Protein misfolding is a common event in living cells. In young and healthy cells, the misfolded protein load is disposed of by protein quality control (PQC) systems. In aging cells and in cells with genetic diseases, the load may overwhelm the PQC capacity, resulting in accumulation of misfolded proteins.

Protein-misfolding diseases are characteristic by the accumulation of misfolded amyloidogenic proteins. Recent data indicate that a soluble pro-amyloidogenic oligomer (NAC) may be the toxic entity in these diseases, and the visible amyloid plaques, rather than causing the disease, may simply mark the terminal pathology.

In conclusion, protopathy refers to a class of diseases in which certain proteins become structurally abnormal, and thereby disrupt the function of cells, tissues and organs of the body. Often the proteins fail to fold into their normal configurations; in this misfolded state, the proteins can become too in toxic to play their normal function. The protopathies include such diseases as Creutzfeldt-Jakob disease and other prion diseases, Alzheimer's disease, Parkinson's disease...

Protein folding is a critical way of regulating biological activity and targeting proteins to different cellular locations. Aggregation of misfolded proteins that escape the cellular...