

Abstract

The nucleocytoplasmic transport represents a crucial checkpoint of all signal pathways leading to the gene expression, the cell cycle maintenance, and RNA export processes. It is mediated by nuclear pore complexes (NPC) anchored in double nuclear membrane. The NPC structure and the basic architecture of the transport regulations are evolutionarily highly conserved across eukaryotic kingdoms; however, some significant differences and specifics exist in plants. In this thesis, I describe the contemporary level of our knowledge of the nucleocytoplasmic transport regulation and its actors *in animalia* generally and *in planta* in detail.