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OBITUARY

Prof Franco Tatò 1949–2001

Professor Franco Tatò died prematurely on 7th July at the age of 52.

He contributed fundamental mechanistic insights in highly descriptive, unmechanistic fields pertaining to cell transformation and cancerogenesis such as the interplay between proliferation and cell differentiation and their epigenetic control by the cell environment. In these areas he pursued pathways of investigations well in advance of their importance being generally recognized.

Franco Tatò was trained as a molecular biologist at the Institute of Cell Biology in Rome where he prepared his thesis on DNA polymerases. He then moved to John Wyke's laboratory at the Imperial Cancer Research Fund in London, at the time a Mecca for retrovirologists worldwide. This decision had a great influence on Tatò, who had entered the field of avian retroviruses in the season of the discovery of oncogenes, and at the ICRF he had the chance to come into contact with new ideas and learn new techniques. The fruits of this experience he brought back to Rome in 1980, first at the Istituto Superiore di Sanità and then at the University of Rome where, in time, he was appointed Professor of Virology. At the time the discipline of oncology in Italy was run by oncocrats and Tatò was one of the few who initiated the radical change to molecular oncology that flourishes now in this country.

In the early '80s Franco Tatò held the firm conviction that the study of the functions of oncogenes in differentiated cells should provide critical insights on the mechanisms of cell differentiation and, by the same token, that this same approach would lead to the resolution of one of the hallmarks of transformation, i.e. the perturbation of a given cell-specific differentiation program, which had remained an elusive phenomenon. He was also convinced that the formation of relevant hypotheses and their experimental verification could be facilitated by the expression of defined oncogenes in *in vitro* differentiating systems of relatively low complexity. These beliefs proved to be well-founded. In a few years, together with an array of collaborators, he produced a stream of results that have become cornerstones of studies on issues such as the mechanisms of interference of differentiation by oncogenes in cells belonging to different lineages. For instance, in a landmark paper the observation that the nonreceptor tyrosine kinase v-Src could elicit differentiation of phaeochromocytoma cells demonstrated, together with similar results concerning Ras concurrently published, the long-held view that proto-oncogenes were actually involved in regulation of differentiation. Furthermore, at a time in which the comprehension of the complex cellular signaling network flowing from the membrane to the nucleus was still rudimentary, this observation largely anticipated the discovery of tyrosine kinase receptors as key elements of neuronal differentiation. A further example of results whose implications were ahead of its time is represented by the observation that the v-myc oncogene is sufficient for conferring a proliferative potential to neuroectodermal cells with little interference of their differentiative potential. This suggested a novel experimental approach to the generation of clonal strains from short-lived neural precursor cells that would be exploited in neurobiology only during the next decade.

One of Tatò's assets was his perseverance in pursuing an hypothesis, sometimes for years. Once achieved his goal would shift direction and he would be far less interested in following its course. Thus his interests shifted with time from the mechanisms of cell transformation by defined oncogenes to the more elusive realms of the control of cell transformation by the surrounding 'normal' cells. A large number of studies had suggested that normal cells can express functions capable of suppressing transformation or tumorigenicity when fused to or simply interacting with transformed cells. While some phenotype could be attributed to the provision of the emerging category of tumor suppressor genes, others could be comfortably attributed to a novel, intercellular dimension in the control of transformation. In a number of seminal papers his group first defined classes of oncogenes in terms of susceptibility or refractoriness to growth suppression then, by exploiting the cell models established in previous years, identified the key role played by the expression of terminal differentiation in growth suppression. More recent projects included the identification of some of the molecules involved in the above processes as well as the discovery of a novel checkpoint during cytokinesis of mammalian cells.

Franco Tatò was unmoved by the siren's song of biochemical description of signaling pathways, not because he distrusted it but because he knew that it was difficult to use in the sophisticated cellular models adopted. Yet his explanations and hypotheses were always molecular in terms and his command of the wealth of biochemical information accumulated in other, more simple, contexts allowed him to modify his experimental settings so as to render them in time susceptible to a molecular definition.

Tatò's legacy extends beyond his scientific achievements. He was instrumental in the creation of a new Society of Microbiology in Italy and was a key promoter of the federation of the most important Italian societies in what is now FISV (Federation of

Italian Life Sciences Societies). As a mentor he nurtured his students with a sense of dedication to science.

Tatò the man was as exceptional as Tatò the biologist. He was always devoted to his supporting wife and his two sons. A person of great modesty, he was remarkable for his warmth, his kindness and his sense of humor. But above all, to those that knew him at all, he showed his unfailing intellectual curiosity and his generosity in helping to shape ideas and concepts, often in areas far from his expertise. We all miss him greatly.

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