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# Reporting Summary

Nature Research wishes to improve the reproducibility of the work that we publish. This form provides structure for consistency and transparency in reporting. For further information on Nature Research policies, see Authors & Referees and the Editorial Policy Checklist.

## Statistics

For all statistical analyses, confirm that the following items are present in the figure legend, table legend, main text, or Methods section.

| n/a | Confirmed | |
|---|---|---|
| ☐ | ☒ | The exact sample size (*n*) for each experimental group/condition, given as a discrete number and unit of measurement |
| ☐ | ☒ | A statement on whether measurements were taken from distinct samples or whether the same sample was measured repeatedly |
| ☐ | ☒ | The statistical test(s) used AND whether they are one- or two-sided<br>*Only common tests should be described solely by name; describe more complex techniques in the Methods section.* |
| ☒ | ☐ | A description of all covariates tested |
| ☒ | ☐ | A description of any assumptions or corrections, such as tests of normality and adjustment for multiple comparisons |
| ☐ | ☒ | A full description of the statistical parameters including central tendency (e.g. means) or other basic estimates (e.g. regression coefficient) AND variation (e.g. standard deviation) or associated estimates of uncertainty (e.g. confidence intervals) |
| ☐ | ☒ | For null hypothesis testing, the test statistic (e.g. *F*, *t*, *r*) with confidence intervals, effect sizes, degrees of freedom and *P* value noted<br>*Give P values as exact values whenever suitable.* |
| ☒ | ☐ | For Bayesian analysis, information on the choice of priors and Markov chain Monte Carlo settings |
| ☒ | ☐ | For hierarchical and complex designs, identification of the appropriate level for tests and full reporting of outcomes |
| ☒ | ☐ | Estimates of effect sizes (e.g. Cohen's *d*, Pearson's *r*), indicating how they were calculated |

*Our web collection on statistics for biologists contains articles on many of the points above.*

## Software and code

Policy information about availability of computer code

| | |
|---|---|
| Data collection | Ms Excel 2013, version 15.0 |
| Data analysis | R (version 3.1.2; The R Foundation for Statistical Computing, Vienna, Austria) |

For manuscripts utilizing custom algorithms or software that are central to the research but not yet described in published literature, software must be made available to editors/reviewers. We strongly encourage code deposition in a community repository (e.g. GitHub). See the Nature Research guidelines for submitting code & software for further information.

## Data

Policy information about availability of data

All manuscripts must include a data availability statement. This statement should provide the following information, where applicable:

- Accession codes, unique identifiers, or web links for publicly available datasets
- A list of figures that have associated raw data
- A description of any restrictions on data availability

The data in this study has been shared with the WHO and will be available upon request and approval by a data access committee.

# Field-specific reporting

Please select the one below that is the best fit for your research. If you are not sure, read the appropriate sections before making your selection.

☒ Life sciences ☐ Behavioural & social sciences ☐ Ecological, evolutionary & environmental sciences

For a reference copy of the document with all sections, see nature.com/documents/nr-reporting-summary-flat.pdf

# Life sciences study design

All studies must disclose on these points even when the disclosure is negative.

| | |
|---|---|
| Sample size | Single-center prospective observational study. Included a total of 10 cases. |
| Data exclusions | No data were excluded. |
| Replication | For medium viral load, defined as a Ct-value of 37 to 40, required confirmation by at least 2 replications. |
| Randomization | Prospective observational study, no randomization. |
| Blinding | Prospective observational study, no blinding. |

# Reporting for specific materials, systems and methods

We require information from authors about some types of materials, experimental systems and methods used in many studies. Here, indicate whether each material, system or method listed is relevant to your study. If you are not sure if a list item applies to your research, read the appropriate section before selecting a response.

## Materials & experimental systems

| n/a | Involved in the study |
|---|---|
| ☒ | ☐ Antibodies |
| ☒ | ☐ Eukaryotic cell lines |
| ☒ | ☐ Palaeontology |
| ☒ | ☐ Animals and other organisms |
| ☐ | ☒ Human research participants |
| ☐ | ☒ Clinical data |

## Methods

| n/a | Involved in the study |
|---|---|
| ☒ | ☐ ChIP-seq |
| ☐ | ☒ Flow cytometry |
| ☒ | ☐ MRI-based neuroimaging |

## Human research participants

Policy information about studies involving human research participants

| | |
|---|---|
| Population characteristics | A total of 10 pediatric SARS CoV-2 infection cases, 6 were males and 4 were females, with age ranging from 2 months to 15 years. All patients received antiviral therapy with α-interferon oral spray initiated from the admission (8000U, 2 sprays, thrice a day). No children required respiratory support or ICU care. |
| Recruitment | Since the research constitutes an analysis of existing data of pediatric SARS CoV-2 infection cases , there was no specific recruitment process involved. |
| Ethics oversight | We obtained approval by the ethics committee of Guangzhou Women and Children's Medical Center and written informed consents were obtained from the parents of the included patients before enrollment. |

Note that full information on the approval of the study protocol must also be provided in the manuscript.

## Clinical data

Policy information about clinical studies

All manuscripts should comply with the ICMJE guidelines for publication of clinical research and a completed CONSORT checklist must be included with all submissions.

| | |
|---|---|
| Clinical trial registration | This is not a clinical trail. |
| Study protocol | Characteristics of pediatric SARS CoV-2 infection and potential evidence for persistent fecal viral shedding. Besides this description paper, no other protocol are available. |
| Data collection | Data was acquired at the Guangzhou Women and Children's Medical Center, located in Guangzhou, Guangdong province, China. We recruited all children with confirmed 2019-nCoV infection who were admitted to Guangzhou Women and Children's Medical Center between Jan.22-Feb.22, 2020. |
| Outcomes | Epidemiological characteristics, clinical characteristics, and Oasopharyngeal and rectal swabs SARS CoV-2 testing results using real-time RT-PCR |

# Flow Cytometry

## Plots

Confirm that:

☒ The axis labels state the marker and fluorochrome used (e.g. CD4-FITC).

☒ The axis scales are clearly visible. Include numbers along axes only for bottom left plot of group (a 'group' is an analysis of identical markers).

☒ All plots are contour plots with outliers or pseudocolor plots.

☒ A numerical value for number of cells or percentage (with statistics) is provided.

## Methodology

| | |
|---|---|
| Sample preparation | Take the serum after centrifugation,test on the machine or test after thawing in - 80 ° low temperature storage,avoid repeated freezing and thawing. |
| Instrument | BD FACSCanto Ⅱ |
| Software | BD FACSDiVa,FCAP Array 3.0 |
| Cell population abundance | The fluorescent intensity of PE on the beads is quantified on a flow cytometer. Concentrations of a protein of interest in the samples can be obtained by comparing the fluorescent signals to those of a standard curve generated from a serial dilution of a known concentration of the analyte. |
| Gating strategy | Adjust FSC and SSC so that the microsphere community is within the predetermined range. The smaller microsphere group is set as "Gate S4", and the larger microsphere group is set as "Gate S5". |

☒ Tick this box to confirm that a figure exemplifying the gating strategy is provided in the Supplementary Information.