Pengaruh Ekstrak Kulit Manggis Terhadap Ekspresi Fibroblast Growth Factor-2 (FGF-2) Pada Kultur Sel Human Gingival Fibroblast (Penelitian In Vitro)

ABSTRAK

Latar belakang:. Pencabutan gigi merupakan tindakan yang menimbulkan luka pada soket gigi. Luka dapat dengan mudah sembuh akan tetapi tidak jarang pula mengalami berbagai macam komplikasi seperti perdarahan, pembengkakan, dry socket hingga penyebaran infeksi. Penggunaan bahan alam yaitu ekstrak kulit manggis dapat meminimalisir komplikasi pada penyembuhan luka pasca pencabutan gigi. Ekstrak Kulit manggis mempunyai kandungan anti inflamasi dan anti oksidan yang dapat menstimulasi Fibroblast Growth Factor-2 (FGF-2). **Tujuan:** Untuk mengetahui pengaruh ekstrak kulit manggis (Garcinia Mangostana Linn) terhadap ekspresi FGF-2 pada kultur sel human gingival fibroblast. **Metode:** Kultur sel human gingival fibroblast dibagi ke dalam 6 sumuran di setiap masing-masing kontrol dan perlakuan yaitu kontrol 24 dan 48 jam, perlakuan 24 dan 48 jam. Kelompok perlakuan diberi ekstrak kulit manggis dengan konsentrasi 800µg/ml lalu dilakukan ektraksi RNA. Setelah hasil RNA didapatkan, dilakukan prosedur Polymerase Chain Reaction (PCR). **Hasil:** Kelompok perlakuan 24 jam didapatkan hasil pendaran lebih terang daripada kelompok kontrol 24 jam sedangkan kelompok perlakuan 48 jam, tidak terjadi peningkatan ekspresi dibandingkan pada kelompok kontrol 48 jam. **Kesimpulan:** Pengaplikasian ekstrak kulit manggis meningkatkan ekspresi FGF-2 pada kultur sel human gingival fibroblast.

Kata kunci: FGF-2, kulit manggis, human gingival fibroblast, metode PCR

The Effect of the Application of Mangosteen Peel Extract (Garcinia mangostana Linn.) towards FGF-2 Expression on Human Gingival Fibroblast Cell Culture
(In Vitro Study Group)

ABSTRACT

Background: Tooth extraction caused an injury to the tooth socket and the process of wound healing after tooth extraction sometimes have problems and cause many complications such as bleeding, swelling, dry socket and even the spread of infection. The use of herbal medicine in the wound healing process can minimize the complication that occur. Mangosteen peel not only has anti-inflammatory and antioxidant capabilities but also can stimulate Fibroblast Growth Factor-2 (FGF-2). **Purpose:** The aim of this study was to investigate the effect of the application of mangosteen peel extract towards FGF-2 expression on human gingival fibroblast cell culture. **Methods:** Human gingival fibroblast cell culture divide on 6 well plates for each category: control 24 and 48 hours, the treatment of 24 and 48 hours. The treatment groups were given mangosteen peel extract at concentration 800µg/ml, then the extraction of the RNA was done and the RNA were processed by Polymerase Chain Reaction (PCR) assay. **Results:** Group of the treatment 24 hours show a brighter band than the control group 24 hours, While the treatment group 48 hours, no increase expression compared to the control group 48 hours. **Conclusion:** The application of the mangosteen peel extract can increase the expression of FGF-2 on human gingival fibroblast cell culture.

Keywords: FGF-2, mangosteen peel, human gingival fibroblast, PCR assay