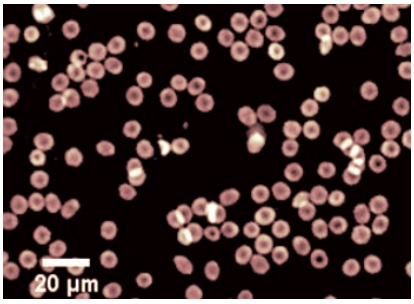
lyncée tec DHM® Digital Holographic Microscopy

RBC health diagnostic

Discover and publish with Lyncée Tec DHM®

Digital Holographic Microscopy (DHM®) **quantitative phase images** record the **morphology** (shape) and **content** (hemoglobin content) of Red Blood Cells and provide an important **clinical readout** on the **health status** of RBC **without label** as demonstrated in this latest publication (see below).

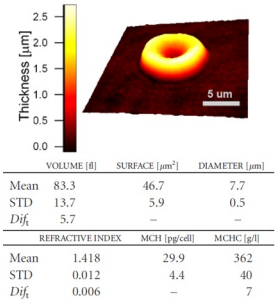


Non-perturbing observation of flowing RBC with DHM® (20x magnification)

Lyncée Tec DHM® T1000 for live cell Quantitative Phase Imaging

Unique advantages of DHM®

- Morphology and intracellular content (hemoglobin) measurements
- 194 recorded images per second: fast dynamics
- Millisecond to multi-days continuous recording: time-lapse
- Label-free, non-invasive: no cell perturbation
- Automated microscope: high-content/throughput screening



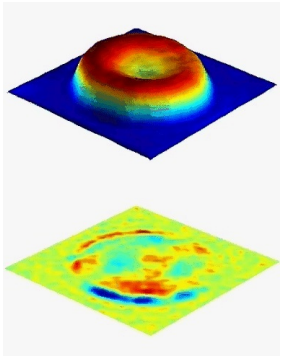
	VOLUME [fl]	SURFACE [µm²]	DIAMETER [µm]
Mean	83.3	46.7	7.7
STD	13.7	5.9	0.5
Dif_t	5.7	–	–
	REFRACTIVE INDEX	MCH [pg/cell]	MCHC [g/l]
Mean	1.418	29.9	362
STD	0.012	4.4	40
Dif_t	0.006	–	7

DHM® measures hematological parameters without cell lysis

Important clinical hematological parameters like volume and hemoglobin content are directly measured on individual RBC without marker or cell lysis.

Cytometry Part A 73A: 895, 2008

More info



Measure membrane fluctuations at the nanometer resolution

Membrane fluctuation amplitude of living RBC is measured with DHM® with a sensitivity of a few nanometer highlighting the high sensitivity of the technique and its ability to quantify nanometric changes.

PLOS One , vol. 7, no. 8, 2012

More info

Latest publication

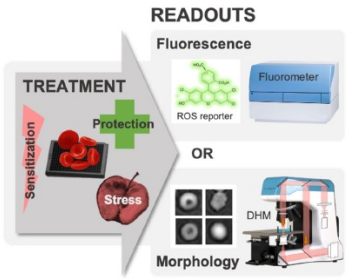
International Journal of *Molecular Sciences*

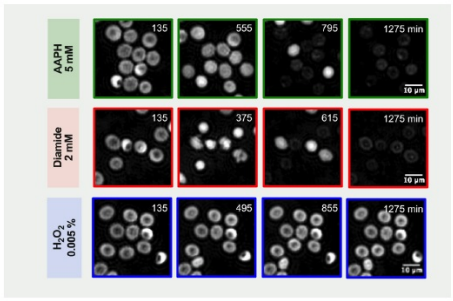
MDPI

Article

Image- and Fluorescence-Based Test Shows Oxidant-Dependent Damages in Red Blood Cells and Enables Screening of Potential Protective Molecules

Manon Bardyn [1], Jérôme Allard [1,2], David Crettaz [1], Benjamin Rappaz [3], Gerardo Turcatti [3], Jean-Daniel Tissot [4] and Michel Prudent [1,4,5,*]





In this publication Bardyn *et al.* found new antioxidants molecules to help preserve the quality of RBC in storage bag for blood transfusion.

Int. J. Mol. Sci. 2021, 22(8), 4293; https://doi.org/10.3390/ijms22084293

Michel Prudent, PhD

Head of Research and Development Products at Transfusion Interrégionale CRS

Our team has been using digital holographic microscopy, developed by Lyncée Tec, for several years to easily investigate the ex vivo *aging of red blood cells in the context of transfusion medicine. The high-throughput capability of DHM is an advantage to study libraries of compounds that can improve the storage of red blood cells. In combination to fluorescence microscopy, this instrument will provide complementary information on cell morphology and oxidative stress.*

Book a live-demo now!

Do you want to discover our product while avoiding unnecessary travels and interactions during the COVID-19 situation?

For any DHM® purchase based on a remote live-demo, Lyncée commits to plant trees through the non-profit organization OneTreePlanted and to provide you with a certificate.

Join our DHM users' forest of already more than 1700 trees!

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