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Report:

Starting point:
Swab with and without plasma treatment

test system:

- Reverse transcriptase PCR specific for the N gene of Sars-Cov-2
- Detection of the amplicon via lateral flow system
- EU reference material EURM-19: RNA with partial sequences from the entire Sars-Cov-2 genome, E8 copies/µl

Test for RNA adsorption on the swab material

- The reference material was diluted to 100 copies/µl
- 100 µl of this dilution were applied to treated and untreated swabs
- After an incubation of 15 min, the solution was centrifuged from the swabs
- 1 µl of the centrifuged solution was added to the PCR
- Result: All PCR reactions are positive. RNA is not irreversibly adsorbed on treated or untreated swabs. The significantly better wettability of the treated swabs is striking.

Test for liquid absorption during short immersion in sample solution (simulation of a swab)

- Treated and untreated swabs were immersed in sample solution for one second and the sample was weighed with the analytical balance
- Result: The average water absorption of treated swabs is 72.6 mg and of untreated swabs 18.3 mg. Treated swabs absorb approximately 4 times more liquid in the same time than untreated swabs.
- Simulation of a sampling with subsequent PCR with reference material at the detection limit
- The reference material was diluted to 1000 copies/µl
- Treated and untreated swabs were immersed in the above dilution for one second and then incubated in 1 ml PCR water for 5 min
- After incubation, the swabs were expressed at the tuberose border and 1 µl was added to the PCR

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- **Result:** The PCR was positive only from the solution of the treated swabs. This means that the detection limit is improved by the use of the treated swabs. Quantification by PCR is not possible.

Due to the successful implementation with meaningful results, I recommend not to commission offer item 1.4. This would probably have no relation to the effort / result. However, I will send you a cost estimate here if required.

With kind regards

Heinrich Jehle