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Studi pembentukan dna adduct 8 hidroksi 2 deoksiguanosin 8 ohdg dari senyawa propil galat pg dan 2 6 di tert butil p benzoquinon bht quinon terhadap calf thymus dna dan 2 deoksiguanosin yang dimediasi oleh cupri klorida secara in vitro = In vitro study of formation of 8 hydroxy 2 deoxyguanosine 8 ohdg in calf thymus dna and 2 deoxyguanosine treated with propyl gallate pg and 2 6 di tert butyl p benzoquinone bht quinone mediated by cupric chloride

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Abstrak

[ABSTRAK
Kerusakan oksidatif DNA yang disebabkan oleh propil galat (PG) dan 2,6-di-tertbutil-p-benzoquinon (BHT-Quinon, metabolit BHT), dianalisis dari pembentukan DNA adduct, 8-hidroksi-􀀕􀂶-deoksiguanosin (8-OHdG), terhadap Calf thymus 􀀧􀀱􀀤􀀃􀁇􀁄􀁑􀀃􀁅􀁄􀁖􀁄􀀃􀁗􀁘􀁑􀁊􀁊􀁄􀁏􀀃􀀧􀀱􀀤􀀏􀀃􀀕􀂶-deoksiguanosin (dG) secara in vitro. PG dengan dimediasi oleh CuCl2 menyebabkan peningkatan 8-OHdG terhasap Calf thymus DNA sebesar 9,17 kali lebih besar dibandingkan terhadap kontrol (DNA tanpa perlakuan). Dengan adanya CuCl2 pada konsentrasi 1,28.10-5 M, rasio pembentukan 8-OHdG dari hasil interaksi antara dG dengan PG pada berbagai variasi konsentrasi (20 􀂱 150 ppm) berkisar antara 75,50 􀂱 312,06 8-OHdG terhadap 105 dG. Pembentukan 8-OHdG tersebut, meningkat dengan bertambahnya konsentrasi PG dari 20 􀂱 80 ppm, kemudian mulai menurun dengan bertambahnya konsentrasi PG. BHT-quinon, dengan adanya CuCl2 menyebabkan peningkatan 8-OHdG terhadap Calf thymus DNA sebesar 0,05 kali dibandingkan kontrol (DNA tanpa perlakuan). Analisis menggunakan LC-MS/MS dilakukan untuk mengidentifikasi 8-OHdG, dengan puncak induk (M+. + 1) 284 dan memiliki dua fragmen utama m/z 167,9 dan m/z 139,9.
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ABSTRACT>/b>
Oxidative DNA damage caused by propyl gallate (PG) and 2,6-di-tert-butyl-pbenzoquinone (BHT-Quinone, a metabolite of butylated hydroxytoluene 􀂱 BHT), was evaluated by measuring the formation of DNA adduct, 8-hydroxy-􀀕􀂶-deoxyguanosine (8-OHdG), in Calf thymus DNA and DNA base, 􀀕􀂶-deoxyguanosine (dG). PG mediated with CuCl2 increased 8-OHdG formation in Calf thymus DNA 9.17 fold from control (DNA without treatment). In the present of CuCl2 1.28.10-5 M, ratio 8-OHdG resulted from interaction of dG with PG at various concentration (20 􀂱 150 ppm), was ranged from 75.50 􀂱 312.06 8-OHdG

per 105 dG. This formation was increased by PG in a concentration-dependent manner ranged from 20 ppm up to 80 ppm, then decreased upon increasing the PG concentration. Meanwhile, BHT-quinone increased 0.05 fold from control (DNA without treatment) in the presence of CuCl2. LC-MS/MS analysis was performed to identify molecular structure of 8-OHdG, which had base peak (M+. + 1) 284 and had two main fragment at m/z 167.9 and m/z 139.9., Oxidative DNA damage caused by propyl gallate (PG) and 2,6-di-tert-butyl-pbenzoquinone
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