

Powering through ribosome assembly with molecular machines

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Ribosomes are large ribonucleoprotein machines that carry out the final stage of the central dogma by translating mRNA into proteins. High resolution structures of the ribosomes and associated translation factors have provided invaluable information about how ribosomes turn RNA into protein. One critical aspect of ribosome biology and the central dogma that is still poorly understood is the production of ribosomes. The assembly of ribosomes is an intricate process that relies on the aid of hundreds of ribosomal assembly factors, including many large molecular machines such as AAA-ATPases and endo and exo-ribonucleases. While these molecular machines are required for ribosome production, how they regulate ribosome assembly remains largely unknown. I will present recent structural work on deciphering how molecular machines regulate the early stages of ribosome assembly (1-4).

References:

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