ABSTRAK

Analisis Efek Lama Paparan Dan Suhu
Terhadap Kualitas dan Kuantitas DNA Pada Bercak Darah

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Ilmu Forensik merupakan suatu pengaplikasian disiplin pengetahuan kedokteran ataupun pengetahuan lainnya yang berguna untuk menganalisa suatu bukti dalam proses penyelidikan. Bercak Darah merupakan salah satu barang bukti yang sering ditemukan di TKP. Terkadang di suatu TKP ditemukan bercak darah pada permukaan suatu benda seperti kayu, lantai maupun kain yang berupa kain katun. Tujuan penelitian ini menganalisis efek lama paparan dan suhu yang terjadi terhadap kualitas dan kuantitas DNA pada bercak darah. Jenis penelitian yang digunakan adalah ekperimental laboratorium dengan rancangan penelitian experimental with control.

Sampel sebanyak 48 bercak darah di kain katun pada masing-masing kelompok perlakuan. Hasil pengukuran rerata kadar DNA sidik bibir (lip prints) menggunakan uv-spectrophotometer pada suhu ruangan (31.5^0-33.5^0C) selama 0 (control), 20, 30 dan 40 hari yaitu 633.5 µg/ml, 197.75 µg/ml, 136.67 µg/ml dan 139.42 µg/ml, dan pada suhu lingkungan (30.8^0-31.6^0 C) selama 0 (control), 20, 30 dan 40 hari berurutan yaitu 421.17 µg/ml, 144.67 µg/ml, 140 µg/ml, dan 120.17 µg/ml. Rerata kemurnian DNA bercak darah berkisar antara 1,12-1,56. Hasil uji statistik Repeated Measure Anova menunjukkan bahwa ada perbedaan efek lama paparan pada bercak darah terhadap kualitas DNA dengan nilai sig. = 0,000, tidak terdapat efek suhu pada bercak darah terhadap kualitas DNA dengan nilai sig. = 0,122, dan tidak terdapat interaksi efek lama paparan dan suhu pada bercak darah terhadap kualitas DNA dengan nilai sig. = 0,73. Visualisasi hasil elektroforesis bercak darah pada lokus D7S820 dan D18S51 menghasilkan pita DNA sebesar 100 % positif.

Kata kunci : lama paparan, suhu, bercak darah, kualitas DNA, kuantitas DNA

ABSTRACT

The effect of length exposure and temperature on quality and quantity of DNA on bloodstains

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Forensic science is a useful application of medical knowledge or other knowledge for evidence analysis in the process of investigation. Blood spots are a type of evidence which is frequently found at crime scenes. Sometimes at a crime scene, blood spots are found on the surface of an object such as wood, floor or fabric such as cotton fabric. The purpose of this study was to analyze the effect of exposure time and temperature on the quality and quantity of DNA in blood spots. This study was laboratory experimental research with experimental research design and control.

Samples were 48 bloodstains on cotton fabric in each treatment group. The mean DNA levels of lip print using a uv-spectrophotometer at room temperature (31.5^0-33.5^0C) for 0 (control), 20, 30 and 40 days were 633.5 µg / ml, 197.75 µg / ml, 136.67 µg / ml and 139.42 µg / ml, and those at ambient temperature (30.80-31.60 C) for 0 (control), 20, 30 and 40 days were 421.17 µg / ml, 144.67 µg / ml, 140 µg / ml, and 120.17 µg / ml, respectively. The mean purity of blood spot DNA ranged from 1.12 to 1.56. The results of the Repeated Measure Anova statistical test showed that there was a difference in the effect of the length of exposure to blood spots on the quality of DNA with the sig value. = 0.000, there was no effect of temperature on bloodstains on DNA quality with a sig value. = 0.122, and there was no interaction between the effect of length of exposure and temperature on blood spots on DNA quality with the sig value. = 0.73. Visualization of the results of electrophoresis of blood spots at loci D7S820 and D18S51 resulted in a 100% positive DNA band.

Keywords : exposure time, temperature, blood spots, DNA quality, DNA quantity