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INTISARI

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**PENGARUH EKSTRAK ETANOLIK DAUN SUKUN (*Artocarpus altilis*)
TERHADAP AKTIVITAS ENZIM KATALASE KELENJAR
SUBMANDIBULARIS TIKUS PUTIH GALUR WISTAR SETELAH
RADIASI COBALT-60**

Radioterapi masih menjadi pilihan utama di kedokteran gigi untuk perawatan kanker kepala leher. Radioterapi memiliki efek negatif yaitu merusak jaringan sehat di rongga mulut, salah satunya kelenjar submandibularis. Aktivitas enzim katalase kelenjar submandibularis dapat menurun akibat akumulasi radikal bebas. Daun sukun memiliki kandungan flavonoid, alkaloid, dan terpenoid yang dapat digunakan sebagai antioksidan untuk melawan radikal bebas. Penelitian ini bertujuan untuk mengetahui pengaruh ekstrak daun sukun dosis 100 mg/KgBB, 200 mg/KgBB, dan 400 mg/KgBB terhadap aktivitas enzim katalase kelenjar submandibularis tikus Wistar setelah radiasi Cobalt-60. Jenis penelitian ini adalah laboratoris eksperimental dengan rancangan *post test-only control group design* dan menggunakan 30 ekor tikus *Rattus norvegicus* galur Wistar jantan yang dibagi menjadi 5 kelompok, yaitu kelompok perlakuan ekstrak daun sukun dosis 100 mg/KgBB (P1), 200 mg/KgBB (P2), 400 mg/KgBB (P3), kontrol negatif (KN), dan kontrol sehat (KS). Radiasi Cobalt-60 diberikan dengan dosis 10 Gy. Pengukuran aktivitas enzim katalase dilakukan dengan metode spektrofotometri. Rerata hasil penelitian menunjukkan aktivitas tertinggi pada kelompok P3 sebesar 57,834 µg/mL, diikuti kontrol sehat sebesar 52,144 µg/mL, kelompok P2 sebesar 43,292 µg/mL, kelompok P1 sebesar 26,082 µg/mL, dan kontrol negatif sebesar 17,106 µg/mL. Hasil uji statistik *One-Way ANOVA* menunjukkan perbedaan sangat bermakna antar kelompok ($p < 0,01$). Uji *Post-Hoc LSD* menunjukkan terdapat perbedaan sangat bermakna antara semua kelompok perlakuan dengan kontrol negatif ($p < 0,01$), serta perbedaan bermakna antara kelompok P3 dengan kontrol sehat ($p < 0,05$). Berdasarkan hasil penelitian dapat disimpulkan bahwa ekstrak daun sukun dapat mempengaruhi aktivitas enzim katalase kelenjar submandibularis tikus Wistar setelah radiasi Cobalt-60.

Kata kunci : Radioterapi, Cobalt-60, katalase, radikal bebas, daun sukun
Kepustakaan : 56 (1990-2018)

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ABSTRACT

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THE EFFECT OF BREADFRUIT LEAF ETANOLIC EXTRACT (*Artocarpus altilis*) TOWARDS THE ACTIVITY OF THE WISTAR'S SUBMANDIBULARIS CATALYTIC ENZYME AFTER COBALT-60 RADIATION.

*Radiotherapy is the main choice in dentistry for the treatment of head neck cancer. Radiotherapy has a negative effect of damaging healthy tissue in the oral cavity, one of them is the submandibular gland. The activity of the enzyme catalase of submandibular gland can decrease due to the accumulation of free radicals. Breadfruit leaves contain flavonoids, alkaloids, and terpenoids can be used as antioxidants to fight free radicals. This study aims to determine the effect of breadfruit leaf extract dose of 100 mg/KgBB, 200 mg/KgBB, and 400 mg/KgBB towards the activity of the Wistar's submandibularis catalytic enzyme after Cobalt-60 radiation. This type of research is experimental laboratory with post-test-only control group design and uses 30 male *Rattus norvegicus* Wistar rats divided into 5 groups. The groups are dosage of breadfruit leaf extract treatment 100 mg/KgBB (P1), 200 mg/KgBB (P2), 400 mg/KgBB (P3), negative control (KN), and healthy control (KS). Cobalt-60 radiation is given at a dose of 10 Gy. Measurement of catalase enzyme activity was examined by a spectrophotometer. The mean results of the study showed that the highest activity were in the P3 group of 57.834 µg/mL, followed by healthy controls of 52.144 µg/mL, P2 group of 43.29 µg/mL, P1 group of 26.082 µg/mL, and negative control of 17.106 µg/mL. The results of the One-Way ANOVA statistical test showed very significant differences between groups ($p < 0.01$). The LSD Post-Hoc test showed that were very significant differences between negative controls with all treatment groups ($p < 0.01$), and significant differences between the P3 group and healthy controls ($p < 0,05$). Based on the results of the study it can be concluded that breadfruit leaf extract can affect the activity of the Wistar's submandibularis catalytic enzyme after Cobalt-60 radiation.*

Keywords : Radiotherapy, Cobalt-60, Catalase, free radical, breadfruit leaf
Bibliography : 56 (1990-2018)