The hemaPEN® is under development and the prototype device is supplied for research or investigational purposes only. This device is not for therapeutic or diagnostic use. Registration of hemaPEN as a Class 1 blood collection and storage device is scheduled for end of 2019.
hemaPEN provides a convenient sampling procedure for collection and storage of four identical dried blood spot (DBS) samples to drive information-rich decision making.

Unlike conventional DBS sampling tools, hemaPEN enables collection of an accurate and precise volume, and is designed to maintain sample integrity for quantitative analysis.

An easy-to-use sophisticated microsampling tool in the hands of non-analysts.

**Advanced microsampling technology**

Derived from capillary blood collection and the best of DBS technology, hemaPEN provides additional benefits for better patient outcomes.

**User friendly**
- Intuitive pen-like design
- Collect blood from any source
- Rapid sample collection (<20 seconds)
- Remote sampling

**Volumetric accuracy and precision**
- Capillary-based technology enables autonomous accurate collection
- Four replicates from a single source
- Eliminate analytically relevant hematocrit bias
- Enables quantitative analysis

**Sample integrity**
- Single use and tamper-resistant
- Contained sample to minimize contamination and prevent human contact
- Integrated desiccant enables consistent sample drying profile
- Dried format for simplified storage and logistics (no cold-chain)

**Simplified sample processing**
- Pre-punched discs
- DBS cartridge compatible with standard 96-well plate
- Entire collected sample goes directly into analytical workflow
- 2D barcode supports chain of custody
hemaPEN collects and stores volumetrically accurate and precise blood samples independent of blood hematocrit, user or batch.

- **Volumetric accuracy**: 2.74 µL ±5%
- **Inter-device precision**: <2.5%

Volumetric accuracy and precision is driven by end-to-end capillary collection.

Sample integrity

hemaPEN provides a consistent drying profile independent of environmental conditions.

- Drying efficiency assessed by measuring the change in weight of 4 x 3.5 mm discs, stored under different environmental conditions.
- Discs were 80% to 100% dry within one hour, and 100% dry within two hours, under all evaluated environmental conditions.

Figure 1. Volume of blood collected by hemaPEN, based on weight across different blood hematocrit levels, batch and user (n=6 hemaPENs per point)

Figure 2. Calculated volume based on dimensions (n=hemaPEN capillaries measured)

Figure 3. Drying state of DBS samples inside hemaPEN under three different storage conditions (n=42, 42 hemaPENs, two time points)
Trajan is building a suite of technologies and solutions around hemaPEN as a platform technology that can be applied to any microsampling workflow challenge:

- Synthetic substrates that can be functionalized to improve sample stability, reduce ubiquitous impurities of standard cellulose-based DBS papers, or streamline sample extraction
- Customizable cartridge design
- Custom analytical workflow integration or automation solutions

**hemaPEN**

**Precision microsampling**

hemaPEN provides a convenient sampling procedure for collection and storage of four identical dried blood spot (DBS) samples to drive information-rich decision making.

Visit www.hemapen.com or contact us to discuss your workflow challenges and evaluate hemaPEN.

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**Trajan Scientific and Medical**

**Science that benefits people**

Trajan is actively engaged in developing and delivering solutions that have a positive impact on human wellbeing. Our vision revolves around collaborative partnerships that improve workflows, delivering better results.