BASECLEAR
FOR 100% DNA RESULTS

52613 report

Forensic DNA analysis (STR-testing) of human blood treated with Lumiscene.

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Contents

1. Purpose

Testing the amount of human DNA and the quality of forensic DNA-profiles from blood treated with Lumiscene solution(s).

2. Materials and methods

Baseclear was provided with swabs which were pretreated according to Loci Forensics B.V. in the following way:
20 µl of 15 minute old human blood, collected in a DB Vacutainer ® was pipetted on the cotton tips of FAB-Swabs. The samples where dried over 48 hour at 20 Celsius, 50 % humidity. After 48 hours a 50 µL of Lumiscene Solution (100% or 400%), or nothing (for a blanco sample) was pipetted on the cotton tips of the samples. Immediately thereafter, the FAB-Swabs where covered with the breathable transport tube and sealed according to the manual of the manufacturer. After this the swabs where dried over 48 hours at 20 Celsius and 50% humidity before sending it to BaseClear. Table 1 shows the composition of the tested samples

Table 1 samples used

Sample ID (as supplied by Loci Forensics B.V.)	Concentration of Hydrogen Peroxide in %	Concentration of Urea in %
1. Blanco 1	0.00	0.00
2. 100% Lumiscene	0.12	0.30
3. 100% Lumiscene	0.12	0.30
4. 100% Lumiscene	0.12	0.30
5. Blanco 5	0.00	0.00
6. 100% Lumiscene	0.12	0.30
7. 100% Lumiscene	0.12	0.30
8. 100% Lumiscene	0.12	0.30
9. 400% Lumiscene	0.48	1.20
10. 400% Lumiscene	0.48	1.20

DNA was extracted from the swabs using the Qiamp investigator kit (Qiagen), and the amount of human DNA was assessed using the QuantifilerTM Real-Time PCR amplification kit, (Applied Biosystems). All DNA extracts were amplified with the AmpFℓSTR® NGM™ PCR Amplification Kit

according to a procedure as accredited under our forensic standards, run on an ABI 3130XL DNA analyser and analysed in GeneMapper IDX.
Negative (H_2O) and positive controls (control Human DNA) were also used following our accredited procedure in human DNA identification.

3. Results and discussion

The amount of human DNA that could be recovered from blood on the swabs is given in table 2. All samples yielded full and matching, single donor DNA-profiles. No artifacts, or other side effects were observed in the DNA-profilies of the Lumiscene treated samples. Negative and positive controls did meet the requirements.

Table 2: Results summary

Sample ID	Concentration of Hydrogen Peroxide/ Urea in %	DNA concentration (ng/µL)	Full DNA-profile?
1. Blanco 1	0.00/0.00	1.96	Yes
2. 100% Lumiscene	0.12/0.30	2.21	Yes
3. 100% Lumiscene	0.12/0.30	0.71	Yes
4. 100% Lumiscene	0.12/0.30	1.17	Yes
5. Blanco 5	0.00/0.00	1.06	Yes
6. 100% Lumiscene	0.12/0.30	2.19	Yes
7. 100% Lumiscene	0.12/0.30	1.09	Yes
8. 100% Lumiscene	0.12/0.30	1.24	Yes
9. 400% Lumiscene	0.48/1.20	1.14	Yes
10. 400% Lumiscene	0.48/1.20	2.97	Yes

4. Conclusions

No negative effects were observed in the Lumiscene samples on the amount of human DNA, or on the quality of the DNA-profiles from undiluted whole blood samples.

5. Enclosures

Results of the human identity testing: 10 pages plots with the DNA-profiles of all samples