

Device and method for drying biological sample on substrate

Invention Summary

Methods for drying biological samples on a substrate for preservation and a device for drying and preserving biological samples.

Background

Biological sample storage and preservation is desirable as the preserved sample can be used for various applications, such as analyte detection, sensing, forensic and diagnostic applications, genome sequencing, whole-genome amplification, and the like. The sample storage and preservation require sample drying on a substrate.

Some of the currently used devices for preservation of samples on paper substrates can be slow or time consuming. An incomplete or slow drying affects the stability of the sample which could generate inconsistent results in subsequent analyses of the preserved samples. A time consuming method of drying a sample limits application of the substrate to use in a lab facility or other time sensitive applications.

A number of portable heat sources, particularly for applications to the heating of food are known. The portable heat sources have a number of disadvantages, including the low efficiency and formation of flammable and/or toxic by-products that may be harmful for biological samples. Chemical heat pads or chemical heaters are also known to evaporate various solvents, however the chemical heaters employ corrosive chemicals, for example, the reaction of sodium hydroxide with hydrochloric acid.

A substrate with a heat source, which is safe during operation, storage and transport, convenient to use and efficient to generate required heat for biological sample drying is highly desirable. Accordingly, there is a need for a method and a device that dries a biological sample in a minimal time without affecting the quality of the sample for subsequent storage and analysis.

Technology

This Cytiva invention provides methods and devices for drying biological sample for preservation or storage. The methods allow drying of a biological sample disposed on a substrate made of a sample loading area and a heat source. The methods include activating the heat source present on the substrate for generating heat, heating the substrate followed by drying the biological sample deposited on the substrate. The methods use controlled heating of the substrate at high temperature to accomplish sample drying in minimal time without affecting the sample.

Inventors:

Christopher Puleo
John Nelson
Patrick Spooner
Ralf Lenigk

Patent family:

Granted: US9063041B2,
EP2925371B1

Cytiva Reference: 260600

Licensing Contact:

Louise Sarup
louise.sarup@cytiva.com