Uji aktivitas penghambatan senyawa 4-[(E)-2-(4-Okso-3-fenilkuinazolin-2-il)etenil] benzensulfonamida terhadap Siklooksigenase-2 (COX-2) = inhibitory activity assay of 4-[(E)-2-(4-Oxo-3-phenylquinazolin-2-il)ethenyl] benzensulfonamide on Cyclooxygenase-2 (COX-2)

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Abstrak

Penelitian aktivitas penghambatan senyawa 4-[(E)-2-(4-okso-3-fenil-kuinazolin-2-il)etenil]benzensulfonamida terhadap siklooksigenase-2 (COX-2) telah dilakukan untuk menentukan aktivitas senyawa 4-[(E)-2-(4-okso-3-fenil-kuinazolin-2-il)etenil]benzensulfonamida dalam menghambat secara selektif enzim COX-2.
Pengujian aktivitas dilakukan menggunakan kit COX (ovine) Inhibitor Screening Assay, dimana prostaglandin (PG) yang dihasilkan ditentukan melalui metode Enzyme Immunoassay (EIA). Selanjutnya diukur menggunakan microplate reader pada 415 nm. Persen inhibisi senyawa 4-[(E)-2-(4-okso-3-fenil-kuinazolin-2-il)etenil]benzensulfonamida pada konsentrasi 1, 5, 10, dan 20 M berturut-turut yaitu 19,50; 33,62; 37,29; dan 42,22. Persen inhibisi senyawa pembanding pertama Aspirin pada konsentrasi 1, 10, 25, dan 50 M berturut-turut yaitu 3,19; 43,50; 50,56; dan 55,51. Persen inhibisi senyawa pembanding kedua Celecoxib pada konsentrasi 0,01; 0,1; 1; dan 10 M berturut-turut yaitu 15,99; 38,91; 52,50; dan 81,51. Perbandingan persen inhibisi ketiga senyawa tersebut pada konsentrasi yang sama yaitu 10 M menunjukkan Celecoxib memiliki aktivitas penghambatan COX-2 tertinggi, sedangkan senyawa uji 4-[(E)-2-(4-okso-3-fenil-kuinazolin-2-il)etenil]benzensulfonamida memiliki aktivitas penghambatan COX-2 terendah dan nilai IC50-nya tidak dapat diperoleh karena dari empat konsentrasi larutan uji yang dianalisis, tidak ada yang menghasilkan persen inhibisi melebihi 50%.
.....Research on the inhibitory activity of compound 4-[(E)-2-(4-oxo-3-phenylquinazolin-2-yl)ethenyl]benzensulfonamide on cyclooxygenase-2 (COX-2) was performed to determine the activity of the compound 4-[(E)-2-(4-oxo-3-phenylquinazolin-2-yl)ethenyl]benzensulfonamide in selectively inhibiting COX-2 enzyme.
Activity assays performed using the COX (ovine) Inhibitor Screening Assay kit, in which prostaglandin (PG) that was produced, determined using Enzyme Immunoassay (EIA) method. Next, PG was measured using microplate reader at 415 nm. Percent inhibition of compound 4-[(E)-2-(4-oxo-3-phenylquinazolin-2-yl)ethenyl]benzensulfonamide at concentrations of 1, 5, 10, and 20 M respectively is 19,50; 33,62; 37,29; and 42,22. Percent inhibition of the first comparator compound Aspirin at concentrations of 1, 10, 25, and 50 M respectively is 3,19; 43,50; 50,56; and 55,51. Percent inhibition of the second comparator compound Celecoxib at concentrations of 0,01; 0,1; 1 and 10 M respectively is 15,99; 38,91; 52,50; and 81,51. Comparison of percent inhibition of all three compounds at the same concentration of 10 M showed that Celecoxib has the highest inhibitory activity on COX-2, while the test compound 4-[(E)-2-(4-oxo-3-phenyl-quinazolin-2-yl)ethenyl]benzensulfonamide have the lowest COX-2 inhibitory activity, and the IC50 value can not be obtained because from the four concentrations of test solutions analyzed, none of which produce over 50% of percent inhibition.