

# Studi Pembentukan DNA Adduct Sebagai Biomarker resiko Kanker akibat paparan Tri Kloro Etilen Secara in Vitro pada Deoksi Guanosin (dG) dan in vivo pada tikus (*Rattus norvegicus*) = Study of DNA Adduct Formation as a Cancer Risk Biomarker due to Tri Chloro Ethylene Exposure in Vitro to Deoxy Guanosine (dG) and in vivo in mice (*Rattus norvegicus*)

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## Abstrak

Pada penelitian ini, dilakukan identifikasi pembentukan DNA adduct 8-hidroksi deoksiganosin (8-OHdG) sebagai biomarker penyebab kanker yang terbentuk dari paparan trikloro etilen dan ion logam Cu (II) secara in vitro dan in vivo. Paparan TCE 200 ppm terhadap deoksiganosin terbukti dapat memicu pembentukan 8-OHdG setelah inkubasi selama 6 jam. Penambahan ion Cu (II) dan H<sub>2</sub>O<sub>2</sub> dalam inkubasi terbukti meningkatkan pembentukan 8-OHdG. Pada Studi in vivo, DNA adduct 8-OHdG Terdeteksi pada urin seluruh tikus percobaan. Paparan TCE terbukti meningkatkan kadar 8-OHdG yang diamati. Kadar DNA adduct dalam urin juga terlihat meningkat secara signifikan pada kelompok tikus yang diberikan paparan TCE dan Cu (II). Penelitian ini memberikan pemahaman baru pada pembentukan DNA-adduct dari senyawa kimia yang umum dipakai masyarakat.

.....In this study, The formation of DNA adduct 8-hydroxy deoxiguanosin (8-OHdG) as a cancer-causing biomarker formed from exposure to trichloro ethylene and Cu (II) metal ions in vitro and in vivo was identified. Exposure to TCE 200 ppm to deoxiguanosin has been shown to trigger the formation of 8-OHdG after 6 hours of incubation. The addition of Cu (II) and H<sub>2</sub>O<sub>2</sub> was shown to increase the formation of 8-OHdG. DNA adduct 8-OHdG was detected in the urine of all mice, including the control group. This phenomenon indicates that oxidative stress conditions occur naturally in the metabolic system. exposure to TCE was shown to increase the 8-OHdG levels. The levels of DNA adduct in urine were also seen to be significantly increased in the group of mice exposed to TCE and Cu (II). This research provides a new understanding on the formation of DNA-adducts from chemical compounds commonly used by the public.