

**P062** Functional and interaction analyses of the human protein encoded by the interferon-responsive gene *ISG95*  
**Vaz, T. H., Silva, T. C. L. and Zanchin, N. I. T.**  
*Center for Structural Molecular Biology (CeBiME)*  
*Brazilian Synchrotron Light Laboratory*

The main mechanism of cell resistance to viral infection involves several genes from the interferon signaling pathway, called ISGs. Some of these genes can also be induced by alternative pathways. ISG95 expression is increased in response to interferon and CpG treatment, to HCV and VV infection, in leukemic cells and in mature TH1 cells. Although ISG95 contains four conserved domains (G-patch, FtsJ, DNA ligase/mRNA capping family domain and WW) indicating a function in RNA processing and modification, there is no data available on its functional role. ISG95 triphosphatase and S-adenosylmethionine and RNA binding activities were confirmed *in vitro*. The hypothesis whether ISG95 might be an RNA capping enzyme was tested using genetic assays based on the complementation of yeast conditional mutants deficient for each of the three genes encoding the enzymes for mRNA cap biosynthesis, which showed negative results. A yeast two-hybrid screen identified a group of proteins that function in pre-mRNA splicing and the RNA polymerase II as ISG95 interacting proteins. The possible role of ISG95 in pre-mRNA splicing has been investigated by using different approaches. Regulation of ISG95 promoter was assayed in Vero cells, which showed strong activation by interferon.