Efek kurkumin terhadap proliferasi sel limfosit dari limpa mencit c3h bertumor payudara secara in vitro

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Abstrak

Kurkumin adalah senyawa biokatif yang diisolasi dari Curcuma xanthorrhiza telah diketahui mempunyai efek anti-kanker payudara. Perkembangan sel tumor payudara mempunyai hubungan yang erat dengan respon imun yang dimediasi oleh sel limfosit. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian kurkumin terhadap respon imun pada sel limfosit dari limpa mencit C3H bertumor payudara secara in vitro. Penelitian ini menggunakan metode eksperimen. Sel limfosit diisolasi dari limpa mencit C3H bertumor payudara setelah 2 minggu transplantasi tumor, kemudian diberi perlakuan kurkumin dan dikultur dalam inkubator pada 37 oC dan CO2 5%. Pada penelitian ini perlakuan dibagi menjadi 4 kelompok perlakuan yaitu perlakuan P1 dengan dosis kurkumin 5 ppm, perlakuan P2 dengan dosis kurkumin 25 ppm, perlakuan P3 dengan dosis kurkumin 50 ppm, dan perlakuan K tanpa perlakuan kurkumin sebagai kontrol. Respon imun ditentukan berdasarkan proliferasi sel limfosit melalui pengamatan dan penghitungan jumlah sel limfosit selama lima hari yakni hari ke 1, 2, 3, 4, dan 5. Penghitungan jumlah sel limfosit dilakukan dengan metode haemositometer dibawah mikroskop fase kontras. Hasil penelitian menunjukkan perlakuan sel limfosit dengan kurkumin sampai hari ke 5 menyebabkan penekanan/supresi pada sel limfosit sebesar: perlakuan kurkumin 5 ppm 52%, perlakuan kurkumin 25 ppm 55%, dan perlakuan kurkumin 50 ppm 41%. Hasil analisis statistik dengan uji ANOVA satu arah dan uji Post Hoc Duncan menunjukkan tidak ada perbedaan pengaruh yang signifikan terhadap jumlah sel limfosit dengan perlakuan dosis kurkumin yang berbeda (5,25, dan 50 ppm).

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Curcumin is a bioactive compound isolated from Curcuma xanthorrhiza having biological activities as anti-breast cancer. The development of tumor cell has a strong relationship with cellular immune response mediated by lymphocyte cell. The aim of this study was to find out the effects of curcumin on proliferation of lymphocyte cells from the spleen of breast cancer C3H mice in vitro. This research applied experimental method by using lymphocyte cell isolated from the spleen of breast cancer C3H mice after two weeks of mammary tumor transplantation. Lymphocyte cells were treated with curcumin then cultured in incubator at 37 oC, 5% CO2 . The treatments divided into 4 groups: P1 was group treated with 5 ppm of curcumin, P2 was group treated with 25 ppm of curcumin, P3 was group treated with 50 ppm of curcumin and K group without curcumin treatment as a negative control. Immune response was determined based on cell proliferation through lymphocyte cell amount counting at day-1, day-2, day-3,day- 4, and day-5. The amount of lymphocyte cells were counted using haemocytometer methode under contrast phase microscope. The result of this study indicated that curcumin treatment suppressed the proliferation of lymphocyte cell: 52% of lymphocyte supression for treatment with 5 ppm of curcumin, 55% of lymphocyte supression for treatment with 25 ppm of curcumin, 41% of lymphocyte supression for treatment with 50 ppm of curcumin. one way-ANOVA and Post Hoc Duncan test showed that there were not significant differentiation against lymphocyte cell amount with the variety of doses of curcumin (5, 25, 50 ppm).