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DNA Extraction Using *forensicGEM™ Saliva*

Zygem Quick-Start Guide

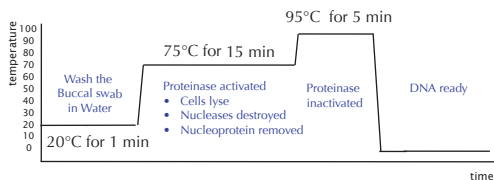
forensicGEM™ Saliva

forensicGEM™ is specifically formulated and validated for forensic DNA extractions. Validation data can be obtained from www.zygem.com

The following method is recommended for extracting DNA from buccal swabs.

- All manipulations should be performed in a clean-room or a PCR hood.
- Use only certified DNA-free tubes and reagents.
- Wash any equipment that will come into contact with the sample in 0.05% hypochlorite bleach. Rinse thoroughly with DNA-free water.

Procedure Outline



Extraction Method

1. Wash the buccal swab in the minimum amount of DNA-free water to cover the swab. Typically, a cotton swab requires 400-500 µl. Use a rolling action against the tube sides and squeeze the swab against side to remove as much of the liquid as possible.
2. In a thin-walled PCR tube add:
20 µl of the eluate.
10 µl of 10x Buffer **BLUE**
69 µl of DNA free water
1 µl *forensicGEM™*

Make sure the suspension is agitated prior to adding

3. Incubate at 75°C for 15 minutes
4. Incubate at 95°C for 5 minutes

A thermal cycler can be used for this step

The sample is now ready for analysis.
Typically, the method above yields DNA at 0.5 - 2 ng / µl.

Technical tips for sample management

- *forensicGEM™ Saliva* is a preparative method for DNA extraction. The *forensicGEM™* method lyses cells and removes nucleoproteins from the DNA. Extracted DNA can be used for many types of genotyping including SNP and STR analysis as well as quantitative, multiplex and end-point PCR.
- There is no concentration step in the procedure and so the final concentration is dependent on: 1) The vigor with which the swab was taken. 2) The type of swab. 3) The volume of buffer used to wash the swab. We recommend using the smallest amount of buffer required when washing the swab in order to maximise the DNA concentration.
- DNA extracted using *forensicGEM™* is largely single-stranded because of the 95°C heat step.
- For accurate yield assessment, a qPCR is recommended. The DNA produced by *forensicGEM™* is approximately 90% single-stranded. If standard fluorescent chelating dyes are to be used for quantification, then this factor should be taken into consideration. Yield measurement using fluorescent chelating dyes can also be affected by the type of swab used for collecting the sample. Some swabs release agents that react with the dyes.
- As with any preparative method for nucleic acid extraction, best results are obtained when samples are handled at 4°C, or on ice, before and after extraction.
- For long term storage of the extracted DNA, add TE buffer to 1x (10 mM Tris, pH 7.5, 1 mM EDTA) and store at -20°C.
- The *forensicGEM™* reagents are stable at 4°C but after tubes have been opened and for longer term storage, reagents should be stored at -20°C.
- Zygem Corp Ltd. Research Use Only. All products are subject to a limited use license. See the product documentation and information at www.zygem.com

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