Exosome is a protein complex present in the yeast nucleus and cytoplasm, which participates in RNA degradation, processing and turnover. The core of exosome consists of nine catalytically inactive subunits, which physically associate with RNA nuclease Rrp44. The function of exosome is dependent on many cofactors or facultatively associated enzymes, and these associations provide high versatility of the complex. In different compartments the complex works by other means and plays a role in distinct processes. In nucleus, exosome acts mainly in pre-RNA processing, whereas in cytoplasm its major role is to degrade native mRNA. Nevertheless, in all of these processes, its general role is the 3' exonucleolytic cleavage of single-stranded RNA. Exosome has homologs in many various kinds of organisms – e. g. different types of bacterial nucleases, archeal exosome, human PM-Scl complex (or exosome), which implicates high conservation of this degradation machinery. Thus, it is very likely that some exosome components lost their original function over the evolution, more than that the yeast exosome is an evolutionary innovation.