

ABSTRACT

The purinosome is a multiprotein complex involved in the *de novo* purine synthesis (DNPS). Through a several steps of this metabolic pathway 5-phosphoribosyl-1-pyrophosphate is converted to inosine monophosphate, the precursor of purine nucleotides. Purine nucleotides are also synthesized from inosine monophosphate via a salvage pathway that utilizes hypoxanthine. The purinosome is a dynamic multienzyme complex which is assembled and disassembled by actual need and availability of purines. The purinosome assembly is disrupted in the inherited disorders of the DNPS enzymes - AICARibosiduria and adenylosuccinate lyase deficiency.

Detailed studies of assembly and dynamics of purinosome and identification of molecular changes associated with the formation of purinosome under physiological and pathological conditions are object of research. Besides better understanding of purine metabolism, in the future, it can open up new possibilities of drug development especially of new use of chemotherapeutics that block DNPS.

Key words: purinosome, *de novo* purine synthesis, defects of enzymes, metabolism, purinosome interactions, cell control