

Subject: Request for editorial action on Crits-Christoph et al. 2024

Dear Editors:

We are writing to bring to your attention serious issues with a paper published in Cell on September 19, 2024: "Genetic tracing of market wildlife and viruses at the epicenter of the COVID-19 pandemic (1).

The premises of Crits-Christoph et al. 2024 are unsound.

Crits-Christoph et al. 2024 is premised on Worobey et al., 2022 (2) and Pekar et al. 2022 (3), both of which are unsound and are the subject of a formal request for editorial action and possible retraction for scientific unsoundness and possible scientific misconduct (4).

Worobey et al., 2022 presents a geospatial analysis that purportedly suggests SARS-CoV-2 entered humans at the Huanan Seafood Market in Wuhan (2).

The analyses in Worobey et al. are unsound (5-7). Zhang et al. 2022 point out intra-market differences in the locations of animal cages and the locations of environmental samples positive for SARS-CoV-2 that invalidate the conclusions of Worobey et al. 2022 (5). Weissman 2024 points out that ascertainment bias invalidates the conclusions of Worobey et al. (6). Stoyan and Chiu, 2024 point out that the statistical analyses in Worobey et al. are unsound (7).

Science has published a correction and an erratum to Worobey et al. 2022 (8). However, the correction and erratum do not address the criticisms of refs. 5-7 (4).

Pekar et al. 2022, which was published together with Worobey et al. by an overlapping set of authors, presents a phylogenomic analysis that purportedly suggests SARS-CoV-2 entered humans at the Huanan Seafood Market in Wuhan (3).

The analyses of Pekar et al. 2022 are unsound (9-11). Massey et al. 2023 point out that the unwarranted exclusion of intermediate sequences invalidates the conclusions of Pekar et al. (9). Lv et al. 2024 report new intermediate sequences that invalidate the conclusions of Pekar et al. (10). PubPeer comments report computational errors that invalidate--in toto--the conclusions of Pekar et al. (11).

Science has published an erratum to Pekar et al. 2022 (12). However, the erratum does not address the full set of criticisms of ref. 11 and does not address the criticisms of refs. 9-10 (4).

The conclusions of Crits-Christoph et al. 2024 are unsound.

Phylogenomic evidence, epidemiological evidence, and documentary evidence all indicate that SARS-CoV-2 entered humans in July-November 2019 (13-28 [entry in July-November 2019 in ref. 13; entry in August 2019 in refs. 14-15; entry in September-October 2019 in ref. 16; entry in September-November 2019 in ref. 17; entry in September 2019 in ref. 18; entry in October-November in ref. 19; and entry in or before November 2019 in refs. 20-28]).

As such, conclusions based on data for the Huanan Seafood Market on or after mid-to-late December 2019--as in Crits-Christoph et al. 2024--cannot, even in principle, shed light on spillover into humans that occurred one to five months earlier, in July-November, 2019 (4,29).

Crits-Christoph et al. 2024 may be a product of scientific misconduct.

Compelling evidence has been presented that four of the authors of Crits-Christoph et al. 2024 (Kristian Andersen, Robert Garry, Edward Holmes, and Andrew Rambaut), including one of the corresponding authors (Kristian Andersen), committed scientific misconduct, publishing conclusions they knew to be invalid, on a previous paper on the same subject: Andersen et al. 2020 (30), a paper that concluded "Our analyses clearly show that SARS-CoV-2 is not a laboratory construct or a purposefully manipulated virus" and "we do not believe that any type of laboratory-based scenario is plausible."

Private email and Slack communications of authors Andersen, Garry, Holmes, and Rambaut--made public through a Congressional inquiry--establish that Andersen, Garry, Holmes, and Rambaut knew the premises and conclusions of their paper were invalid at the time the paper was drafted, at the time the paper was submitted for publication, and even at the time the paper was published (31-32). For example, in private email and Slack communications, Andersen wrote "the lab escape version of this is so friggin' likely to have happened because they were already doing this type of work and the molecular data is fully consistent with that scenario" on the day the first draft of the paper was started; wrote "accidental escape is in fact highly likely" and "we can't prove one way or the other, but we never will be able to" on the next day; wrote "From a genomics perspective, the theories Richard Ebright lay out I expect would look the same - there would be no way to distinguish between them" four days later; wrote "The furin link keeps bugging me" on the day the first draft of the paper was completed; wrote "we unfortunately just can't rule out a potential accidental infection from the lab" on the day the paper was submitted for publication; and wrote "we can't fully disprove culture" and "We also can't fully rule out engineering" a month after publication of the paper (31-32).

Formal requests for retraction of Andersen et al. 2020 for unsoundness and misconduct, up to and including scientific fraud, have been submitted (33-34).

The four authors of Crits-Christoph et al. 2024 who committed misconduct in Andersen et al., 2020 also all are authors of Worobey et al. 2022 (2) and Pekar et al. 2022 (3), the papers on which Crits-Christoph et al. 2024 is premised (see above) and for which a formal request retraction for unsoundness and misconduct has been submitted (4).

When a paper--such as Crits-Christoph et al. 2024--has unsound premises and conclusions and has authors who committed scientific misconduct on a previous unsound paper on the same subject and may have committed scientific misconduct on subsequent unsound papers on the same subject, there is clear basis to infer the paper may be a product of scientific misconduct.

Summary and request for editorial action.

Crits-Christoph et al. 2024 has unsound premises, has unsound conclusions, and may be a product of scientific misconduct. We urge *Cell* to issue an Expression of Editorial Concern for this paper and to initiate an investigation of this paper for possible retraction.