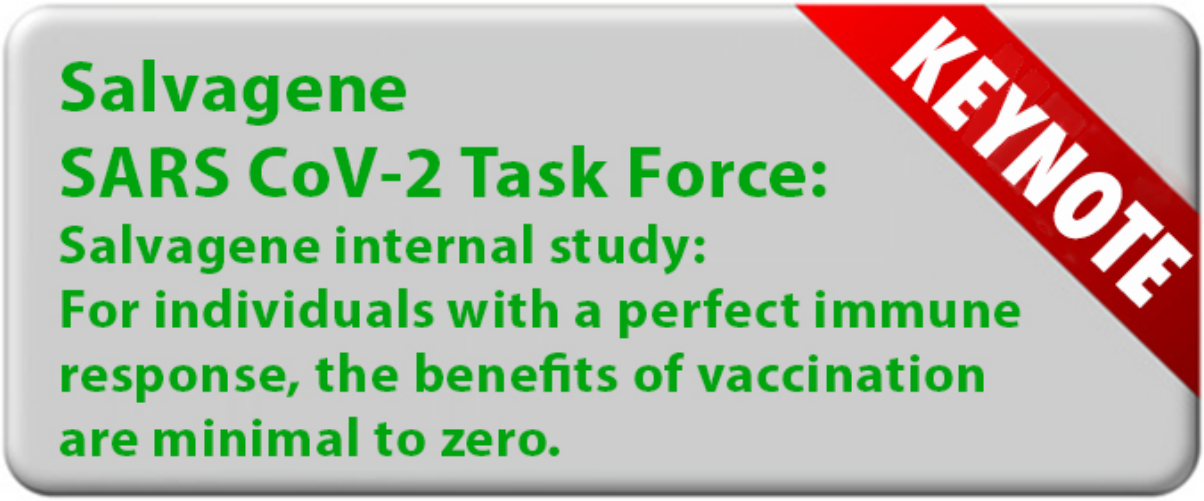
Salvagene GROUP

Business Unit: SARS-CoV-2 Task Force
Keynote: #64

February 2021



Dear Premium Customers,

This internal study involved Salvagene Premium clients who have subscribed to our Covid-19 Immunization Program since April 2020, who have a Covid-19 Risk Factor of <0.7 and a Cytokine Risk Factor of <0.6, and who have been fully vaccinated with both a first and a second dose. In this internal study, which covered an observation period of approximately eight weeks after vaccination, retests were performed within the scope of our Covid-19 Immunization Program, in which zero to minimal improvement in immune response was detected. The benefits that were noted were in the area of antibodies. In some cases, however, we actually observed deterioration of the interferon system during the study period.

In our Covid-19 Immunization Program, around 50 relevant parameters are optimized to boost the immune response, including the balanced CD4-CD8 classification, the T-helper cells, the T-memory cells, the NK cells and – most importantly – activation of the client's own interferon system. By contrast, the vaccines so far approved stimulate antibody production to the exclusion of almost everything else. However, this represents only a small part of the immune response. We have already discussed this issue at great length in previous Keynotes and podcasts.

The basic problem with all vaccines and their antibody production is that the current generation were developed to combat the earlier form of the virus and, to varying degrees, have a reduced effect against the new mutants. In our view, this presents the greatest danger for the further course of the pandemic; it lays the foundations for future escape mutations of the SARS CoV-2 virus. Barely effective vaccines give the virus the opportunity and capacity to mutate more. For these reasons, we believe that the focus of pandemic response on antibodies, especially by means of vaccination, takes us in the wrong direction. The individual's own highly adaptive immune system offers excellent possibilities, as we are demonstrating and testing in our Covid-19 Immunization Program. To a great extent, the solution lies in our own hands.
We highly recommend following the measures that form part of our Covid-19 Immunization Program. The Salvagene internal study shows that we are capable of optimizing our adaptive immune system and thereby our immune response to a high degree. We advise against relying on vaccination alone.

In this connection, it is important to monitor the immune response regularly. On the basis of what is observed, individual measures recommended by us should then be implemented for a defined period, with the specific aim of averting the main threat posed by SARS CoV-2, namely the excessive immune response known as a cytokine storm. We would therefore once again urge clients not to take any vitamins or immune boosters in an uncontrolled manner.

With the exception of AstraZeneca, none of the various vaccines approved to date and checked out by us has a significant influence on the above-mentioned key parameters. AstraZeneca has a clear advantage over all other vaccines here, as an increase in T-helper cells was observable, and it therefore proved the exception in this study. However, the production of antibodies was significantly less than that observed in other vaccines, especially the mRNA-based ones.
In our internal study, we also monitored infections reported to us by Salvagene Premium clients, in particular by those individuals we rated as having a reduced risk because they had had the benefit of our Immunization Program. During the observation period forming part of our C19 Aftercare Protocol, which includes a retest, it was found that, with an optimized immune response, the shortening of telomeres due to the infection was minimal.

Premium clients in this low-risk category who became infected were generally asymptomatic. With the implementation of our C19 Aftercare Protocol, we are reasonably confident that almost no long-term damage occurred. We see this as an indication that, if the immune response has been optimized, there is a very high chance that no symptoms will appear at all in the case of infection and that the risk of long-term harm is significantly reduced. However, we cannot say this with certainty yet, because long-term damage can naturally only be detected after several months have passed. This is logged as part of our C-19 Aftercare Protocol.

Essentially, our Covid-19 Immunization Program helps to slow down or at best even temporarily halt telomere shortening. In a similar observation period, a Japanese study found that one particular vaccine had no effect at all on telomere shortening which continued to progress. In some cases where there were side-effects, telomere shortening was accelerated.

Salvagene Telomere Management, which has now been running for the past ten years, is considered the best biomarker for

determining the long-term damage caused by SARS CoV-2 infections – detected or undetected, symptomatic or asymptomatic. Here too, the first internal studies forming part of our C-19 Immunization Program show that telomere monitoring is an excellent tool for detecting possible long-term damage and deciding on early intervention if appropriate. Continuous monitoring and optimization of the individual's own immune system has the further obvious advantage that the immune response deals with the virus according to the situation and variant encountered. By contrast, an immune system optimized by a vaccine has to rely on a system developed in the past on the basis of what was known at the time. This is a clear disadvantage in light of the direction in which the SARS CoV-2 pandemic is currently heading.
Now more than ever before, it is important that we closely monitor our own immune response, because it is influenced by changing environmental conditions, including the appearance of mutant forms. In this respect, we can now offer our Salvagene Premium customers 3 - 4 retests per 12 months instead of two times a year.

We have been reporting on the risk of escape mutations since April, and we have to assume that SARS CoV-2 will continue to mutate at its current rate for some time to come. From the original Wuhan virus, it has steadily evolved to become more infectious, and in some cases also significantly more life-threatening. This trend is certainly not infinite, but we have to expect that it will continue for the foreseeable future. In pandemic management, it is important that the measures taken – and especially the vaccines deployed – do not give the virus the opportunity for large-scale escape mutation scenarios, although at the moment it is understandable that the authorities should seek to manage the pandemic by means of short-term solutions. The aim of rapid vaccine deployment is to achieve maximum penetration. At the same time, however, this presents a perfect scenario for future escape mutations to develop. We are highly critical of the strategy whereby the second dose of the vaccine is delayed. It is currently not at all clear how long immunity achieved after the first shot can last. Resistance can of course develop during this period. At the moment, the situation varies from country to country, because this is a decision that is

not endorsed by the vaccine manufacturers themselves who can only go by the results from their Phase 3 clinical trials. Ultimately, it is a political decision.

The second scenario that might facilitate escape mutations is one in which a vaccine has only limited efficacy. As we have said before, better no vaccine at all than an ineffective vaccine, even though the political pressures may be immense. Approving vaccines that have >50% efficacy is not a scientific decision, but rather a political one made under the assumption that the virus would not mutate. Vaccines that have a lower efficacy, such as AstraZeneca, do not pose a risk to the individual receiving it. Even though AstraZeneca shows higher initial side-effects compared to other vaccines, its potential long-term side-effects are less of a concern. Although there are no direct disadvantages at the personal level, the same cannot be said about escape mutations. The efficacy studies conducted so far have been quite contradictory, especially when we look at the study design for AstraZeneca; it is quite astonishing that the volunteers recruited to test a vaccine formulated to combat a virus that has high mortality rates in people aged 80 years and older included hardly anybody in this age range. Furthermore, the efficacy data has already been reinterpreted four times since the vaccine received emergency approval in the UK.

From our perspective, the two most important countries for us to draw conclusions from at the moment are Israel and the UK, but for different reasons. Israel is an exemplar because of its high vaccination rate while observing the regimen recommended by the pharmaceutical manufacturer BioNTech. It is hoped that the vaccine will lead to a weakening of the pandemic, though how quickly and how sustainably remains to be seen. The figures published by the Israeli Ministry of Health in collaboration with BioNTech give absolute hope as far as the effectiveness of the vaccine and transmission by vaccinated persons is concerned. Similar encouraging reports have come from Scotland. The UK has one of the most advanced vaccination programs and at the same time has great expertise in the field of gene sequencing. It has a centralized health system and good standards of monitoring.

Willingness to experiment is among the highest in the world, which makes their approach so fascinating for us as scientists.
On the subject of side-effects, we see very little transparency; there have been a number of incidents, for example in northern Germany, where more than 100 hospital staff were vaccinated and the occurrence of side-effects was so high that vaccination was temporarily suspended. There has to be a much greater level of transparency overall, because very few details have been published so far in the clinical Phase 3 studies of all manufacturers due to the accelerated procedures.

We are working on the assumption that it will not so much be the development of vaccines that will determine the further course of the pandemic, but rather the mutation of the virus itself.

SALVAGENE HQ
Université Paris Sorbonne
125 Rue Saint-Jacques, 75005 Paris

SALVAGENE UK
52 Grosvenor Gardens • SW1W 0AU London UF
Tel: 0044 20 3287 0644

SALVAGENE USA
101 Avenue of the Americas, 8th floor • 10013 New York
Tel: +1 646 583 0370

info@salvagene.com • www.salvagene.com