

In my talk I will present our research on ribonucleoprotein networks. Characterizing protein-RNA associations is key to unravel the complexity and functionality of mammalian genomes and could open up therapeutic avenues for the treatment of a broad range of neurodegenerative disorders. My laboratory works on associations of coding/non-coding RNAs with proteins involved in transcriptional and translational regulation as well as neurodegenerative diseases (examples include Parkinson's α -synuclein, Alzheimer's disease amyloid protein APP, TDP-43 and FUS). We aim to discover the involvement of RNA molecules in regulatory networks controlling protein production. More specifically, we are interested in understanding mechanisms whose alteration lead to aberrant accumulation of proteins. We have observed that interaction between proteins and their cognate mRNAs induce feedback loops that are crucial in protein homeostasis. Recently, we started to work on ribonucleoprotein granules and their implication in cell toxicity.