LITERATURE REVIEW: STATUS PERKEMBANGAN PEMBUATAN VAKSIN *SEVERE ACUTE RESPIRATORY SYNDROME CORONAVIRUS 2* (SARS-CoV-2) DENGAN PLATFORM *INACTIVATED VIRUS*

SKRIPSI

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Sebagai salah satu syarat untuk memperoleh gelar Sarjana Farmasi

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Juli 2022

Disetujui Oleh:

Pembimbing	Pembimbing
	
Dr. Erman Tritama, M.Si	Nur Asni Setiani, M.Si

Skripsi ini dipersembahkan untuk aku, Terimakasih kepada Allah SWT, Keluarga ku Mama, Mimi, Oduts (Dzaky), serta orang-orang baik yang sudah memberikan doa dan semangat untuk menyelesaikan skripsi ini.

ABSTRAK

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) adalah virus yang menyerang sistem pernapasan sehingga menyebabkan terjadinya *Coronavirus disease 2019* (COVID-19). *Inactivated virus* adalah salah satu *platform* yang digunakan untuk pengembangan vaksin SARS-CoV-2. Tujuan penelitian ini untuk memberikan informasi mengenai perkembangan vaksin SARS-CoV-2 yang menggunakan platform *Inactivated virus,* dan memberikan informasi cara pembuatan (*drugs substance* dan *drugs product*) dan efektifitas jenis vaksin ini. Metode penelitian dalam artikel review ini menggunakan penelusuran dengan database *PubMed,* dan *Google Scholar.* Hasil penelitian didapatkan informasi perkembangan vaksin SARS-CoV-2 dengan platform *inactivated* virus beberapa vaksin yang sedang dilakukan uji klinis fase 4, vaksin tersebut diantaranya vaksin CoronaVac, *Inactivated SARS-CoV-2 vaccine (Vero cell)* dan BBIBP-CorV. Bedasarkan hasil uji klinik vaksin dengan platform ini menghasilkan tingkat efikasi >50%. Vaksin CoronaVac efektif melawan virus SARS-CoV-2 varian gamma, Delta dan Omicron dengan efektivitas 46,8%, 59%, dan 38,2%. *Drugs substance* dibuat dengan memformulasikan *strain* virus SARS-CoV-2 yang diinaktivasi dengan β-propiolakton atau dengan formaldehid dan diberikan tambahan Aluminium hidroksida, Algel, atau CpG 108 sebagai adjuvant.

Kata Kunci: SARS-CoV-2, Vaksin, *Inactivated Platform***,** Uji Praklinik, Uji Klinik, Efikasi, Efektivitas

ABSTRACT

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) is a virus that attacks the respiratory system, causing Coronavirus disease 2019 (Covid-19). Inactivated virus is one of the platforms used to develop the SARS-CoV-2 vaccine. This research aimed to inform about the SARS-CoV-2 vaccine development using inactivated virus platform and to provide information on how to produce (drugs substance and drugs product) and the effectiveness of this type of vaccine. This article review applied a search using the PubMed database and Google Scholar as the research method. The results of the study obtained information on the development of the SARS-CoV-2 vaccine by an inactivated virus platform for several vaccines currently undergoing phase 4 clinical trials, the vaccines include the CoronaVac vaccine, Inactivated SARS-CoV-2 vaccine (Vero cell) and BBIBP-CorV. Based on the results of clinical trials of vaccines with this platform, the efficacy rate was >50%. The CoronaVac vaccine was effective against the SARS-CoV-2 variants of gamma, Delta and Omicron with 46.8%, 59%, and 38.2% effectiveness. The drug's substance was prepared by formulating the SARS-CoV-2 virus strain which is inactivated with β-propiolactone or formaldehyde and added with Aluminum hydroxide, Algal, or CpG 108 as an adjuvant.

Keywords: SARS-CoV-2, *Vaccine, Inactivated Platform, Praclinical Trial, Clinical Trial, Efficacy, Effectiveness*

KATA PENGANTAR

Bismillahirrahmanirrahim,

Puji dan syukur penulis panjatkan ke hadirat Allah SWT atas segala berkah rahmat dan ridho-Nya penulis dapat menyelesaikan penelitian dan penulisan skripsi yang berjudul **"*Literature Review:* Status Perkembangan Vaksin *Severe Acute Respiratory Syndrome Coronavirus* 2 (SARS-CoV-2) Dengan Platform *Inactivated Virus*".** Penelitian dan penulisan skripsi ini dilakukan untuk memenuhi salah satu syarat untuk mendapatkan gelar sarjana pada jurusan Farmasi Sekolah Tinggi Farmasi Indonesia. Penulis mengucapkan terima kasih kepada dosen pembimbing Dr. Erman Tritama, M.Si dan Nur Asni Setiani, M.Si atas bimbingan, nasihat, serta dukungan yang diberikan. Pada kesempatan ini, tidak lupa penulis mengucapkan terima kasih yang sebesar – besarnya kepada :

1. Dr. apt. Adang Firmansyah, M.Si selaku Ketua Sekolah Tinggi Farmasi Indonesia,
2. Dr. Diki Prayugo Wibawa, M.Si selaku Wakil Ketua I Sekolah Tinggi Farmasi Indonesia,
3. Dr. apt. Wiwin Winingsih , M.Si selaku Kepala Program Studi,
4. Prof. Dr. apt. Aang Hanafiah WS selaku Dosen Wali yang telah banyak memberikan bimbingan dan arahan kepada penulis,
5. Seluruh staf dosen, staf administrasi serta karyawan Sekolah Tinggi Farmasi Indonesia,
6. Serta teman – teman angkatan 2018 yang telah memberikan inspirasi dan kegembiraan selama penulis kuliah di Sekolah Tinggi Farmasi Indonesia.

Oleh karena itu, diharapkan masukan berupa kritik dan saran yang bersifat membangun untuk perbaikan di masa yang akan datang. Penulis berharap semoga tugas akhir ini akan memberikan manfaat bagi penulis sendiri dan juga bagi pihak lain yang berkepentingan.

Bandung, Juli 2022

Penulis

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