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Supplemental information

Complement-dependent mpox-virus-neutralizing antibodies in infected and vaccinated individuals

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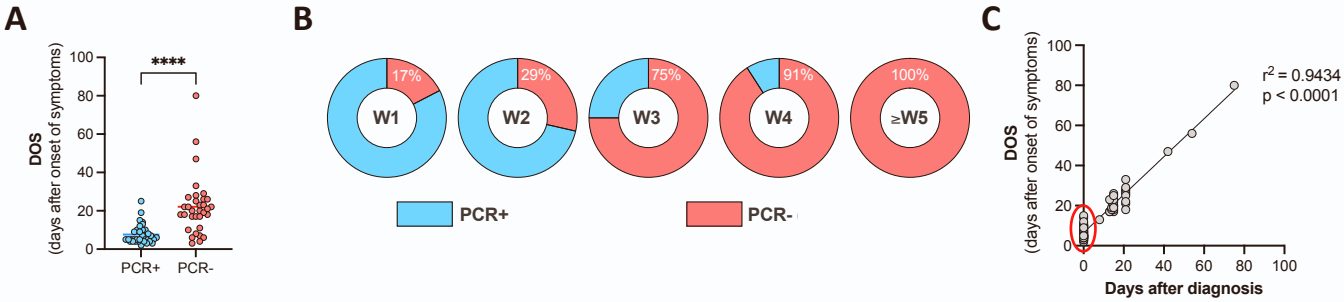
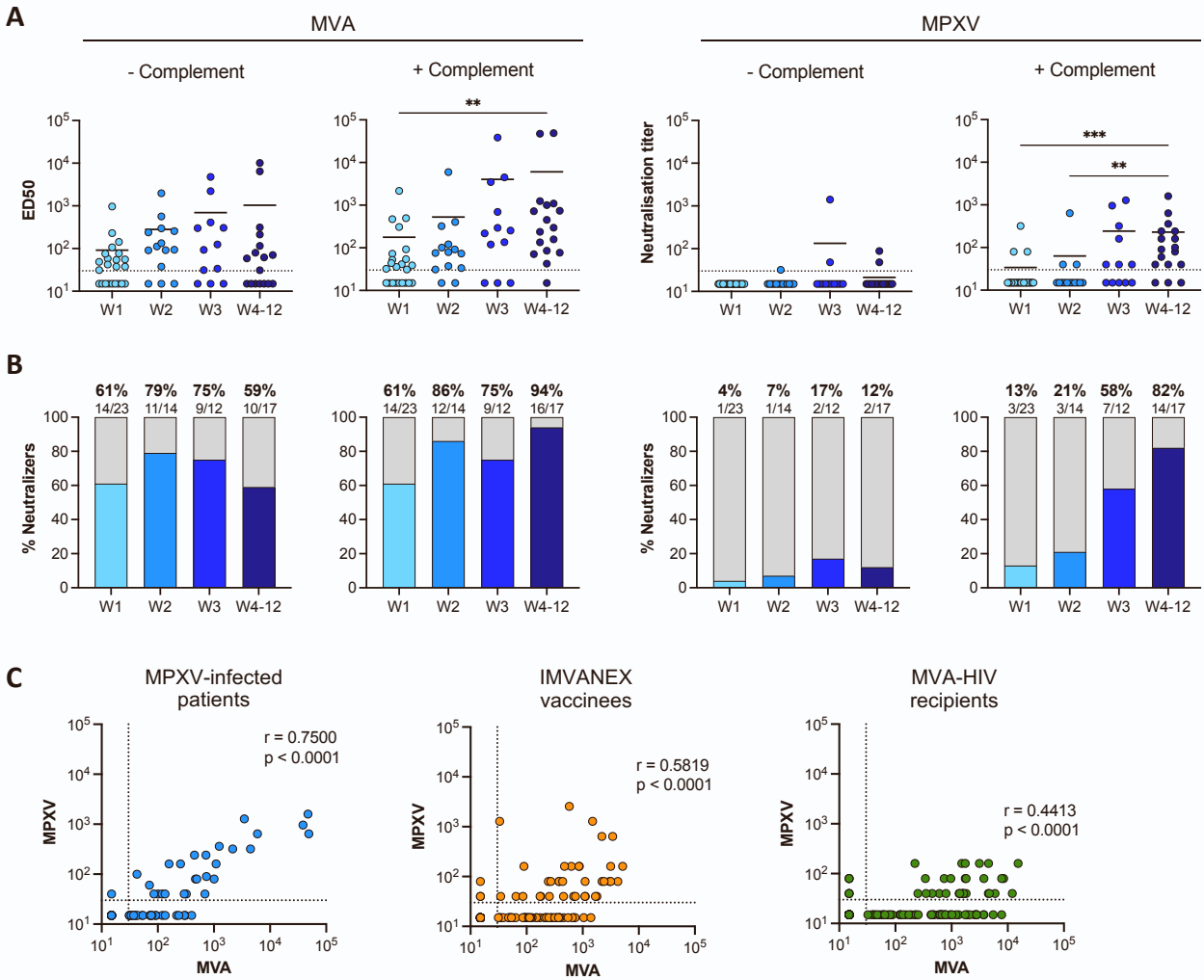


Extended Data Fig. 1. Association between time after onset of symptoms, day of mpox diagnosis and detection of the MPXV genome, related to Figure 4

(A) Detection of MPXV genome by PCR in the plasma of MPXV-infected patients at the indicated days after onset of symptoms (DOS) (n=66).

(B) Detection of MPXV in the plasma of infected patients at the indicated weeks after onset of symptoms. The percentage of positive individuals is indicated.

(C) Correlation between time after onset of symptoms and time after mpox diagnosis. The red oval shows the lag between symptoms and diagnosis. The correlation was analyzed by a simple linear regression that significantly links the two parameters.



Extended Data Fig. 2. Evolution and correlation of anti-MVA and anti-MPXV Nabs, related to Figure 4, Figure 5 and Figure 6

(A) Seroneutralization of MVA-GFP (left) and MPXV (right) by sera from MPXV-infected patients in the absence and presence of 10% guinea pig serum as a source of complement. Sera from individuals born before and after 1980 were analyzed. The weeks (W) of sample collection are shown. See also Fig. 4. The dotted lines represent the limit of detection (LOD). Each dot represents an individual and data are mean of two to six independent experiments. Bars indicate mean values. Statistical analysis: Kruskal-Wallis tests with Dunn's multiple comparisons correction (* $p < 0.03$; ** $p < 0.002$; *** $p < 0.0002$; **** $p < 0.0001$).

(B) The proportion of neutralizers was estimated as the percentage of individuals exhibiting a neutralizing activity > LOD.

(C) Correlative analysis of the neutralizing activity (with complement) of sera from MPXV-infected patients, IMVANEX vaccinees and MVA-HIV recipients against MVA and MPXV. See also Fig. 4, Fig. 5, and Fig. 6. Each dot represents an individual and data are mean of two to six independent experiments. Statistical analysis was assessed using non-parametric Spearman correlations.

Nb of patients		88
Sex		
	Female	53 (60%)
	Male	32 (37%)
	Unknown	3 (3%)
Age		51 [22-69]
Birth year		
	> 1980	34 (39%)
	< 1980	54 (61%)

Table S1. Characteristics of uninfected donors, related to Figure 3

	Pitié-Salpêtrière hospital (n=39)		Henri Mondor hospital (n=9)	
	> 1980	< 1980	> 1980	< 1980
Nb of patients	32 (82%)	7 (18%)	7 (78%)	2 (22%)
Sex				
Female	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Male	32 (100%)	7 (100%)	7 (100%)	2 (100%)
Age	31 [21-41]	51 [43-62]	32 [24-40]	57 [49-64]
Days after onset of symptoms	10 [3-80]	6 [2-56]	27 [21-33]	22 [18-26]
Nb of samples	46	11	7	2
Week 1 (W1)	17 (37%)	6 (55%)	0 (0%)	0 (0%)
Week 2 (W2)	13 (28%)	1 (9%)	0 (0%)	0 (0%)
Week 3 (W3)	9 (20%)	2 (18%)	0 (0%)	1 (50%)
Week 4 to 12 (W4-12)	7 (15%)	2 (18%)	7 (100%)	1 (50%)

Table S2. Characteristics of MPXV-infected patients, related to Figure 4

	Orléans hospital (n=42)		Henri Mondor hospital (n=43)	
	> 1980	< 1980	> 1980	< 1980
Nb of patients	17 (40%)	25 (60%)	15 (35%)	28 (65%)
Sex				
Female	0 (0%)	0 (0%)	0% (0%)	0% (0%)
Male	17 (100%)	25 (100%)	15 (100%)	28 (100%)
Age	38 [21-41]	55 [43-71]	35 [22-41]	54 [44-71]
Status				
HIV positivity	5 (29%)	15 (60%)	4 (27%)	10 (36%)
HIV PrEP	10 (59%)	10 (40%)	7 (47%)	9 (32%)
IMVANEX vaccine				
No dose	16 (94%)	25 (100%)	0 (0%)	0 (0%)
1 dose	17 (100%)	24 (96%)	12 (80%)	28 (100%)
2 doses	13 (76%)	3 (12%)	8 (53%)	1 (3%)
Delay between doses	30 [28-42]	34 [28-71]	28 [28-28]	28 [28-28]
Time of serum collection				
After the 1st dose	30 [28-42]	34 [28-71]	28 [28-28]	15 [15-28]
After the 2nd dose	35 [10-56]	23 [22-40]	15 [15-15]	15 [15-15]

Table S3. Characteristics of IMVANEX vaccinees, related to Figure 5

	VRI (n=66)	
	> 1980	< 1980
Nb of participants	50 (76%)	16 (24%)
Sex	Unknown	
Age	Unknown	
MVA-HIV vaccine		
No dose	50 (100%)	16 (100%)
1 dose	30 (60%)	12 (75%)
2 doses	44 (88%)	17 (100%)
Delay between doses	8 weeks	8 weeks
Time of serum collection		
After the 1st dose	2 weeks	2 weeks
After the 2nd dose	2 weeks	2 weeks

Table S4. Characteristics of MVA-HIV recipients, related to Figure 6