{12}-deficient animals. Orotic acid is the precursor of pyrimidine nucleotides which are involved in many biochemical reactions: UTP and CTP, as substrates for RNA polymerase, and UDP sugars, as substrates for carbohydrate containing macromolecules, e.g. glycogen, glycoproteins and glycolipids. The biosynthesis of these pyrimidines is well regulated. Disturbance of the biosynthetic pathway or trapping of individual pyrimidine nucleotides may lead to severe metabolic and structural alterations of cells. Synthesis, biochemical aspects and physiological role are reviewed in nine chapters. In the last two decades increasing interest in orotic acid came from several studies showing protective or therapeutic or beneficial effects of this compound in different kinds of organ injuries: various forms of hepatic insufficiency, myocardial infarction, encephalopathy, memorization processes, mentioned in Chapters 8 and 9.

At the end of this overview a Bibliography in an alphabetical order with 673 references may give further insight in this topic.

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