Nucleoporin

Nucleoporins are a family of proteins which are the constituent building blocks of the nuclear pore complex.

Nuclear pores are large protein complexes that cross the nuclear envelope, which is the double membrane surrounding the eukaryotic cell nucleus. There are about an average of 2000 nuclear pore complexes (NPCs), in the nuclear envelope of a vertebrate cell, but it varies depending on cell type and the stage in the life cycle.

The proteins that make up the nuclear pore complex are known as nucleoporins. About half of the nucleoporins typically contain solenoid protein domains—either an alpha solenoid or a beta-propeller fold, or in some cases both as separate structural domains. Each NPC contains at least 456 individual protein molecules and is composed of 30 distinct proteins (nucleoporins).

The other half show structural characteristics typical of “natively unfolded” or intrinsically disordered proteins, i.e. they are highly flexible proteins that lack ordered secondary structure.

These disordered proteins are the FG nucleoporins, so-called because their amino-acid sequence contains many phenylalanine—glycine repeats.

Unclassified

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