

## ABSTRAK

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Judul : Pengaruh Ekstrak Kurkumin Konsentrasi 0,0005%, 0,0025%, dan 0,005% Terhadap Viabilitas Sel Fibroblas dan Tinjauannya Dalam Islam

Patogenesis karies berawal dari adanya plak gigi yang berisi bakteri beserta produk-produknya yang terbentuk pada permukaan gigi. Akumulasi bakteri ini tidak terjadi secara kebetulan melainkan terbentuk melalui serangkaian tahapan. Karies merupakan salah satu faktor yang dapat menyebabkan terbukanya jaringan pulpa gigi. Terbukanya jaringan pulpa dapat menyebabkan terjadinya pulpitis mulai dari reversibel sampai menjadi irreversible dan pada kasus terbukanya jaringan pulpa dapat dilakukan perawatan kaping pulpa yang membutuhkan suatu bahan yang bersifat anti-bakterial. Islam sangat memperhatikan kesehatan dan menganjurkan untuk memelihara kebersihan dan nabi Muhammad SAW memerintahkan kepada umatnya untuk selalu melakukan pembaruan ilmu pengetahuan seperti, di bidang kesehatan dan kedokteran. Tujuan penelitian ini untuk mengetahui kemampuan viabilitas sel fibroblas dengan penambahan ekstrak kurkumin serta mengetahui pandangan Islamnya. Penelitian yang dilakukan menggunakan desain eksperimental laboratorium dengan menggunakan lima belas sampel well yang terdiri dari masing-masing tiga sampel untuk diuji dengan ekstrak kurkumin konsentrasi 0,0005%, 0,0025%, 0,005%, kontrol positif, dan kontrol yang dipaparkan selama 24 jam. Kelompok kontrol positif dilakukan pemaparan menggunakan media kultur DMSO dan kontrol tidak dilakukan pemaparan larutan. Melalui uji statistik ditemukan, ekstrak kurkumin konsentrasi 0,005% memiliki viabilitas yang besar dibandingkan dengan konsentrasi 0,0005% secara signifikan. Pada ekstrak kurkumin 0,0005% memiliki viabilitas sel fibroblas yang tidak lebih besar dibandingkan dengan konsentrasi 0,0025% bergitu pula dengan konsentrasi 0,0025% terhadap konsentrasi 0,005% ( $P= 0,000$ ). Disimpulkan bahwa ekstrak kurkumin dapat mempengaruhi viabilitas sel fibroblas jika dipapar selama 24 jam. Dalam perspektif Islam ekstrak kurkumin berpengaruh terhadap viabilitas sel fibroblast, yang terbukti dapat dipergunakan berdasarkan kaidah fiqh hukum asal segala sesuatu yang bermanfaat diperbolehkan Allah menciptakan sesuatu dengan ukuran tertentu.

Kata kunci: Kurkumin, sel fibroblast, viabilitas, pulpa.

## **ABSTRACT**

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Title : Effect of Curcumin Extract Concentration of 0.0005%, 0.0025%, and 0.005% on Fibroblast Cell Viability and Their Review in Islam

The pathogenesis of caries begins with the presence of dental plaque containing bacteria and their products that form on the tooth surface. This accumulation of bacteria does not occur by chance but is formed through a series of stages. Caries is one of the factors that can lead to the exposure of the dental pulp tissue. The exposure of the pulp tissue can cause pulpitis ranging from reversible to irreversible and in the case of open pulp tissue, pulp capping can be treated which requires an anti-bacterial material. Islam is very concerned about health and recommends maintaining cleanliness and the prophet Muhammad SAW ordered his people to always carry out scientific updates such as in the fields of health and medicine. The purpose of this study was to determine the viability of fibroblast cells with the addition of curcumin extract and to determine the Islamic view. The study was conducted using a laboratory experimental design using fifteen well samples consisting of three samples each to be tested with curcumin extract concentrations of 0.0005%, 0.0025%, 0.005%, positive control, and control exposed for 24 hours. . The positive control group was exposed to using DMSO culture media and the control group was not exposed to the solution. Through statistical tests, it was found that curcumin extract with a concentration of 0.005% had a greater viability compared to a concentration of 0.0005% significantly. The 0.0005% curcumin extract had fibroblast cell viability that was not greater than the 0.0025% concentration as well as the 0.0025% concentration against the 0.005% concentration ( $P= 0.000$ ). It was concluded that curcumin extract could affect the viability of fibroblast cells when exposed for 24 hours. From an Islamic perspective, curcumin extract has an effect on the viability of fibroblast cells, which has been proven to be usable based on the fiqh rules of law as long as everything that is useful is allowed by Allah to create something with a certain size.

Keywords: Curcumin, fibroblast cells, viability, pulp.