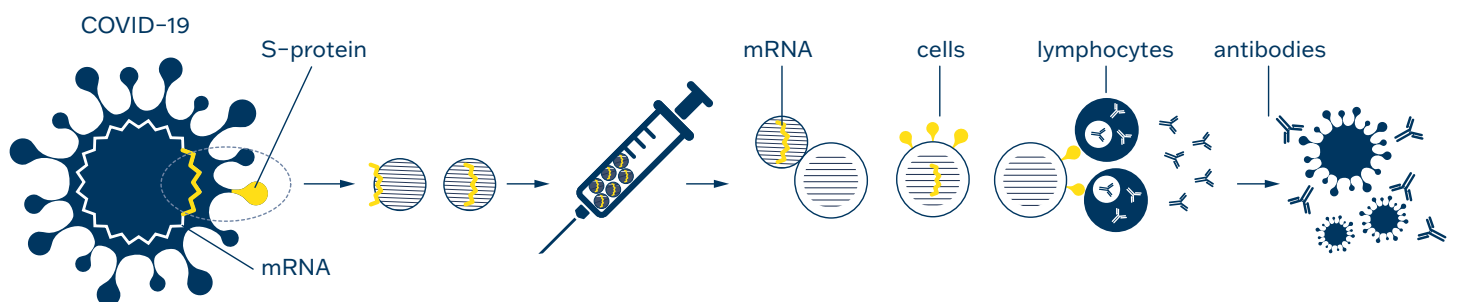


COVID-19 vaccination

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)

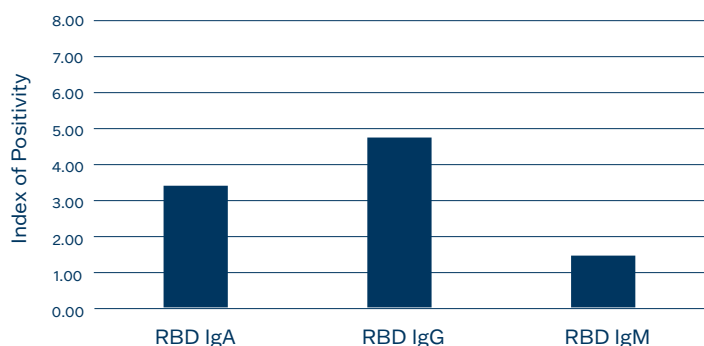
■ lower than 0.9 = negative ■ 0.9 to 1.1 = borderline ■ higher than 1.1 = positive

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

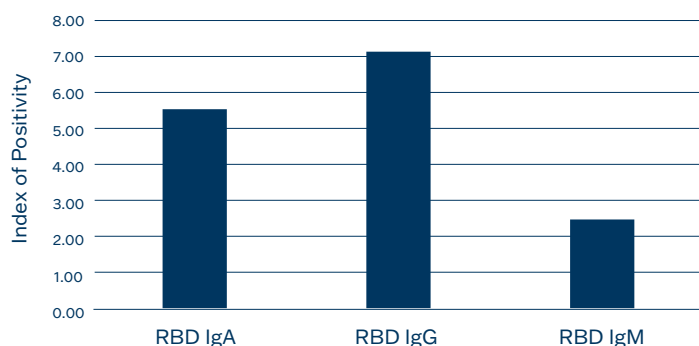
Note: The presence of anti-NP antibodies indicates post-infectious immunity.

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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