Studi pembentukan dna adduct 8-hidroksi-2 -deoksiguanosin 8-ohdg menggunakan tert-butyl hydroquinone t-bhq secara in vitro melalui reaksi fenton like = In vitro study of dna adduct 8-hydroxy 2 -deoxyguanosine 8-ohdg formation with tert butyl hydroquinone t bhq through fenton like reaction

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Abstrak

Pada penelitian ini dilakukan studi pembentukan DNA adduct 8-Hidroksi-2';-Deoksiguanosin 8-OHdG sebagai biomarker kerusakan DNA dengan mereaksikan basa DNA 2';-deoksiguanosin dengan t-BHQ melalui Fenton Like Reaction Cr III dan H2O2 pada variasi suhu 37°C dan 60°C, pH 7,4 dan pH 8,4, dengan waktu inkubasi 7 jam dan 12 jam. Hasil adduct dianalisis menggunakan instrumen HPLC reversed phase dengan detektor UV pada panjang gelombang 254 nm. Pembentukan DNA Adduct 8-OHdG dari senyawa t-BHQ terdeteksi pada reaksi 2'dG dan t-BHQ pada suhu 60°C waktu inkubasi 12 jam, reaksi antara 2'dG, Cr III terdeteksi pada waktu inkubasi 7 jam, pH 8,4, 37°C, pada suhu 60°C pH 7,4 dan 8,4 serta waktu inkubasi 12 jam pada suhu 37°C dan 60°C. Reaksi antara 2'dG, t-BHQ, H2O2 hanya terdeteksi pada suhu 60°C waktu inkubasi 12 jam, dan reaksi antara 2'dG, Cr III, H2O2, dan 2'dG, t-BHQ, Cr III, serta 2'dG dengan reaksi Fenton terdeteksi baik pada waktu inkubasi 7 dan 12 jam.

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ChemistryTitle In Vitro Study of DNA Adduct 8 Hydroxy 2' Deoxyguanosine 8 OHdG Formation with Tert Butyl Hydroquinone t BHQ Through Fenton Like Reaction In this research, DNA adduct formation of 8 hydroxy 2 39 Deoksiguanosin 8 OHdG as biomarkers of DNA damage which conducted by reacting the DNA bases 2'-deoxyguanosine base DNA with t BHQ through the Fenton Like Reaction Cr III and H2O2 with variation of temperature 37°C and 60°C, pH pH 7,4 and pH 8,4, and incubation time 7 hours, and 12 hours studied. The adduct results were analyzed using instruments reversed phase HPLC with UV detector at a wavelength of 254 nm. The formation of DNA Adduct 8 OHdG of t BHQ compound is detected in the reaction of 2'dG, t BHQ at the temperature of 60°C with incubation time at 12 hours, reaction of 2'dG, Cr III is detected when incubation time at 7 hours, pH 8,4 and temperature at 37°C, when the temperature at 60°C with pH 7,4 and 8,4 and when incubation time is at 12 hours with the temperature at 37°C and 60°C. Reaction of 2' dG, t BHQ, H2O2 only detected at the temperature of 60 C with incubation time at 12 hours, and the reaction of 2'dG, Cr III, H2O2, and 2'dG, t BHQ, Cr III, also 2'dG with Fenton reaction are detected either when incubation time at 7 and 12 hours.