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From human vaccines for viral diseases to those ones for oncogenic viruses and tumor antigens

The *Variola major*, the virus that causes the smallpox, lethal virus in the 30% of the cases, was eradicated in 1979 in the human species, thanks to a capillary vaccination on global scale. Recently, the World Health Organization declared that India and Southeast Asia are polio free; really a great achievement since the vaccine for polio, an infectious disease that can cause paralysis, was certificated safe and useful only 60 years ago. Last year over 800 million doses of combination vaccines are going to be used to vaccinate Chinese children whereas more than 20 million children worldwide do not receive one or more important vaccinations that would protect them from at least one preventable disease. Research is badly needed to develop strategies to communicate the importance of vaccinations to uncertain parents. The 2008 San Diego measles outbreak costed over 10.000 dollars for each infection in comparisons to the total cost to contain the outbreak (approximately 124.000 dollars). Even if there are rare cases of vaccine damage, the research to facilitate vaccination must be done to prevent diseases. The vaccine for HBV virus, responsible for hepatitis B infection is able to prevent 50% of all liver cancers. Human papilloma viruses (HPV) have been correlated with the cervical cancer (genotypes 16 and 18 particularly oncogenic in humans): The USA Food and Drug Administration in 2006 released the first vaccine against HPV. Long years of research were required for busting the new system to fight cancer. Research is going to obtain the complete sequence by proteomics approaches, in order to achieve adequate antigen preparations that might be used to generate assays for a specific anticancer vaccine. Finally, the ability of the immune system to recognize a tumor-associated antigen, thus enabling development of a vaccine approach for therapeutic application, represents a main target of this field of research.

Biography

Giulio Tarro completed his Graduation at Naples University (1962). He was a Research Associate in Division of Virology and Cancer Research at Children's Hospital (1965-1968); Assistant Professor of Research Pediatrics, College Medicine (1968-1969) at Cincinnati University, Ohio and; Professor of Oncological Virology at Naples University (1972-1985). He was a Chief in Virology division (1973-2003), Head in Department of Diagnostic Laboratories (2003-2006) at D. Cotugno Hospital for Infectious Diseases, Naples. Since 2007, he has been Chairman of Committee of Biotechnologies and Virus Sphere at World Academy Biomedical Technologies, UNESCO and; Adjunct Professor in Department of Biology at Temple University. His researches have been concerned with the characterization of specific virus-induced tumor antigens, which were the finger-prints left behind in human cancer.

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