Abstract

A ribosome is a supramolecular structure, which mediates synthesis of all cellular proteins, and therefore is essential for cell life. The fact, that some nucleotides of ribosomal RNA are modified, is known for forty years. However only recently, successful deeper studies on how the individual modifications are synthesized and what is their effect on ribosome synthesis and function appear. Some particular nucleotide modifications are important for the ribosome formation (like m\(^1\)acp\(^3\)Ψ\(^1\)191 SSU), some others influence proper function of the ribosome (e.g. Um2921, Gm2922, Ψ2923 LSU, m\(^1\)acp\(^3\)Ψ\(^1\)191 SSU). Majority of modified nucleotides in eukaryotic rRNA is being recognized by small nucleolar RNA (snoRNA). Few nucleotides is, however, recognized and subsequently modified by specific proteins. These proteins also play crucial role in ribosome maturation. In thesis presented, current knowledge on the role of ribosomal RNA nucleotide modifications during their formation and maturation, and on their function is summarized and overviewed.