Materials Design Analysis Reporting (MDAR) Checklist for Authors

The MDAR framework establishes a minimum set of requirements in transparent reporting applicable to studies in the life sciences (see Statement of Task: doi:10.31222/osf.io/9sm4x.). The MDAR checklist is a tool for authors, editors and others seeking to adopt the MDAR framework for transparent reporting in manuscripts and other outputs. Please refer to the MDAR Elaboration Document for additional context for the MDAR framework.

Materials

Antibodies	Yes (indicate where provided: page no/section/legend)	n/a
For commercial reagents, provide supplier name, catalogue number and RRID, if available.	Supplementary material file, Table S7 and S8, Page 32 and 33, respectively	

Cell materials	Yes (indicate where provided: page no/section/legend)	n/a
Cell lines: Provide species information, strain. Provide accession number in repository **OR** supplier name, catalog number, clone number, **OR** RRID		X
Primary cultures: Provide species, strain, sex of origin, genetic modification status.		X

Experimental animals	Yes (indicate where provided: page no/section/legend)	n/a
Laboratory animals: Provide species, strain, sex, age, genetic modification status. Provide accession number in repository **OR** supplier name, catalog number, clone number, **OR** RRID		X
Animal observed in or captured from the field: Provide species, sex and age where possible		X
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID		X

Plants and microbes	Yes (indicate where provided: page no/section/legend)	n/a
Plants: provide species and strain, unique accession number if available, and source (including location for collected wild specimens)		X
Microbes: provide species and strain, unique accession number if available, and source		X

Human research participants	Yes (indicate where provided: page no/section/legend)	n/a
Identify authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Supplementary material file, Page 2: "*All protocols described herein were approved by the institutional review boards (IRB) of the La Jolla Institute (IRB#:VD-112)*" and "*Blood from convalescent donors was either obtained at a UC San Diego Health clinic under the approved IRB protocols of the University of California, San Diego (UCSD; 200236X) or recruited at the La Jolla Institute under IRB approved (LJI; VD-214)*"	
Provide statement confirming informed consent obtained from study participants.	Supplementary material file, Page 2: "*At the time of enrollment in the initial studies, all individual donors provided informed consent that their samples could be used for future studies, including this study*" and "*At the time of enrollment, all convalescent COVID-19 donors from UCSD, LJI, and Sanguine cohorts provided informed consent to participate in the present study and future studies*"	
Report on age and sex for all study participants.	Supplementary material file, Table S4 and S5, Page 29 and 30, respectively	

Design

Study protocol	Yes (indicate where provided: page no/section/legend)	n/a
For clinical trials, provide the trial registration number **OR** cite DOI in manuscript.		X

Laboratory protocol	Yes (indicate where provided: page no/section/legend)	n/a
Provide DOI or other citation details if detailed step-by-step protocols are available.	In the supplementary material file, the Materials and methods section includes the detail description of each protocol used in the study. Further, references supporting the protocols were included.	

Experimental study design (statistics details)	Yes (indicate where provided: page no/section/legend)	n/a
State whether and how the following have been done**, or** if they were not carried out.		
Sample size determination		X
Randomisation		X
Blinding		X
Inclusion/exclusion criteria	The inclusion/exclusion criteria for SARS-CoV-2-unexposed and convalescent COVID donors are described in the Materials and methods section (Supplementary materials file, Page 2)	

Sample definition and in-laboratory replication	Yes (indicate where provided: page no/section/legend)	n/a
State number of times the experiment was replicated in laboratory	The supplementary materials file includes the Materials and methods section described the replicates for each in vitro experiment and the numbers of samples used in each experiment.	
Define whether data describe technical or biological replicates	The number of individuals (either SARS-CoV-2 unexposed or convalescent COVID donors) included in each experiment is described in each figure legend and the Materials and methods section (Page 2).	

Ethics	Yes (indicate where provided: page no/section/legend)	n/a
Studies involving human participants: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Supplementary materials file, Page 2: "*All protocols described herein were approved by the institutional review boards (IRB) of the La Jolla Institute (IRB#:VD-112)*" and "*Blood from convalescent donors was either obtained at a UC San Diego Health clinic under the approved IRB protocols of the University of California, San Diego (UCSD; 200236X) or recruited at the La Jolla Institute under IRB approved (LJI; VD-214)*"	
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.		X
Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.		X

Dual Use Research of Concern (DURC)	Yes (indicate where provided: page no/section/legend)	n/a

If study is subject to dual use research of concern, state the authority granting approval and reference number for the regulatory approval		X

Analysis

Attrition	Yes (indicate where provided: page no/section/legend)	n/a
State if sample or data point from the analysis is excluded, and whether the criteria for exclusion were determined and specified in advance.	No information was excluded during the analyzes.	X

Statistics	Yes (indicate where provided: page no/section/legend)	n/a
Describe statistical tests used and justify choice of tests.	Supplementary material file, Page 6: "The statistical details of the experiments are provided in the respective figure legends. Data plotted in linear scale were expressed as Mean ± Standard Deviation (SD). Data plotted in logarithmic scales were expressed as Geometric Mean ± Geometric Standard Deviation (SD). Mann-Whitney or Wilcoxon tests were applied for unpaired or paired comparisons, respectively. Details pertaining to significance are also noted in the respective legends"	

Data Availability	Yes (indicate where provided: page no/section/legend)	n/a
State whether newly created datasets are available, including protocols for access or restriction on access.	Acknowledgments section: "*All datasets generated for this study are included in the Supplementary files. All the epitopes identified in this study have been also submitted to Immune epitope database (http://www.iedb.org/submission/1000855). Epitope pools utilized in this paper will be made available to the scientific community upon request and execution of a material transfer agreement (MTA)*"	
If data are publicly available, provide accession number in repository or DOI or URL.	*http://www.iedb.org/submission/1000855*	
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.	Supplementary material file, Page 5: "*For the 229E, NL63, HKU1 and OC43 common coronaviruses, we obtained protein sequences from GenBank records for complete genome sequences annotated as being the RefSeq for the corresponding virus; 229E: https://www.ncbi.nlm.nih.gov/nuccore/12175745; NL63: https://www.ncbi.nlm.nih.gov/nuccore/49169782; HKU1: https://www.ncbi.nlm.nih.gov/nuccore/85667876; OC43: no RefSeq record was available, so we used the complete genome record https://www.ncbi.nlm.nih.gov/nuccore/AY391777.1, as it contained annotation indicating it was the 'prototype strain'.*"	

Code Availability	Yes (indicate where provided: page no/section/legend)	n/a
For all newly generated code and software essential for replicating the main findings of the study:		
State whether the code or software is available.	http://www.iedb.org/submission/1000855	
If code is publicly available, provide accession number in repository, or DOI or URL.	http://www.iedb.org/submission/1000855	

Reporting

Adherence to community standards	Yes (indicate where provided: page no/section/legend)	n/a
MDAR framework recommends adoption of discipline-specific guidelines, established and endorsed through community initiatives. Journals have their own policy about requiring specific		

guidelines and recommendations to complement MDAR.		
State if relevant guidelines (eg., ICMJE, MIBBI, ARRIVE) have been followed, and whether a checklist (eg., CONSORT, PRISMA, ARRIVE) is provided with the manuscript.		X