Cambrian gDNA Isolation from DBS Cards

Application Note



Neo Dried Blood Spots (DBS) represent an inexpensive method for long-term biobanking worldwide. They are gold mines for research for several human diseases, including those of metabolic, infectious, genetic, and epigenetic origin. However, the utility of DBS is restricted by the limited amount and quality of extractable biomolecules (including DNA), especially for genome-wide profiling. Degradation of DNA in DBS often occurs during storage and extraction. Using combinations of in-house-derived and modified DNA extraction kits, we developed a robust and efficient protocol, compatible with both manual and automated extractions.

Features

- The cards use ink compatible with all biological assays
- Each circle can hold up to 85µL of blood
- Dried samples can be stored for long-term use

Materials and Methods:

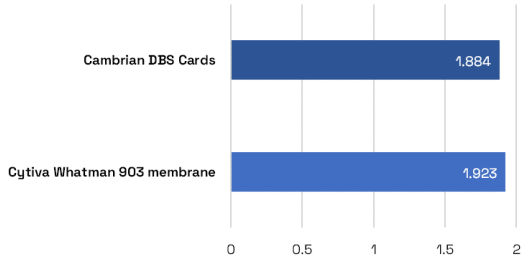
Blood cards (Whatman 903, FTA, Neo) are lysed with a Pretreatment Lysis Buffer and Proteinase K. Following lysis incubation, binding of DNA to Cambrian's CamBeads is achieved in the presence of a Binding Buffer on the automation.

Subsequent DNA isolation was performed. The isolation principle is based on the reversible adsorption of nucleic acids to paramagnetic Cambeads under appropriate buffer conditions.

DNA Extraction from DBS Cards

The quality of DNA was measured using two membrane types present on the Dried Blood Spot Cards.

	Cytiva		CBW	
	Yield (ng)	Purity	Yield (ng)	Purity
Sample 1	370	2.056	450	2.045
Sample 2	515	1.769	465	1.842
Sample 3	425	1.828	435	1.871
Sample 4	580	1.917	425	1.859
Sample 5	450	2.045	350	1.805



Comparision Graph of Average Purity (A 260/280) between Cytiva and Cambrian DBS membranes

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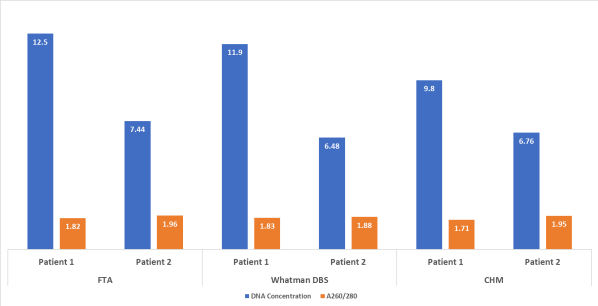
Performance Comparison against other DBS cards

DNA was extracted using Cambrian Bioworks' extraction kit from FTA and Whatman DBS Cards.





For free samples and demo requests:

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