

Focus on your cells

PixCelli

M E D I C A L



CELL BASED DIAGNOSIS AT YOUR FINGERTIP

MAKE CELL-BASED DIAGNOSTIC SIMPLE

About PixCell

PixCell Medical Technologies is a privately held company developing **Cell-Based Diagnostic** devices for the **Point of Care** (POC).

PixCell's **Viscoelastic Focusing** and sample preparation propriety technology, presents a break-through in live cell diagnostics, allowing small sized, simple and inexpensive testers, which are accurate and robust.

PixCell Medical was founded by Prof. Herzberg, a leading figure in the biotech industry in Israel, and Dr. Bransky, an expert on microfluidics and the inventor of the technology.

PixCell's first product HemoScreen, a **Complete Blood Count (CBC)** system for the Point of Care, is expected to be CE marked at the beginning of 2013.

Technology Overview

PixCell Medical developed its core technology that allows **cell based diagnostic** at the **point of care**. The core technology is comprised of an **Analyzer** and **Single use Disposable Cartridge**.

The technology includes:

- **Viscoelastic Focusing** – a new physical phenomenon that was recently discovered at the Technion – Israel Institute of Technology, and is exclusively licensed for PixCell Medical. Viscoelastic Focusing causes cells, which are suspended in the patented fluid, to perfectly align i.e. focus so as to facilitate their optical detection and analysis.
- **Disposable Cartridge** – PixCell's patented self-contained cartridge enables whole blood sample collection, automated sample preparation including marking, staining and incubation.
- **Novel Microfluidic Chip** – propriety design allows cell flow and manipulation for the analysis.
- **Image Based Analysis** – advanced machine learning algorithms are used to process and analyze sample instantly.
- **Data Analysis and Reports** – presenting results to operator in simple graphical based reports and image archiving for post-test processing.



Applications

PixCell Medical is utilizing its **Viscoelastic Focusing** and microfluidic technology on a single use cartridge for various applications in the field of **Cell-Based Diagnostics**. Different types of Single use Cartridges are used for performing various types of tests.

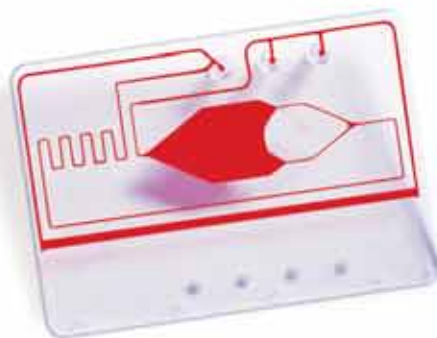
HemoScreen Analyzer and Cartridge for CBC

Complete Blood Count (CBC) is the most frequently used hematology test, with more than 200 million tests performed annually at the point of care (POC) in the US only. CBC is routinely performed in central hematology labs by large and costly machines which use relatively large blood samples.

HemoScreen CBC analyzer brings the laboratory to the physician's office and to the patient's home, to isolated communities, ambulances and even field units. Requiring only a minute blood sample and no maintenance, it is also ideal for newborns hematology assessment.

PixCell's technology provides over **20 standard CBC parameters** within 2-5 minutes, including **RBC** count, **RBC indices**, **absolute WBC** count, **WBC 5-diff** and **platelets parameters**. Only a few micro liters of blood collected from the finger using a standard lancet are needed.

The CBC tester has successfully passed preliminary clinical trials, demonstrating high accuracy and repeatability.



Future Cartridges

PixCell's technology platform can be utilized for various other tests which require cell staining / marking, processing and analyzing.

Different cartridge types are used, with the same Cell-Based Analyzer, for performing additional tests such as **Platelets Aggregation** and **Immuno-Based Diagnostics**.

- **Platelets Aggregation** – used in diagnosing and managing platelet and haemostatic disorders, in monitoring the efficacy of anti-platelet therapy, in assessing risk of bleeding and more. Platelets aggregation tests are essential in **personalized medicine** and Myocardial Infarction (MI) treatment and can be performed using PixCell's Analyzer and Platelets Aggregation test disposable cartridge.
- **Immuno-Based Diagnostics** – PixCell's technology allows simple robust cell diagnostic. **CD4+ Count and CD4+%** are examples of various biomarker based applications that become commonly used and can be performed using PixCell's Analyzer and CD4 test disposable cartridge. Additional application such as **TB, Malaria**, and **Cancerous cells** diagnostic can be performed by utilizing the same technology. PixCell's image analysis versatile capabilities allow using various biomarkers conjugated to nano-particles for cell based diagnostic



Advantages of PixCell Technology in the POC

- **Self Contained Disposable Cartridge** – self-contained disposable cartridge allows safe disposal and eliminates cross contamination risks.
- **Simple Use** – simple blood collection method, using standard finger prick, and automated sample preparation eliminates unexpected errors and the need for professional trained operator.
- **Small Volume of Blood** – only a small volume of blood is required for obtaining accurate results.
- **Miniature Size and Low Weight** – PixCell's analyzer is a portable tabletop unit which fits the environment of a GP office and allows ease of transportation.
- **Robust** – Viscoelastic Focusing physical phenomenon is robust and insensitive to external variable conditions, thus ensures accuracy and repeatability.
- **Low Cost** – Viscoelastic Focusing technology reduces hardware and consumable costs dramatically by allowing the use of single use microfluidic chip for the complete test.
- **Fast Turnaround** – The fact that the results are obtained on the spot allows the physician to provide the diagnosis and treatment instantly saving time and money.
- **High Repeatability** – automated process which is highly accurate and consistent over time.
- **High Accuracy** – high sensitivity and specificity, combined with high number of cells count allows calculating accurate statistical outcomes.
- **Imaging Based Measurement** – allows archiving images of abnormal cells for later inspection by a specialist.
- **Maintenance Free Analyzer** – the CBC analyzer requires no maintenance during standard use.

Clinical Data

PixCell's CBC analyzer was validated vs. state of the art CBC systems that are commonly used in Hematology labs. In addition test results were compared to manual counting blood smears, performed by laboratory technicians. Both tests presented very high correlation between PixCell's analyzer and the reference results.