

## Sputum DNA Collection, Preservation and Isolation Kit –

Norgen’s Sputum DNA Collection, Preservation and Isolation Kit is an all-in-one solution designed for 1) simple and non-invasive sputum collection; 2) preservation of DNA in sputum samples at ambient temperature; and 3) isolation of high quality DNA within a laboratory setting. The Sputum DNA Collection and Preservation Kit contains 50 Individual Sputum DNA Collection and Preservation Devices, as well as the required reagents for the subsequent laboratory isolation of the sputum DNA from the preserved samples.



Each of the 50 individual kits consists of three components: (1) Sputum Collection Tube; (2) Collection Funnel and; (3) Norgen’s Sputum DNA Preservative contained within sealed ampoules. Sputum samples (either induced or non-induced) are collected by the patient by first rinsing the mouth thoroughly with water. Following this step the patient must then cough deeply to loosen sputum and then expectorate/spit inside the Collection Funnel which has been assembled with the Collection Tube. Following collection of the sputum sample, the Collection Funnel is removed and the contents of the Preservative ampoule are then added and mixed with the collected sputum and the Collection tube is labeled. The Sputum Collection Tube is subsequently sent to the laboratory for DNA isolation and analyses. The sputum DNA in preserved samples is stable for more than two years at ambient temperature. The kit is ideal for collecting, preserving and isolating DNA samples for numerous research based applications, as well as epidemiological and population studies.

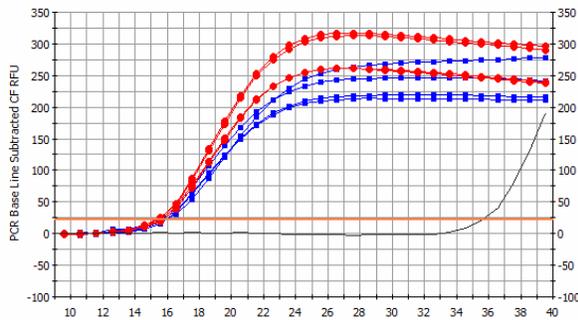
### **SPUTUM DNA PRESERVATIVE**

Norgen’s Sputum DNA Preservative is an aqueous storage buffer designed for rapid cellular lysis and subsequent preservation of DNA from fresh specimens. The preservative prevents the growth of Gram-negative and Gram-positive bacteria and fungi, and inactivates viruses allowing the samples to be handled and shipped in a safer manner. In addition, the samples are preserved allowing their storage and shipment at ambient temperature, eliminating the requirement for refrigeration or freezing, decreasing costs. The components of the preservative will allow the collected samples to be stored for more than 2 years without any detectable DNA degradation.

### Sputum DNA Collection, Preservation and Isolation Kit

Non-invasive sample collection	Higher donor compliance and lower cost
Convenient, all-in-one kit	Sputum sample collection, preservation, transportation and DNA isolation all with one convenient, affordable kit
Safe sputum shipping	The provided Sputum DNA Preservation Buffer prevents the growth of Gram-negative and Gram-positive bacteria and fungi, and also inactivates viruses allowing the resulting samples to be handled and shipped safely.
DNA is stable for years at room temperature	Sputum DNA preserved with Norgen’s Sputum DNA Preservation Buffer is stable for more than 2 years at room temperature.
High quality DNA	Purified DNA is of the highest quality and free from inhibitors, and can be used in sensitive downstream applications including PCR, qPCR, sequencing, SNP analysis, microarrays, and Southern Blot Analysis

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**Figure 1. Real Time PCR Amplification of Sputum DNA.** Sputum samples were collected from donors using Norgen’s Sputum DNA Collection, Preservation and Isolation Kit, and sputum DNA was subsequently isolated from the samples over time (0, 1 week, 2 weeks and 4 weeks) from samples stored at either room temperature or 55°C using the supplied protocol. One hundred nanograms of each sputum DNA sample was then used as the template in a real-time PCR reaction using 2X SYBR Green/Fluorescein qPCR Master Mix (Norgen Biotek, Cat# 28109) and 5s gene specific primers. All samples showed successful amplification, indicating the high quality of the purified DNA from preserved samples. Sputum DNA is both preserved over time and is suitable for use in downstream detection assays including real-time PCR.

Preservation condition	Sample	Ct values
Room temperature	Day 0	16.0
	Week 1	15.5
	Week 2	15.7
	Week 4	15.9
55°C	Day 0	15.4
	Week 1	15.4
	Week 2	15.8
	Week 4	15.7
	No template control	35.7

**Figure 2. Stability of DNA in Norgen’s Sputum DNA Preservative.** The DNA isolated from the sputum samples stored at room temperature and 55°C at the various time points was used as the template in a real-time PCR reaction to detect the 5s gene. As it can be seen all the DNA samples were successfully amplified. Furthermore, the quality of the sputum DNA stored at both temperatures did not change from time 0 to 4 weeks, as indicated by the fact that the Ct values remained consistent. The sputum samples stored at 55°C can allow us to extrapolate results based on accelerated-aging, and therefore the samples stored at 55°C for 4 weeks show equal stability to saliva preserved for 1 year at room temperature (24°C). Therefore, based on the successful PCR results for samples stored at 55°C shown above, sputum samples stored in Norgen’s Sputum DNA Preservation Buffer are stable at room temperature for at least 1 year.

Cat #	Description	Quantity
RU46100	Sputum Collection, Preservation and Isolation Kit	50 Devices