

A New Concept about the Vaccines

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Since 2015, I have tried to introduce a hypothesis about the possibility of preparing new vaccines, taking into account certain factors that over the last years have changed the classical standards of vaccines production. In particular, I am referring to changing of the immune response of those who are vaccinated with classical vaccines. The answer to this fact, is the existence of a true mosaic in the range of these immune responses of the population of the world and especially, I refer here, to the population from Romania: children, adults and the elderly. The factors that led to this are well known. In my abstract "Vaccination versus Non-vaccination" that it was published in the Journal EuroSciCon dedicated for the 9th EuroSciCon Conference on Microbiology and Virology (April 22-23, 2019, Athens, Greece), I referred to the multiple radiations that chronically affect human organisms. Other factors have been talked and written about, for many years: pollution, nutrition, stress, etc.

For validation of all about I mentioned, I will just give one example: working many years in the laboratory and more in the field of research, immediately after the appearance of the Engerix B vaccine produced by the GlaxoSmithKline (GSK) company and which I personally consider to be a very good vaccine, in 2007, all those who worked in the Respiratory Viruses laboratory and in others laboratories of the Cantacuzino Institute, Bucharest, Romania, have been vaccinated with 2 doses (as many were received from GSK).

During the last year, those who wanted to be vaccinated with the third dose, they have been before tested for the dosage of the titers of antibodies anti HBs present in the sera. In the laboratory where I worked, I personally had an antibodies titer of 40 micrograms/l (the protective titer being greater than 10 micrograms/l), a colleague of mine had a titer that falls within the equivocal range, respectively 8 micrograms/l, and another colleague has a negative titer of 4 micrograms/l (I mention that none of the 2 colleagues have serious problems with immunity, respectively cancer, viral infection with HIV, HBV, HCV, etc.).

I would like to make some mentions about the personal hypothesis about the possibility of producing a respiratory vaccine, especially against the serious infections caused by Respiratory Syncytial Virus (RSV) and which usually occur in children up to 2 years old. For long time, the formula of this vaccine has been not found, because the main fact that the antibodies that pass from the mother to the fetus are not protective.

The main idea (which can be also applied to other vaccines that have extremely variable surface antigens) is that perhaps in the present generation of people, that has an immune system that varies so much, due to the factors mentioned above, it may be necessary to try to prepare a vaccine from a well-preserved protein and not of an envelope proteins. It's really that the vaccines against the infections caused by RSV, prepared with the envelope proteins cause the appearance of a large amount of serum-neutralizing and highly immunogenic antibodies in vitro, but not in vivo, lead to exacerbated phenomena of immunity of human organisms (allergic reactions, asthma, etc.).

It is known that the preparation of well-conserved antigens stays to the basis concept for the improvement of the diagnosis of viral infections, but for the present, it may be good to also try this concept, for the preparation of the RSV vaccine.

With this idea, I participated in 2015 at GlaxoSmithKline's Discovery Fast Track Challenge, the answer being received on the date August 7, 2015.

Here is a paragraph from the response received (from Carolyn Buser-Doepner, Global Head, Discovery Partnerships with Academia GlaxoSmithKline):

“The Discovery Fast Track Team reviewed over two hundred and twenty applications from universities across Europe. We were very impressed by the cutting edge research surrounding the proposals, and struggled with each decision. We recognize that the best ideas often come from scientists like you and we would like to encourage you to continue advancing your ideas.....Your exciting research may be a good fit for one of these opportunities to collaborate with you in the future”.

Because my proposal from 2015 was not selected to the finalist round, in the end of my Personal Communication, I will write in few words my hypothesis: maybe is good to try the preparation of a vaccine from well conserved region of the 3'end of the 1st gene of RSV (from ORF 1C protein = NS1), which can start to the position of the aa. 77, 78, 79 (AAG), region which are the same at least to RSV, Sendai Virus, Parainfluenza Virus Type 3 (and Coxsackie Virus Type B, positions 111, 112, 113). The ending of the possible vaccine will be from the position of aa. 111, 112, 113. The form of the vaccine, it will be like Engerix-B, a vaccine recombinant. The region that I mentioned above, it is possible to done a good immunity, because it is also well conserved between species (the same region also exists in *Saccharomyces cerevisiae*).

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