

**KETEPATAN UJI DIAGNOSIS *CORONAVIRUS DISEASE 2019*
DENGAN METODE *REVERSE TRANSCRIPTION LOOP-
MEDIATED ISOTHERMAL AMPLIFICATION (RT LAMP)***

SYSTEMATIC REVIEW

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Abstrak

Coronavirus Disease 2019 adalah penyakit yang menyerang saluran respirasi dan disebabkan oleh virus *Severe Acute Respiratory Syndrome-Coronavirus-2* (SARS-CoV-2). Pemeriksaan yang digunakan untuk mendeteksi kasus COVID-19 di Indonesia saat ini adalah pemeriksaan RT PCR, dan Rapid Tes Antigen. RT-PCR menjadi baku emas dalam mendiagnosis COVID-19 tetapi terdapat kekurangan dari sisi teknis dan sisi ekonomis. Terdapat uji molekuler lain yaitu *reverse transcription loop-mediated isothermal amplification* (RT-LAMP). Penelitian ini bertujuan mengetahui akurasi diagnostik uji amplifikasi asam nukleat lainnya yaitu RT-LAMP dalam mendiagnosis COVID-19. Desain penelitian ini adalah *systematic review*. Pencarian literatur dilakukan pada empat basis data yaitu *Pubmed, Science Direct, Medrxiv* dan *Google Scholar* menggunakan metode PRISMA-P 2015 menggunakan kata kunci yang telah ditetapkan. Tiga belas studi memenuhi kriteria inklusi dan dilakukan *critical appraisal* menggunakan *The Joanna Briggs Institute*. Hasil menunjukkan nilai sensitivitas tertinggi sebesar 98.6% berjenis sampel swab nasal dan faringeal, nilai spesifisitas >95% pada seluruh kelompok sampel, nilai prediktif positif tertinggi dari kelompok bersampel swab nasofaring dan orofaring sebesar 100%, dan nilai prediktif negatif tertinggi sebesar 99.9% dengan jenis sampel saliva. Sensitivitas dan spesifisitas dipengaruhi oleh besar *false negative* dan *false positive* sedangkan nilai prediktif dipengaruhi oleh prevalensi penyakit. Berdasarkan nilai akurasi diagnostik tersebut, RT-LAMP dapat dipertimbangkan sebagai alternatif uji RT-PCR.

Kata Kunci : Akurasi Diagnostik, RT-LAMP, SARS CoV-2

**ACCURACY OF CORONAVIRUS DISEASE 2019 DIAGNOSIS TEST
WITH REVERSE TRANSCRIPTION LOOP-MEDIATED
ISOTHERMAL AMPLIFICATION (RT-LAMP) METHOD
SYSTEMATIC REVIEW**

Merry Yustia Karim

Abstract

Coronavirus Disease 2019 is a disease that attacks the respiratory tract and is caused by the Severe Acute Respiratory Syndrome-Coronavirus-2 (SARS-CoV-2) virus. The tests used to detect COVID-19 cases in Indonesia today are RT PCR and Rapid Antigen Tests. RT-PCR is the gold standard in diagnosing COVID-19, but there are areas for improvement from the technical and economic sides. Another molecular test is reverse transcription loop-mediated isothermal amplification (RT-LAMP). This study aims to determine the diagnostic accuracy of another nucleic acid amplification test, namely RT-LAMP, in diagnosing COVID-19. The design of this study is a systematic review. Literature searches were conducted on four databases, namely Pubmed, Science Direct, Medrxiv and Google Scholar, using the PRISMA-P 2015 method using predetermined keywords. Thirteen studies met the inclusion criteria and were conducted using The Joanna Briggs Institute. The results showed the highest sensitivity value of 98.6% of the nasal and pharyngeal swab sample types, a specificity value of >95% in the entire sample group, the highest positive predictive value of the nasopharyngeal and oropharyngeal swab sampled group of 100% and the highest negative predictive value of 99.9% with the saliva sample type. Sensitivity and specificity are influenced by the magnitude of false negatives and false positives, while the prevalence of the disease influences predictive values. Based on these diagnostic accuracy values, RT-LAMP can be considered an alternative to RT-PCR tests.

Keywords: Diagnostic Accuracy, RT-LAMP, SARS CoV-2