Next Generation Dried Blood Spot Cards

What is improved in qDBS compared to standard DBS?

	Capitainer® qDBS technology	Standard DBS technology
1. Volume control	Metered Volume in exact DBS spot	Unknown volume in variable size spot
2. Sample handling	Precut, approved material, ready to use	Initial punch step necessary
3. Analyte distribution	Eluate independent (all blood used)	Varies due to subpunch location causing bias
4. Hematocrit	Sample volume not affected	Location dependent subpunch
5. Drying process	In protected card during shipping	3 hours -open air prior to shipping
6. Risk for contamination	Low, sample embedded and protected within card	High, sample exposed to surroundings and punching
7. Sample quality	Exact volume 100% or no sample	Varying with user skill level

Capitainer® qDBS spots are equivalent to conventional DBS cards based on Cotton linter material from Ahlstrom.

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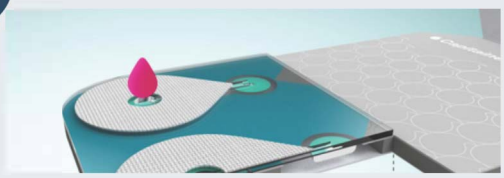
All *Capitainer*® blood sampling cards are built on our patented quantitative Dried Blood Spot, qDBS, technology. Learn below how it works!

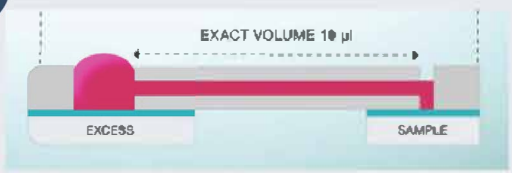
Our patended qDBS technology uses a combination of paper, polymer microfluidics and thin water-soluble membranes to meter a fixed volume of blood. After applying blood to the device, a metering channel automatically filled and the blood is transferred to the pre-cut DBS paper disc when the membrande dissolves.

1



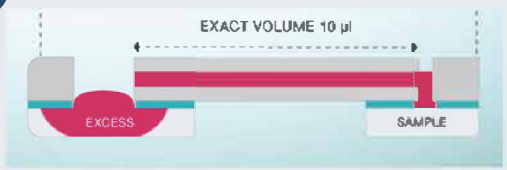
In *Capitainer*®*B*, the 2x10µL version, one blood drop is added to the inlet.

2



The blood drop fills the metering microcapillary with blood.

3



First, a thin dissolvable membrane opens up to remove excessive blood at the inlet.

4

Subsequently, the metered blood volume is transferred to the sample collection disk when the membrane at the outlet dissolves.

This way, an exact 10µL DBS spot is automatically generated regardless of the size of the applied blood drop.
If too little blood is added, the metering channel is not filled and no blood is transfered to the sample disc. A clear no sample.
The sample is allowed to dry forming a high quality DBS sample suitable for quantitative analysis is the laboratory.

In *Capitainer*®*B 50*, qDBS is applied in a single valve solution with filling mechanism from the side allowing for the application of multiple drops. Also here, the metered volume is emptied only when the channel is correctly filled.

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