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## Comparative Study of Cycle Threshold RT-PCR SARS Cov-2 between Saliva Specimen and Nasopharyngeal Swab

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### Abstract

Coronavirus Disease 2019 (Covid-19) is an infectious disease that spreads quickly and attacks respiratory system that can cause death. The main diagnosis of Covid-19 is conducted by nasopharyngeal swab, an invasive method which can in turn increase the risk of transmission from patient to swabber. Hence, there is a need for non-invasive methods development, one of which is using saliva specimen. This study aims to evaluate the potential of using saliva specimen for diagnosis as an alternative of nasopharyngeal swab. The study was conducted on confirmed patients at Hajj Dormitory Embarcation Surabaya. The samples were collected randomly from 35 patients at Hajj Dormitory Embarcation Surabaya and evaluated at Surabaya Regional Health Laboratory. The results showed that there was no significant difference between cycle threshold RT-PCR of nasopharyngeal swab and saliva specimen. The sensitivity and specificity of saliva specimen are 88.2% and 100%, respectively, of nasopharyngeal swab. Hence, saliva specimen has the potential to be used as a non-invasive method for Covid-19 diagnosis.

### Keywords

Covid-19; Saliva specimen; Nasopharyngeal swab; Target genes

### References

Kemendes. Pedoman Pencegahan dan Pengendalian Coronaviruts Disease (Covid-19). Edisi 5. Jakarta: Kemenkes RI. 2020; [https://infeksiemerging.kemkes.go.id/download/REV-04\\_Pedoman\\_P2\\_COVID-19\\_27\\_Maret2020\\_TTD1.pdf](https://infeksiemerging.kemkes.go.id/download/REV-04_Pedoman_P2_COVID-19_27_Maret2020_TTD1.pdf) 2. WHO. Situation by Region, Country, Territory & Area. 2022; <https://covid19.who.int/table> 3. Budi Yanti, Fitri Dewi Ismida, Klarina Elsa Siti Sarah. Perbedaan uji diagnostik antigen, antibodi, RT-PCR dan tes cepat molekuler pada Coronavirus Disease 2019. Jurnal Kedokteran Syiah Kuala. 2020; 20(3). <https://doi.org/10.24815/jks.v20i3.18719> 4. WHO. Laboratory testing for coronavirus disease 2019 (COVID-19) in suspected human cases: Interim Guidance. WHO. 2020; <https://apps.who.int/iris/handle/10665/331501> 5. Meutia Wardhanie Ganie. Uji Sensitivitas Dan Spesifisitas Spesimen Saliva Pasien Covid-19 Menggunakan Pemeriksaan Polymerase Chain Reaction Untuk Identifikasi Infeksi Sars-Cov-2 Di Kota Medan. Tesis. Universitas Sumatera Utara. 2021; <https://repositori.usu.ac.id/handle/123456789/44506> 6. Dawes C. and Wong D.T.W. Role of Saliva and Salivary Diagnostics in the Advancement of Oral Health. Journal of Dental Research. 2019; 98(2): 133-141. doi: 10.1177/0022034518816961 7. Tan, Steph, Orchid Allocok, Mari Armstong-Hough, Anne L Wyllie. Saliva as A Gold-Standard Sample For SARS-Cov-2 Detection. Lancet Respir Med. 2021; 9(6): 562-564. doi: 10.1016/S2213-2600(21)00178-8 8. To Kelvin Kai-Wang, Owen Tak Yin Tsang, Cyril Chik-Yan Yip, et al. Consistent Detection of 2019 Novel Coronavirus in Saliva. Clinical Infectious Diseases: Brief Report. 2020; XX(XX):1-3. doi: 10.1093/cid/ciaa149 9. Rahmadhaniati, Dinna Rakhmina, Tini Elyn Herlina. Literature Review: Perbandingan Hasil Diagnosis Laboratorium pada COVID-19 menggunakan Metode Real Time-Polymerase Chain Reaction (RT-PCR) dan Metode Rapid Test Antigen. Jurnal Kesehatan. 2022; 15: 41-47. <https://doi.org/10.32763/juke.v15i1.389> 10. Pasomsub E., Watcharananan S.P., Boonyawat, et al.. Saliva Sample As A Non-Invasive Specimen For The Diagnosis of Coronavirus Disease. 2019. A Cross-Sectional Study. Clinical Microbiology and Infection. 2021; 27. doi: 10.1016/j.cmi.2020.05.001 11. Yusuf, Attahiyata, Putra, Andani Eka, Irvan Medison. Perbandingan Antara Swab Nasofaring, Swab Orofaring dan Saliva Untuk Mendeteksi SARS-CoV-2. Majalah Kedokteran Andalas. 2022; 45(4): 583-590. <http://scholar.unand.ac.id/eprint/108613> 12. Altawalah, Haya, Fatma Alhuraish, Wafaa Ali Alkandari, Sayeh Ezzikouri. Saliva specimen for Detection of Severe Acute Respiratory Syndrome Coronavirus 2 in Kuwait: A Cross-Sectional Study. Journal of Clinical Virology 132. 2020. doi: 10.1016/j.jcv.2020.104652 13. Chen, Lili, Jijia Zhao, Jinfeng Peng, Xiangshuang Li, Zhi geneg, et al. Detection Of SARS-Cov-2 in Saliva and Characterization of Oral Symptoms n COVID-19 Patients. Cell Proliferation; 2020; 53:e12923. <https://doi.org/10.1111/cpr.12923>

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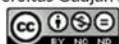
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