Potensi modulasi ekspresi MRNA MRP1 dan MRP2 oleh kurkumin pada galur sel MCF-7 yang dipaparkan endoksifen dan estradiol berulang = Modulatory potential of MRNA expression in MRP1 and MRP2 by curcumin in MCF 7 cell line exposed with endoxifen and estradiole repeatedly

Wilson Bastian, author

Abstrak

Kurkumin diketahui dapat menghambat drug efflux transporter, khususnya pada penelitian ini overekspresi multidrug resistance protein 1 MRP1 dan MRP2, yang berdasarkan penelitian terdahulu, diduga menyebabkan resistensi MCF-7 pada pemberian endoksifen dan estradiol berulang. Penelitian ini bertujuan untuk membuktikan apakah kurkumin dapat menghambat ekspresi MRP1 dan MRP2 pada MCF-7 yang diberikan endoksifen dan estradiol berulang.
Metode: Penelitian eksperimental ini menggunakan cDNA hasil sintesis isolasi RNA, dimana kelompok perlakuan dipaparkan pada MCF-7 3x per minggu, hingga 8 minggu. Perlakuan dibagi menjadi DMSO kontrol negatif , Endoksifen 1,000 nM/L ?-Estradiol 1 nM/L EB, kontrol positif , Endoksifen 1,000 nM/L ?-Estradiol 1 nM/L Kurkumin 8.5?M EBK8.5, dan Endoksifen 1,000 nM/L ?-Estradiol 1 nM/L Kurkumin 17?M EBK17 . Tingkat ekspresi mRNA relatif MRP1 dan MRP2 diukur dengan qRT-PCR dan dihitung dengan metode livak.
Hasil: Terdapat peningkatan ekspresi mRNA pada perlakuan EB pada MRP1 dan MRP2, relatif terhadap DMSO. Peningkatan ekspresi mRNA meningkat pada EBK8.5, dan menurun pada EBK17 pada MRP1. Terjadi sebaliknya pada MRP2.
Kesimpulan: Kurkumin dapat bekerja sebagai terapi pendamping pada terapi endoksifen dan estradiol untuk menurunkan resistensi dari MRP1 dan MRP2.
.....Background: Curcumin is known to inhibit drug efflux transporter overexpression, such as multidrug resistance protein 1 MRP1 dan MRP2, which in previous experiment, suspected as a causal of MCF 7 cell resistancy given endoxifen and estradiol repeatedly. This study aims to prove whether curcumin can inhibit expression of MRP1 and MRP2 in MCF 7 given endoxifen and estradiol repeatedly.
Method: This experimental design uses cDNA from RNA isolation synthesis, which treatment group given repeatedly on MCF 7 3x per week until 8th week. The treatment groups are DMSO negative control, Endoxifen 1,000 nM L Estradiol 1 nM L EB, positive control, Endoxifen 1,000 nM L Estradiol 1 nM L Curcumin 8.5 M EBK8.5, and Endoxifen 1,000 nM L Estradiol 1 nM L Curcumin 17 M EBK17. Relative mRNA expression in MRP1 and MRP2 is measured with qRT PCR and quantified with Livak method.
Result: There is an increased mRNA expression in treatment of EB in MRP1 and MRP2, relative to DMSO. Increased mRNA expression is higher on EBK8.5, and lower on EBK17 in MRP1, and conversely in MRP2.

Conclusion: Curcumin could work as adjuvant for Endoxifen and Estradiol therapy to decrease resistancy caused by mRNA expression of MRP1and MRP2.