

Abstract

Septins are cytoskeletal GTP-binding proteins with unique properties that can be found in species ranging from single-cell eukaryotes to mammals with the exclusion of vascular plants. Septins are well conserved across species in both their structure and function. They are located in the cytoplasm, where they can assemble into filaments and higher order structures. Moreover, septins can interact with membranes, actin filaments, microtubules, and various proteins. Changes in septin expression often result in numerous defects in cellular processes and are, therefore, linked to a multitude of diseases. For that reason, mammalian septins appear to be of clinical importance. With the ever-increasing number of discovered cellular roles, septins are becoming a point of interest for many and the amount of information known about them grows rapidly. In this review, I attempt to summarise knowledge about the structure, assembly and function of mammalian septins, as well as their possible practical use.