

Supplementary Material

Supplementary Table 1. Average level of NI and HI antibodies throughout a year after vaccination with split and subunit adjuvanted influenza vaccines (GMT, 95%CI)

Antigen	H1		H3		N1		N2	
Vaccine type	split	subunit adjuvanted	split	subunit adjuvanted	split	subunit adjuvanted	split	subunit adjuvanted
day 0	42 (24 – 73)	27 (18 – 40)	19 (13 – 30)	19 (13 – 29)	14 (9-21)	11 (8-15)	10 (6-16)	14 (10-20)
day 7	152 (103-224)	94 (65-136)	84 (50-142)	49 (33-73)	36 (24-55)	20 (14-28)	25 (15-40)	26 (17-39)
day 21	187 (129-269)	170 (109-265)	130 (79-216)	98 (66-146)	42 (26-67)	22 (15-33)	28 (16-46)	28 (18-42)
month 3	115 (79-167)	117 (79-172)	89 (59-134)	61 (41-91)	26 (16-42)	21 (14-30)	53 (36-79)	50 (34-73)
month 6	70 (49-101)	79 (54-116)	65 (43-98)	54 (37-80)	19 (12-29)	19 (13-26)	41 (27-62)	38 (25-57)
month 12	47 (32-68)	54 (37-77)	46 (31-68)	39 (26-58)	13 (8-22)	11 (8-15)	28 (18-45)	30 (19-45)

Supplementary Table 2. Statistical analyses results of within group antibody titer comparison in dependence of time point

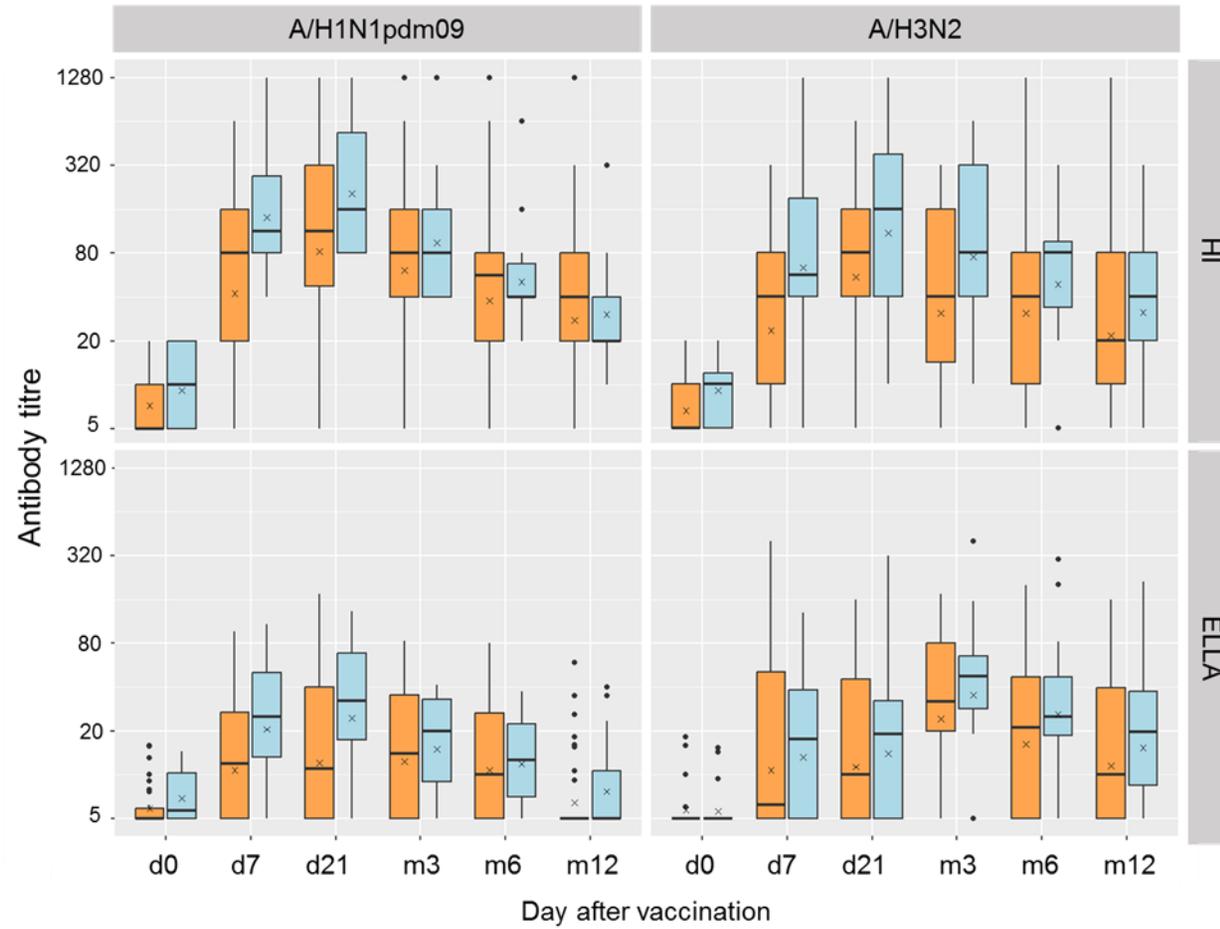
	H1			H3			N1			N2		
	Mean Diff	Summary	Adjusted P Value	Mean Diff	Summary	Adjusted P Value	Mean Diff	Summary	Adjusted P Value	Mean Diff	Summary	Adjusted P Value
split												
d0 vs. d7	-0.54	**	0.003	-0.61	***	0.0008	-0.42	****	<0,0001	-0.39	***	0.0007
d0 vs. d21	-0.64	**	0.0013	-0.80	****	<0,0001	-0.48	****	<0,0001	-0.44	***	0.0004
d0 vs. m3	-0.43	*	0.0178	-0.63	****	<0,0001	-0.27	ns	0.0763	-0.72	****	<0,0001
d0 vs. m6	-0.22	ns	0.5619	-0.50	***	0.0009	-0.13	ns	0.9625	-0.61	****	<0,0001
d0 vs. m12	-0.03	ns	>0,9999	-0.36	*	0.0304	0.02	ns	>0,9999	-0.45	****	<0,0001
d7 vs. d21	-0.09	ns	0.1226	-0.19	*	0.0259	-0.07	ns	0.9855	-0.05	ns	>0,9999
d7 vs. m3	0.12	ns	0.1356	-0.01	ns	>0,9999	0.14	ns	0.8374	-0.33	**	0.0061
d7 vs. m6	0.33	***	0.0003	0.12	ns	0.8858	0.29	*	0.0214	-0.22	ns	0.2761
d7 vs. m12	0.51	****	<0,0001	0.25	ns	0.2476	0.44	**	0.0075	-0.05	ns	>0,9999
d21 vs. m3	0.21	***	0.0004	0.17	**	0.0047	0.21	ns	0.1403	-0.28	ns	0.0549
d21 vs. m6	0.42	****	<0,0001	0.30	**	0.0014	0.36	**	0.006	-0.17	ns	0.4668
d21 vs. m12	0.60	****	<0,0001	0.44	***	0.0001	0.51	**	0.0025	0.00	ns	>0,9999
m3 vs. m6	0.21	****	<0,0001	0.13	ns	0.073	0.15	ns	0.2903	0.12	ns	0.4554
m3 vs. m12	0.40	****	<0,0001	0.27	**	0.0011	0.30	ns	0.2182	0.28	**	0.0026
m6 vs. m12	0.19	****	<0,0001	0.14	ns	0.0698	0.15	ns	0.9767	0.16	**	0.0012
Subunit adjuvanted												
d0 vs. d7	-0.55	****	<0,0001	-0.42	***	0.0004	-0.26	**	0.0014	-0.27	**	0.0086
d0 vs. d21	-0.80	****	<0,0001	-0.70	****	<0,0001	-0.31	***	0.0009	-0.30	***	0.001
d0 vs. m3	-0.64	****	<0,0001	-0.49	****	<0,0001	-0.26	**	0.0033	-0.55	****	<0,0001
d0 vs. m6	-0.47	***	0.0001	-0.44	***	0.0006	-0.24	**	0.0027	-0.43	****	<0,0001
d0 vs. m12	-0.29	*	0.0394	-0.31	ns	0.0658	0.03	ns	>0,9999	-0.33	***	0.0002
d7 vs. d21	-0.25	**	0.0098	-0.28	**	0.0017	-0.06	ns	0.9876	-0.03	ns	>0,9999
d7 vs. m3	-0.08	ns	0.9857	-0.08	ns	0.9829	-0.01	ns	>0,9999	-0.29	**	0.0027
d7 vs. m6	0.08	ns	0.9898	-0.03	ns	>0,9999	0.02	ns	>0,9999	-0.17	ns	0.4139
d7 vs. m12	0.26	**	0.0092	0.11	ns	0.9733	0.28	*	0.0141	-0.06	ns	0.9998
d21 vs. m3	0.17	**	0.0015	0.21	****	<0,0001	0.05	ns	0.9994	-0.25	**	0.001
d21 vs. m6	0.33	****	<0,0001	0.25	****	<0,0001	0.08	ns	0.9885	-0.13	ns	0.6451
d21 vs. m12	0.51	****	<0,0001	0.39	****	<0,0001	0.34	**	0.002	-0.03	ns	>0,9999
m3 vs. m6	0.16	***	0.0002	0.05	ns	0.9938	0.03	ns	>0,9999	0.12	ns	0.1782
m3 vs. m12	0.34	****	<0,0001	0.19	*	0.0454	0.29	***	0.0005	0.22	**	0.0084
m6 vs. m12	0.18	****	<0,0001	0.14	***	0.0007	0.26	***	0.0001	0.10	ns	0.3803

Analyses was performed by two-way repeated measures ANOVA or mixed-effect model in case of missing values as implemented in GraphPad Prizm v. 8.4.3. Presented mean difference and p-value are results of within group comparison of logarithmic titers at indicated time points.

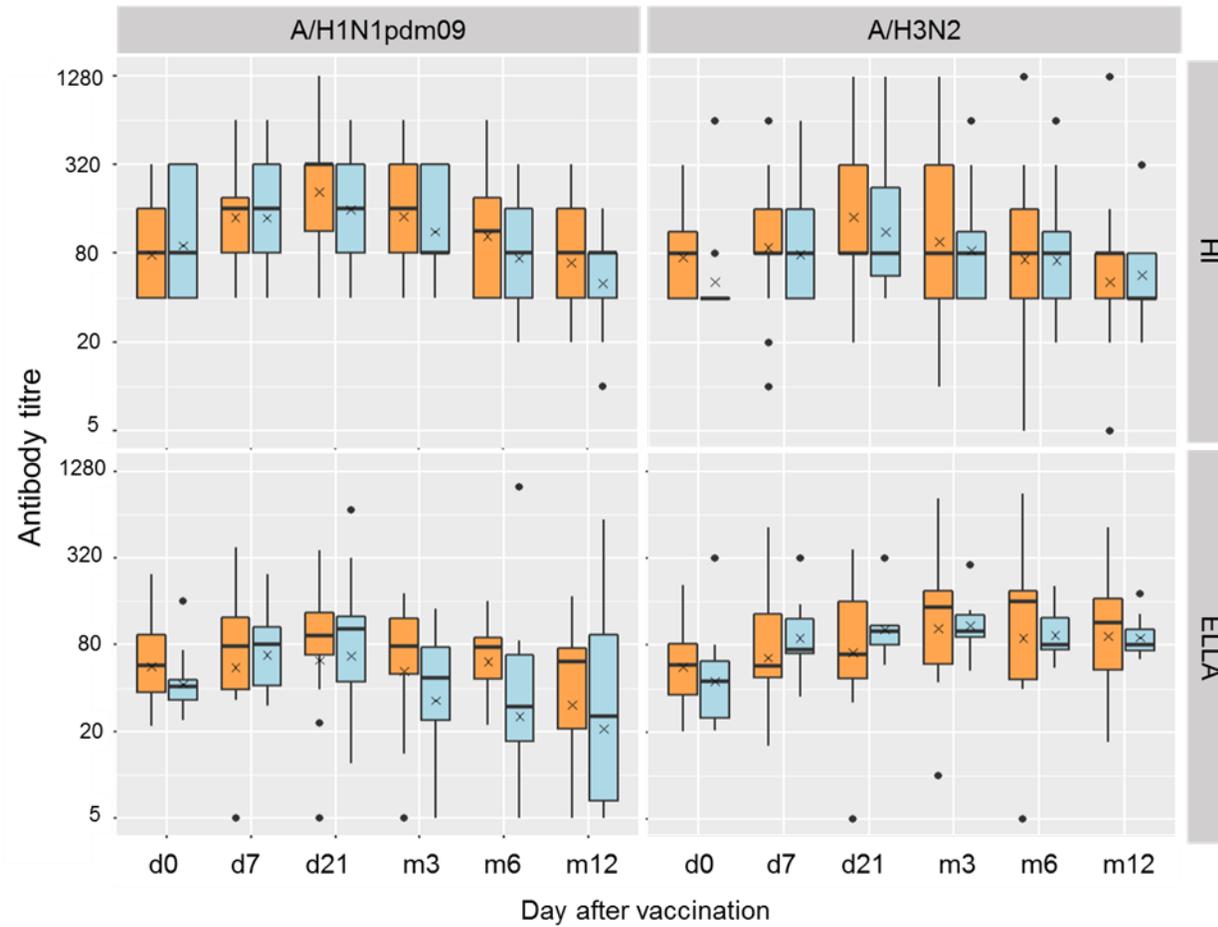
Supplementary table 3. Regression analyses results

The impact of preexisting factors on the response (seroconversion) to particular antigens in immunized participants on day 21 after vaccination was analysed by generalized linear model method (binomial family). The parameter analyzed by the model was the chance of response to vaccination, where the seroconversion on day 21 was considered as positive outcome (1) and the lack of seroconversion as negative outcome (0), thus the binomial family was chosen.

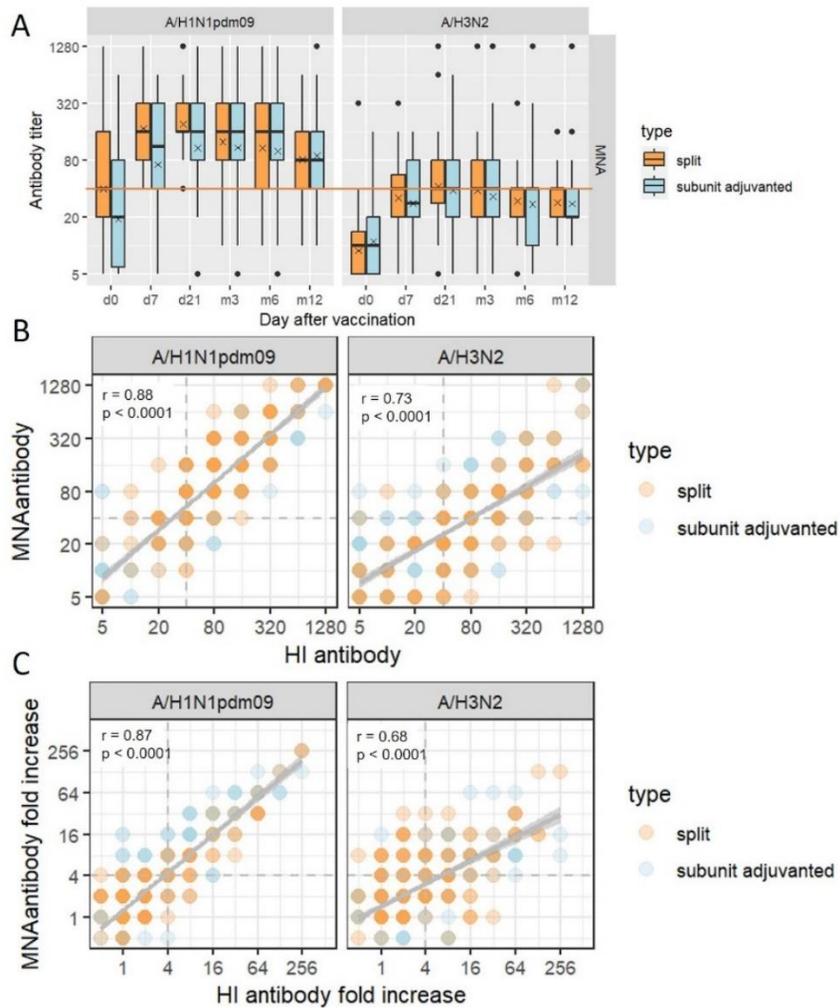
Response →	HI seroconversion		NI seroconversion	
Factor ↓	H1	H3	N1	N2
Titer at day 0	p=0.0009***	p=0.0268*	p=0.0914	p=0.0522
Vaccine type	p=0.7699	p=0.5658	p=0.0031**	p=0.1097
Age	p=0.5432	p=0.5389	p=0.8303	p=0.7365
Sex	p=0.0511	p=0.8002	p=0.7034	p=0.1209



Supplementary Figure 1. Antibody dynamics throughout 1 year after vaccination in the subgroups of participants with initially low specific antibody titers

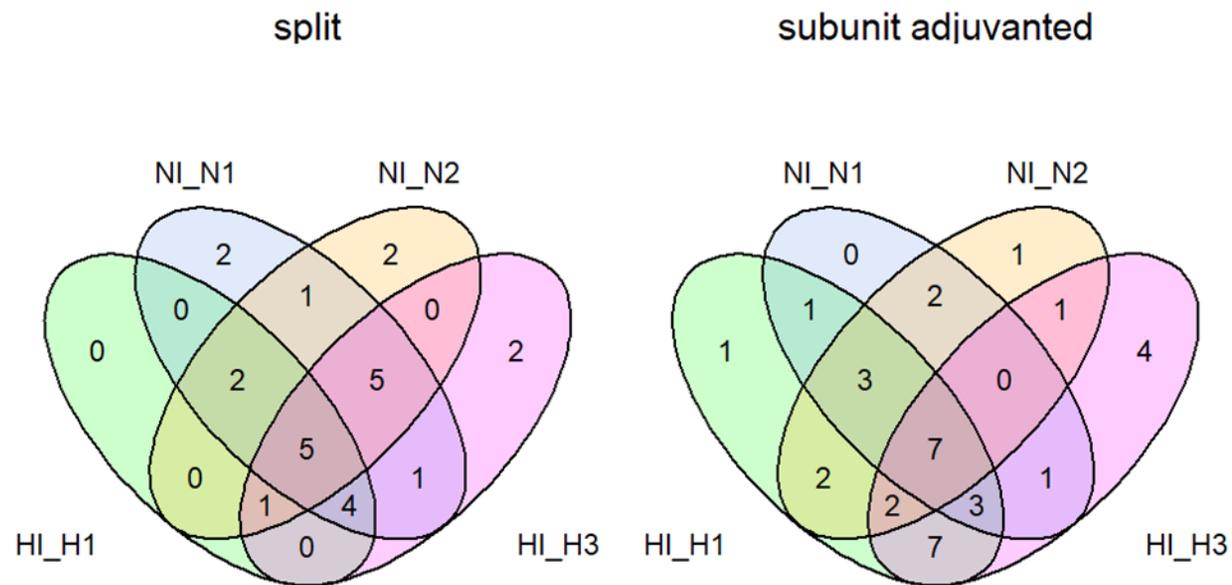


Supplementary Figure 2. Antibody dynamics throughout 1 year after vaccination in the subgroups of participants with initially high specific antibody titers



Supplementary Figure 3. Neutralizing antibody dynamics and correlation with hemagglutination inhibiting antibody (A) Neutralizing antibody throughout 1 year after vaccination. Data is represented by box-plot diagram with a solid black line at median titers and a cross at geometric mean titers (GMT). Red line indicates conventional antibody level threshold (1:40). (B, C) Correlation of HI and

MNA data in absolute titers and fold increase values, correspondingly. Each dot represents one participant. Results of Pearson correlation test applied to logarithmic values are presented on graphs. Dotted lines mark the conventional seroconversion threshold (4-fold increase).



Supplementary Figure 4. Distribution of the numbers for participants who seroconverted for all four components (H1-HA, N1-NA, H3-HA and N2-NA), and seroconverted for 3/4 components.