



Long-term storage of Oragene®/saliva samples†

Unpurified Oragene/saliva samples	Purified DNA from Oragene/saliva samples
1. Unpurified samples may be stored at room temperature for up to 5 years.	1. Store purified DNA in 1× TE buffer (10 mM Tris-HCl, 1 mM EDTA, pH 8.0 or greater).
2. Freezing samples at -20°C is best for indefinite long-term storage because it minimizes evaporation of the liquid sample.	2. Store DNA frozen at -20°C.
3. To reduce storage space, samples may be split into aliquots and stored in microcentrifuge tubes. To ensure sample homogeneity, heat the entire sample for 2 hours at 50°C before aliquoting ¹ .	3. Minimize the number of freeze-thaw cycles by splitting the DNA into multiple aliquots.

Table 1: Oragene/saliva sample long-term storage recommendations.

Introduction

The preservation and storage of DNA samples is an important consideration for molecular epidemiology and population studies. Table 1 summarizes recommendations for the long-term storage of purified and unpurified saliva samples collected with the Oragene self-collection kit. This bulletin also discusses the rationale for these recommendations.

Storage of unpurified Oragene/saliva samples

Storage at room temperature

DNA from saliva is stable in the Oragene self-collection kit for up to 5 years². This stability is achieved with proprietary reagents that inactivate bacteria and nucleases in saliva and minimize chemical hydrolysis of DNA.

Frozen storage

Oragene/saliva samples may also be stored at -20°C or -80°C. Samples may undergo at least three freeze-thaw cycles with no evidence of DNA degradation. Although the Oragene kit is designed to ensure a tight seal, frozen storage may further reduce evaporation of the liquid medium during long-term storage.

Aliquots in microcentrifuge tubes

The Oragene kit is designed for user-friendly saliva collection from donors. However, in the lab, storage in more compact tubes may be preferable. To reduce storage space, the Oragene/saliva sample may be split into 4 aliquots of 1 mL each and stored in 1.5 mL screw-top microcentrifuge tubes. It is advisable to use tubes with O-rings to ensure a tight seal and minimize long-term evaporative loss.

Storage of purified DNA from Oragene/saliva samples

Preventing DNA degradation

There are three major causes of DNA degradation in a purified sample³. Samples may be accidentally contaminated by bacteria, but storage at -20°C or lower will minimize bacterial metabolism and the release of nucleases. DNases may be inadvertently introduced from the skin, but this can be minimized by wearing gloves when handling samples. Repeated cycles of freezing and thawing may also contribute to DNA degradation. This may be minimized by splitting the purified DNA into multiple aliquots and thawing one at a time.

† Saliva samples were collected with Oragene®•DNA or Oragene®•DISCOVER.

