Review of: "Sentinel surveillance of SARS-CoV-2 in wastewater anticipates the occurrence of COVID-19 cases"

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Potential competing interests: The author(s) declared that no potential competing interests exist.

This study mainly analyzed SARS-CoV-2 in two wastewater treatment plants between April 13 and May 25, 2020 in Barcelona, Spain, one of the most COVID-19 affected areas in Europe. Interestingly, SARS-CoV-2 was also tested in some archived wastewater samples collected back in 2018, 2019, and early 2020, before COVID-19 pandemic or early phase of the reported cases in western populations. Testing of the virus before the pandemic helps to track the origin of SARS-CoV-2 and proves that wastewater surveillance can be used as an early warning tool for either new pathogen or new variant emergent in population. I have several comments.

1. Analysis of SARS-CoV-2 in two WWTPs and only in two months lacks of power to show temporal and spatial trend of the virus in populations.
2. It is interesting to see both IP2 and IP4 targets were positive in the sample collected on March 12, 2019. Further discussion is needed to address why these two targets were positive but not other targets. Is it because of different sensitivity? Is it false positive? I would like to sequence those two targets if possible.
3. Not sure the limit of detection of your detection system. I suggest to develop/adapt more sensitive assays, especially for the virus concentration part, so you can sensitively detect SARS-CoV-2 in those early samples.
4. A processing control is required to monitor the procedure of SARS-CoV-2 detection so you are confident with your assays. Without this control, you may underestimate the virus concentrations.
5. Not sure why you included panels K-M (Figure 1) in this study. It seems not fit in this study.
6. I suggest to add the year information for describing sampling time in many sentences so audience can easily follow what exact time of that sample you are talking about.