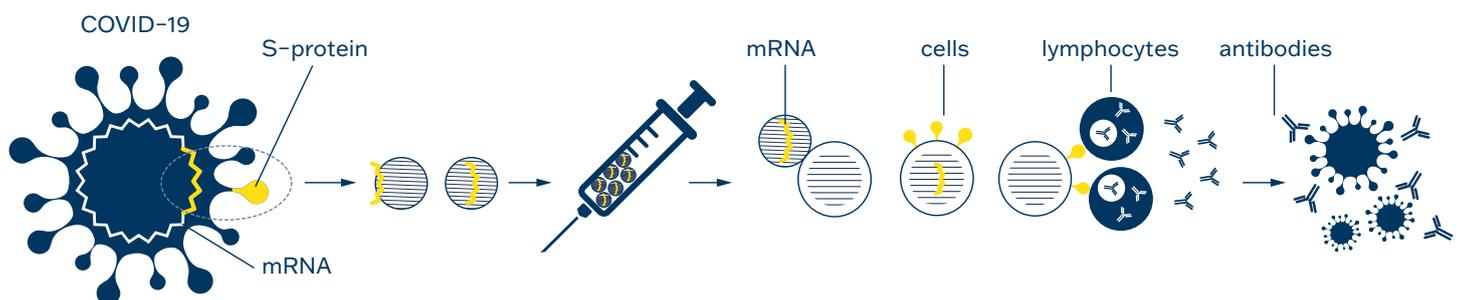


COVID-19 vaccination

Overview of post-vaccination reactivity of ELISA kits

In all EU Member States, vaccination against SARS-CoV-2 was launched in December 2020 using mRNA vaccines.

The mRNA vaccines carry a specially designed mRNA sequence that is incorporated only into differentiated muscle, skin, and dendritic cells. When this mRNA encounters our ribosomes, they use it as an instruction to produce a part of the protein envelope called the spike S protein. The protein thus formed is presented on the cell surface in association with a histocompatible complex. Subsequently, the cells are recognized as foreign, which makes it possible to induce a complex immune response. It stimulates B-lymphocytes to produce antibodies, T-lymphocytes, which stimulate the differentiation and production of specialized B-lymphocytes and at the same time stimulate the cellular response.



TestLine EIA COVID-19 RBD diagnostic kits were used to verify post-vaccination immunity in vaccinated healthcare professionals.

The used Receptor-Binding Domain (RBD) antigen, a subunit of the spike S1 protein, specifically binds to the angiotensin-converting enzyme 2 (ACE2) of the host cell.

This bound highly correlates with the formation of neutralizing antibodies.

Reactivity of vaccinated healthcare professionals after the 1st dose of Pfizer vaccine

ELISA

| No. | Date of application | Date of sample collection | PCR test | Ab test before vaccination | RBD IgA | RBD IgG | RBD IgM | NP IgA | NP IgG | NP IgM |
|-----|---------------------|---------------------------|-------------|----------------------------|---------|---------|---------|--------|--------|--------|
| | | | | | IP | IP | IP | IP | IP | IP |
| A1 | 29.12.20 | 15.01.21 | no | no | 2.77 | 8.56 | 4.93 | 0.21 | 1.21 | 0.29 |
| A2 | 07.01.21 | 16.01.21 | no | no | 4.75 | 0.17 | 0.54 | 0.07 | 0.11 | 0.31 |
| A3 | 13.01.21 | 15.01.21 | no | no | 0.33 | 0.16 | 1.09 | 0.10 | 0.52 | 0.49 |
| A4 | 29.12.20 | 16.01.21 | NEG 10.2020 | no | 0.56 | 4.16 | 0.33 | 0.07 | 0.06 | 0.17 |
| A5 | 07.01.21 | 16.01.21 | no | no | 0.32 | 0.19 | 0.38 | 0.36 | 0.43 | 0.26 |
| A6 | 29.12.20 | 16.01.21 | no | no | 2.66 | 8.41 | 4.17 | 0.49 | 0.48 | 0.71 |
| A7 | 30.12.20 | 18.01.21 | POS 09.2020 | POS | 5.07 | 8.56 | 0.59 | 0.07 | 0.81 | 0.32 |
| A8 | 29.12.20 | 18.01.21 | NEG 12.2020 | NEG | 4.55 | 5.18 | 0.79 | 0.18 | 0.08 | 0.09 |
| A9 | 29.12.20 | 18.01.21 | NEG 12.2020 | no | 0.59 | 5.74 | 0.47 | 0.44 | 0.68 | 0.46 |
| A10 | 30.12.20 | 18.01.21 | NEG 10.2020 | no | 3.09 | 6.66 | 4.62 | 0.14 | 0.21 | 0.38 |
| A11 | 30.12.20 | 18.01.21 | no | no | 4.53 | 6.47 | 1.89 | 0.99 | 0.35 | 0.49 |
| A12 | 29.12.20 | 18.01.21 | no | no | 4.02 | 6.67 | 7.82 | 0.29 | 0.05 | 0.24 |
| A16 | 30.12.20 | 19.01.21 | NEG 12.2020 | NEG | 0.40 | 0.45 | 0.29 | 1.36 | 0.43 | 0.46 |
| A18 | 30.12.20 | 19.01.21 | NEG 12.2020 | NEG | 0.76 | 6.33 | 1.01 | 0.17 | 0.34 | 0.25 |
| A19 | 31.12.20 | 19.01.21 | POS 09.2020 | POS | 6.73 | 6.82 | 0.34 | 0.40 | 5.28 | 0.12 |
| A23 | 14.01.21 | 22.01.21 | POS 12.2020 | POS | 6.64 | 7.29 | 1.33 | 0.31 | 1.51 | 0.46 |
| A26 | 12.01.21 | 22.01.21 | no | no | 6.41 | 2.98 | 1.27 | 0.62 | 0.27 | 0.80 |
| A29 | 12.01.21 | 22.01.21 | no | no | 6.62 | 7.00 | 0.65 | 1.40 | 0.58 | 0.38 |
| A30 | 13.01.21 | 22.01.21 | POS 12.2020 | POS | 6.76 | 7.16 | 1.11 | 1.23 | 2.38 | 0.22 |
| A31 | 12.01.21 | 22.01.21 | NEG 12.2020 | no | 1.93 | 1.64 | 0.52 | 0.25 | 0.41 | 0.56 |
| A32 | 12.01.21 | 22.01.21 | 15.12.20 | no | 1.10 | 1.17 | 0.86 | 0.11 | 0.15 | 0.74 |
| A33 | 12.01.21 | 21.01.21 | POS 10.2020 | POS | 6.75 | 7.03 | 0.23 | 2.01 | 3.06 | 0.20 |
| A34 | 12.01.21 | 26.01.21 | no | no | 1.08 | 1.81 | 0.81 | 0.36 | 0.27 | 0.41 |
| A42 | 13.01.21 | 27.01.21 | POS 12.2020 | no | 4.87 | 6.85 | 1.09 | 0.26 | 0.17 | 0.43 |
| A44 | 07.01.21 | 28.01.21 | no | no | 0.23 | 0.99 | 0.49 | 0.11 | 0.13 | 0.25 |
| A45 | 08.01.21 | 27.01.21 | no | no | 6.24 | 5.49 | 0.68 | 0.62 | 1.74 | 0.40 |

Reactivity of vaccinated healthcare professionals after the 2nd dose of Pfizer vaccine

ELISA

| No. | Date of application 1 st /2 nd dose | Date of sample collection | PCR test | Ab test before vaccination | RBD IgA | RBD IgG | RBD IgM | NP IgA | NP IgG | NP IgM |
|-----|---|---------------------------|-------------|----------------------------|---------|---------|---------|--------|--------|--------|
| | | | | | IP | IP | IP | IP | IP | IP |
| A22 | 29.12.2020/19.01.2021 | 22.01.21 | no | no | 3.50 | 7.16 | 1.79 | 0.24 | 0.23 | 0.22 |
| A24 | 29.12.2020/19.01.2021 | 22.01.21 | POS 09.2020 | POS | 6.79 | 7.41 | 1.05 | 1.02 | 0.62 | 0.25 |
| A25 | 28.12.2020/20.01.2021 | 22.01.21 | NEG 12.2020 | no | 5.25 | 6.92 | 1.87 | 0.29 | 0.41 | 0.33 |
| A27 | 29.12.2020/19.01.2021 | 22.01.21 | POS 09.2020 | POS | 6.87 | 7.30 | 0.64 | 0.97 | 0.81 | 0.45 |
| A28 | 29.12.2020/19.01.2021 | 22.01.21 | NEG 12.2020 | no | 2.61 | 7.08 | 2.85 | 0.14 | 0.12 | 0.43 |
| A35 | 29.12.2020/19.1.2021 | 26.01.21 | NEG 12.2020 | no | 6.40 | 7.15 | 2.21 | 0.63 | 0.29 | 0.55 |
| A36 | 30.12.2020/20.01.2021 | 27.01.21 | NEG 12.2020 | no | 6.81 | 6.85 | 2.21 | 0.73 | 0.17 | 0.33 |
| A37 | 29.12.2020/19.01.2021 | 27.01.21 | NEG 01.2021 | no | 6.08 | 7.27 | 2.39 | 0.14 | 0.60 | 0.45 |
| A38 | 30.12.2020/20.01.2021 | 27.01.21 | NEG 12.2020 | no | 6.66 | 7.16 | 4.82 | 0.75 | 0.76 | 0.25 |
| A39 | 29.12.2020/19.01.2021 | 27.01.21 | NEG 12.2020 | no | 6.64 | 7.29 | 5.73 | 0.42 | 0.49 | 0.36 |
| A40 | 29.12.2020/21.01.2021 | 27.01.21 | POS 11.2020 | NEG | 6.79 | 7.21 | 6.27 | 0.34 | 0.46 | 0.29 |
| A41 | 30.12.2020/20.01.2021 | 27.01.21 | NEG 12.2020 | no | 6.75 | 7.03 | 5.13 | 0.21 | 0.28 | 0.28 |
| A43 | 30.12.2020/20.01.2021 | 27.01.21 | NEG 12.2020 | POS | 6.55 | 7.30 | 1.07 | 0.33 | 0.65 | 0.96 |
| A47 | 29.12.2020/19.01.2021 | 27.01.21 | POS 10.2020 | POS | 6.74 | 6.90 | 0.35 | 2.56 | 1.63 | 0.32 |

Interpretation of ELISA results – Index of Positivity (IP)

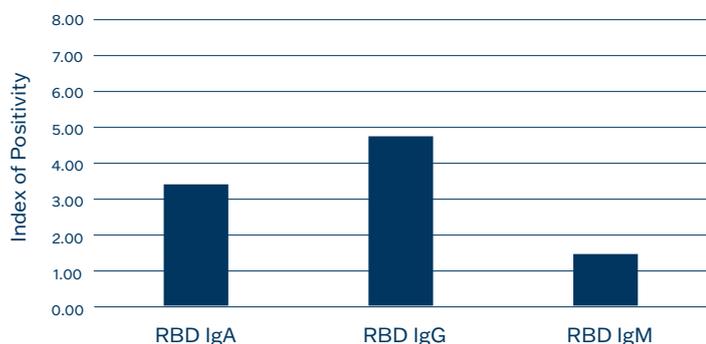
■ lower than 0.9 = negative ■ 0.9 to 1.1 = borderline ■ higher than 1.1 = positive

The Ab test before the vaccine was performed in another laboratory.

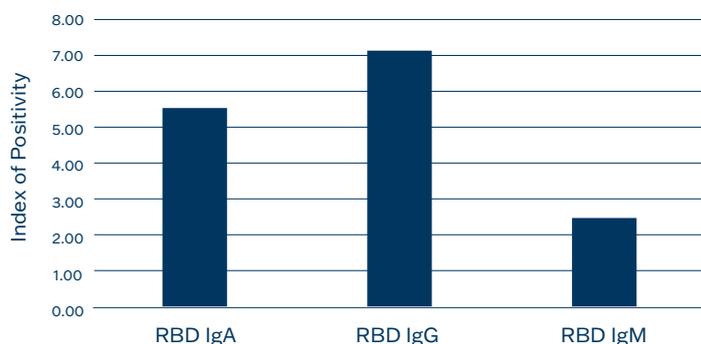
Note: The presence of anti-NP antibodies indicates post-infectious immunity.

The nucleocapsid protein (NP) encapsulates the viral genomic RNA and forms a major component of the viral structure.

Mean values after the 1st dose of vaccination against SARS-CoV-2



Mean values after the 2nd dose of vaccination against SARS-CoV-2



Ordering information:

| Cat. No. | Product | No. of wells |
|-----------|---------------------------|--------------|
| CoRA96 | EIA COVID-19 RBD IgA | 96 |
| CoRG96 | EIA COVID-19 RBD IgG | 96 |
| CoRM96 | EIA COVID-19 RBD IgM | 96 |
| SK-CoRA96 | SmartEIA COVID-19 RBD IgA | 96 |
| SK-CoRG96 | SmartEIA COVID-19 RBD IgG | 96 |
| SK-CoRM96 | SmartEIA COVID-19 RBD IgM | 96 |

SmartEIA kits are designed for automated processing using the Agility® analyser.

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