

Table S1. Summary of antibodies and antigens information used in this study.

Bare silicon sensor preparation and brief function verification of cSP			
Product name	Abbreviation	Classification	Brand and information
Monkeypox Virus (MPXV) A29 Antibody, M0027	M29-27	Mouse IgG	40891-M0027, Sinobiological, Beijing, China
Monkeypox Virus (MPXV) Protein A29 (His Tag)	A29L	Recombinant protein	40891-V08E, Sinobiological, Beijing, China
cSP's binding ability to antibodies			
Product name	Abbreviation	Classification	Brand and information
Bebtelovimab	BEB	Human IgG	DVV00319, Antibodysystem, Schiltigheim, France
Anti-MPXV A29L Antibody	HA29	Human IgG	SAA0286, Antibodysystem, Schiltigheim, France
Goat anti-Rabbit IgG	GR	Goat IgG	A27034, Thermo Fisher, Waltham, MA, USA
Goat anti-Mouse IgG	GM	Goat IgG	A11001, Thermo Fisher, Waltham, MA, USA
Donkey anti-Rabbit IgG	DR	Donkey IgG	A31573, Thermo Fisher, Waltham, MA, USA
Donkey anti-Mouse IgG	DM	Donkey IgG	A31571, Thermo Fisher, Waltham, MA, USA
Rabbit polyclonal to ATP- binding cassette sub-family A member 3	RP63	Rabbit IgG	ab99856, Abcam, Cambridge, UK
Recombinant Anti-MUC1 antibody	RMUC	Rabbit IgG	245693, Abcam, Cambridge, UK
Monkeypox Virus (MPXV) A29 Antibody, M0027	M29-27	Mouse IgG	40891-M0027, Sinobiological, Beijing, China
Monkeypox Virus (MPXV) A29 Antibody, MM13	M29-13	Mouse IgG	40891-MM13, Sinobiological, Beijing, China
cSP-based biosensing for MPXV detection			
Product name	Abbreviation	Classification	Brand and information
MPXV-ab pair 1			
Monkeypox Virus (MPXV) A29 Antibody, M0027	M29-27	Mouse IgG	40891-M0027, Sinobiological, Beijing, China
Monkeypox Virus (MPXV) A29 Antibody, MM26	M29-26	Mouse IgG	40891-MM26, Sinobiological, Beijing, China
Monkeypox Virus (MPXV) Protein A29 (His Tag)	A29L-V08E	Recombinant protein	40891-V08E, Sinobiological, China
MPXV-ab pair 2			
Monkeypox Virus (MPXV) A29 Antibody, 396t5	M29-396t5	Humanized mouse IgG	Vap396t5, Vapol, Wuhan, China
Monkeypox Virus (MPXV)	M29-395a6	Humanized	Vap395a6, Vapol, Wuhan,

A29 Antibody, 395a6		mouse IgG	China
Monkeypox Virus (MPXV) Protein A29 (His Tag)	A29L-G004	Recombinant protein	VapG004, Vap01, Wuhan China
Cross-activity assay (specificity)			
Product name	Abbreviation	Classification	Brand and information
Monkeypox Virus (MPXV) A29 Antibody, M0027	M29-27	Mouse IgG	40891-M0027, Sinobiological, Beijing, China
Monkeypox Virus (MPXV) A29 Antibody, MM26	M29-26	Mouse IgG	40891-MM26, Sinobiological, Beijing, China
Monkeypox Virus (MPXV) Protein A29 (His Tag)	A29L-V08E	Recombinant protein	40891-V08E, Sinobiological, Beijing, China
Vaccinia virus (VACV) (strain Copenhagen) A27L Protein (His Tag)	VACV	Recombinant protein	40897-V07E, Sinobiological, Beijing, China
SARS-CoV-2 XBB.1.5 Spike RBD Protein (His Tag)	XBB.1.5	Recombinant protein	40592-V08H146, Sinobiological, Beijing, China
Influenza A H3N2 (A/Hong Kong/2671/2019) Nucleoprotein (His Tag)	H3N2	Recombinant protein	40753-V08B, Sinobiological, Beijing, China

cSP: silica-binding protein featuring core-functional domains; IgG: immunoglobulin G; RBD: receptor-binding domain.