

INTISARI

Potensi Jahe Sebagai Agensi Pengendali Covid-19 Melalui Peningkatan Imun, Fungsi Organ Respirasi dan Populasi Reseptor Ace-2 Pada *Zebrafish*

Dita Arya Widatama
18/436643/PBI/01581

Fakultas Biologi, Universitas Gajah Mada

Kondisi pandemik Covid-19 perlu mendapat perhatian khusus secara mendesak. Upaya mengatasi pandemi perlu dilakukan dari berbagai sektor pendekatan yang potensial untuk mendapatkan solusi. Covid-19 diduga mempunyai mekanisme internalisasi kedalam sel melalui reseptor ACE2 untuk menginfeksi inangnya, pemberian BSA (*Bovine Serum Albumin*) diharapkan dapat memicu respons sistem kekebalan yang diharapkan meniru tekanan pada sistem kekebalan yang disebabkan oleh infeksi seperti pada kasus Covid-19. Beberapa alternatif penggunaan tanaman herbal telah direkomendasikan, salah satunya jahe (*Zingiber officinale*). Penelitian ini bertujuan untuk mengetahui potensi jahe (*Zingiber officinale*) sebagai agensi pengendali covid-19 melalui peningkatan imun, fungsi organ respirasi dan populasi reseptor ACE2 pada *Zebrafish* (*Danio rerio*). Penelitian menggunakan metode eksperimental dengan rancangan acak lengkap (RAL) dan masing-masing perlakuan diulang 3 kali. Subyek uji berupa *Zebrafish* yang dibagi dalam 5 perlakuan yaitu kontrol, BSA sebagai kontrol negatif, perlakuan 1%, 2% dan 3% jahe (*Zingiber officinale*). Parameter yang diamati yaitu parameter fisiologis :bukaan operkulum, *heart rate*, performa renang dan parameter histologis dengan pewarnaan: HE, PAS dan IHC. Data yang diperoleh diuji dengan ANOVA dan uji DMRT dengan taraf kepercayaan 95%. Hasil penelitian menunjukkan bahwa konsentrasi 3% jahe berpengaruh efektif dalam peningkatan imun, fungsi organ respirasi dan populasi reseptor ACE2 pada *Zebrafish*

Kata kunci : BSA, *Zebrafish*, *Zingiber officinale*, Imun, ACE2



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Populasi Reseptor Ace-2 Pada Zebrafish (DANIO RERIO (HAMILTON, 1822))

DITA ARYA WIDATAMA, Dr. Bambang Retnoaji, M.Sc

Universitas Gadjah Mada, 2021 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Potential of Ginger as a Covid-19 Kontrol Agency Through Increased Immunity, Respiration Organ Function and Ace-2 Receptor Population in Zebrafish

Dita Arya Widatama
18/436643/PBI/01581

Departement Biology, Universitas Gajah Mada

ABSTRACT

The Covid-19 pandemic conditions need urgent special attention. Efforts to overcome a pandemic need to be carried out from various potential approaches to find solutions. Covid-19 is thought to have an internalization mechanism into cells through the ACE2 receptor to infect its host, giving BSA (Bovine Serum Albumin) is expected to trigger an immune sistem response, which is expected to mimic the pressure on the immune sistem caused by infection as in the case of Covid-19. Several alternative uses for herbal plants have been recommended, one of which is ginger (Zingiber officinale). This study aims to determine the potential of ginger (Zingiber officinale) as a covid-19 kontrol agent through increasing immunity, respiratory organ function and ACE2 receptor population in Zebrafish (Danio rerio). The study used experimental methods with a completely randomized design and each treatment was repeated 3 times. The test subjects were Zebrafish which were divided into 5 treatments, namely kontrol, BSA as negatif kontrol, treatment 1%, 2% and 3% ginger (Zingiber officinale). The parameters observed were physiological parameters: operkulum opening, heart rate, swimming performance and histological method using HE, PAS and IHC colouring. The data obtained were tested by ANOVA and DMRT test with a confidence level of 95%. The results showed that the concentration of 3% ginger had an effective effect on increasing immunity, respiratory organ function and ACE2 receptor population in Zebrafish.

Keywords : BSA, Zebrafish, Zingiber officinale, Immune, ACE2