

Synopsis of scientific work

Giulia Piaggio accomplished her postdoctoral fellowship at the Department of Gene Expression of European Molecular Biology Laboratory (EMBL) in Heidelberg, under the supervision of Professor Riccardo Cortese. She joined in 1991 the "Regina Elena" Cancer Institute of Rome as senior staff scientist under the supervision of Dr. Ada Sacchi and where she is still working as a team leader. She spent several periods as visiting scientist in the laboratory of Molecular Growth Regulation, directed by Dr. Keiko Ozato, of the National Institute of Child Health and Human Development at NIH in Bethesda.

Since her postdoc at EMBL she is interested in transcriptional regulation of gene expression during cell proliferation, differentiation and transformation. Her work led to the identification, during differentiation, of a common mechanism of inactivation of a class of cell cycle regulatory genes mediated by the absence of the NF-Y transcriptional factor. Moreover, her studies have contributed to describe molecular mechanisms through which mutant p53 proteins exert their gain of function. Indeed, she identified that a complex of the mutant p53 protein, the NF-Y transcription factor, and the p300 protein has a role in regulating chromatin state and gene expression in proliferating cells and following DNA damage, with resultant effects on the proliferation of cancer cells. During her visits at NIH she set up several techniques to follow transcriptional molecular mechanisms in living cells, tissues and animals such as *in vivo* genomic footprinting, chromatin immunoprecipitation and fluorescence recovery after photobleaching (FRAP). Recently, she has been involved in the development of a transgenic mouse model to follow physiological and pathological proliferation events by bioluminescence *in vivo* imaging, BLI. This animal model got the cover picture of the volume of the *MboC* journal in April 2012 and, again, on *Annals of Anatomy* in press 2016. This animal model is now sold in Europe, thanks to a collaboration between IFO and the Italian biotech, Transgenic Operative Products, and on American market through the Charles River, a leading company in this field. Very recently, in collaboration with the IFOM zebrafish facility, she is involved in the development of the same biological model in zebrafish.