

Maximizing DNA yield with the Oragene® self-collection kit[†]

1. Collect the recommended volume of saliva

The recommended volume of saliva is 2 mL. The volume of the Oragene® solution in the kit is 2 mL. Therefore the total volume of 2 mL of saliva plus the Oragene solution should be 4 mL.

2. Expect variation in DNA yield between different donors

The median yield of DNA is 110 µg from a 2 mL saliva sample but the yield may range from a minimum of 15 µg to more than 300 µg. Even with the same donor, the yield may change from day to day. The median yield for any given study may depend on the population that is being sampled from.

3. Finish spitting within 30 minutes

The full saliva sample should be collected within 30 minutes and the Oragene kit should be capped immediately. Waiting longer than 30 minutes may decrease the yield and quality of the DNA.

4. Take an aliquot for DNA processing after incubation at 50°C

Saliva is quite viscous and can trap DNA. The 50°C incubation step releases DNA from the Oragene/saliva sample. Taking an aliquot prior to the incubation step may give a lower DNA yield.

5. Add the correct amount of alcohol to precipitate the DNA

It is important to add the correct amount of ethanol. Ensure you are adding the amount of ethanol specified in the extraction protocol. The aqueous phase should be mixed gently and thoroughly with the ethanol to ensure complete precipitation of the DNA. A visible clot of DNA will usually be seen as the ethanol mixes with the aqueous phase. Adding more than 1 volume of ethanol and/or using cold ethanol will not improve DNA recovery and may increase the amount of impurities that precipitate.

6. Allow a sufficient period of time to rehydrate the DNA

DNA extracted from Oragene/saliva samples is of high molecular weight and may take some time to dissolve completely in buffer. The rehydration solution should be a low salt buffer such as TE. We recommend overnight incubation at room temperature to ensure complete rehydration of the DNA. For best results, the final concentration of DNA should be less than 200 µg/mL (200 ng/µL).

Drying the sample after ethanol precipitation is not recommended because this can significantly increase the rehydration time. The rehydration time may be shortened by incubating at 50°C for 10 minutes. Once the DNA is dissolved, you should briefly vortex or pipet the sample several times prior to taking an aliquot.

[†] Saliva samples were collected with Oragene®·DNA or Oragene®·DISCOVER.



7. Quantifying the DNA

This method is more accurate than absorbance. Quantification by absorbance does not discriminate between DNA and RNA resulting in overestimation of DNA yield. Overestimation of DNA concentration may impact performance on downstream applications. DNA should be quantified by fluorimetry using a fluorescent dye such as SYBR® Green I. A fluorimetry protocol is available on the support section of our website at www.dnagenotek.com.

Technical support is available Monday to Friday (9h00 to 17h00 EST):

- Toll-free (North America): 1.866.813.6354, option 6
- All other countries: 613.723.5757, option 6
- Email: support@dnagenotek.com

Oragene®-DNA is not available for sale in the United States.

Oragene®-DISCOVER is for research use only, not for use in diagnostic procedures.

*Oragene is a registered trademark and DNA Genotek is a trademark of DNA Genotek Inc. All other brands and names contained herein are the property of their respective owners.
All DNA Genotek protocols, white papers and application notes, are available in the support section of our website at www.dnagenotek.com.