

Synergistic interaction between quercetin and doxorubicin on MCF-7 human breast cancer cell line

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| Title | Synergistic interaction between quercetin and doxorubicin on MCF-7 human breast cancer cell line |
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| Abstract | <p>The effectiveness of doxorubicin has decreased due to resistance of cancer cells. One of the natural ingredients that are proven to reduce the resistance to anticancer is quercetin. Quercetin interacts with doxorubicin via a competition of P-glycoprotein (P-gp) transporter activity. The aim of this study is to evaluate the interaction of quercetin and doxorubicin as cytotoxicity effect on MCF-7 cells. Cytotoxicity test was conducted by the MTT method. Mechanism of interaction between doxorubicin and quercetin was evaluated with isobologram analysis. Doxorubicin and quercetin inhibited the growth of MCF-7 cells significantly. Doxorubicin and quercetin respectively had IC₅₀ of 21 μM and 103 μM. The interaction of doxorubicin and quercetin were characterized by the amount of doxorubicin IC₅₀ equivalent and quercetin IC₅₀ equivalent less than 1 and the point-intercept of each IC₅₀ notation equivalent plotted on the graph below the additive line. Analysis of isobolograms indicated that the interaction doxorubicin and quercetin in each of the ratios had synergy. Quercetin can be considered to be in a combination with</p> |
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