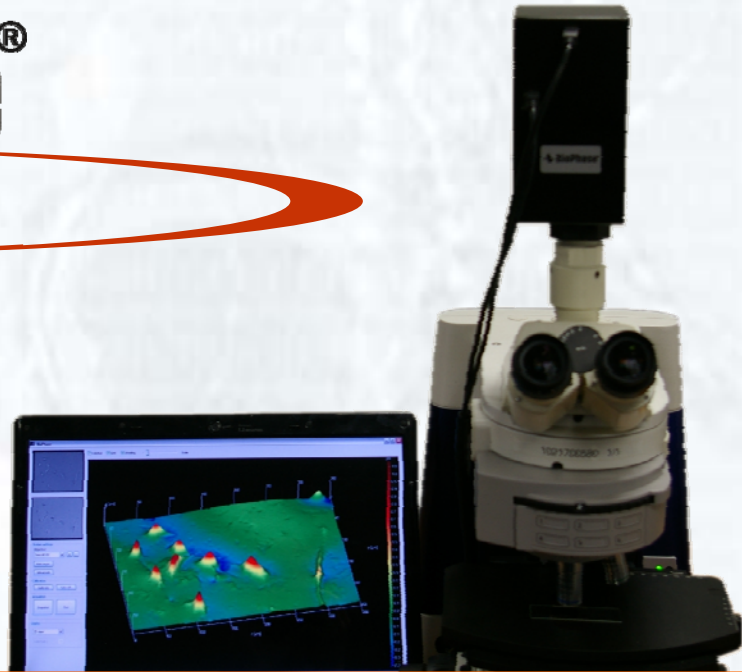


Label-free Digital Cell Imager

BioPhase® is a microscopy imaging device for qualitative and quantitative phase imaging of living cells.

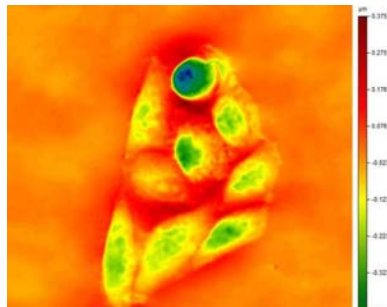


Biological specimen exhibiting poor amplitude contrast are usually revealed by labelling biological structures or by using phase optical techniques such as Phase Contrast or DIC. However, these widely used techniques have inherent limitations for quantitative measurements, samples manipulation, time consumption and undesirable side effects of labelling. BioPhase® is a breakthrough imaging system designed to overcome these limitations by performing in situ dynamic cell imaging with unique advantages:

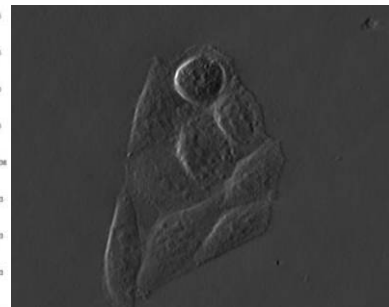
- **Free space manipulation**: no requirements for specialized optics and objectives,
- **Cells can remain in situ in their growth medium**: in flasks, Petri dishes or multi well plates
- **No contrast agents required**: non-invasiveness, no photo toxicity
- **Quantitative phase data** for intracellular properties
- **Time lapse monitoring** for cell dynamics, morphological changes studies
- **Easy segmentation** for counting or volume measurement



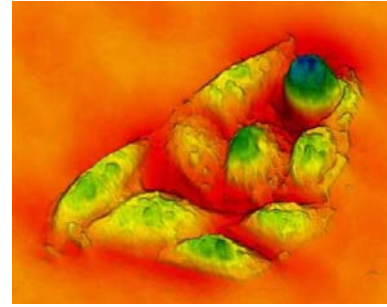
Bright Field Image



BioPhase Quantitative Phase



BioPhase DIC



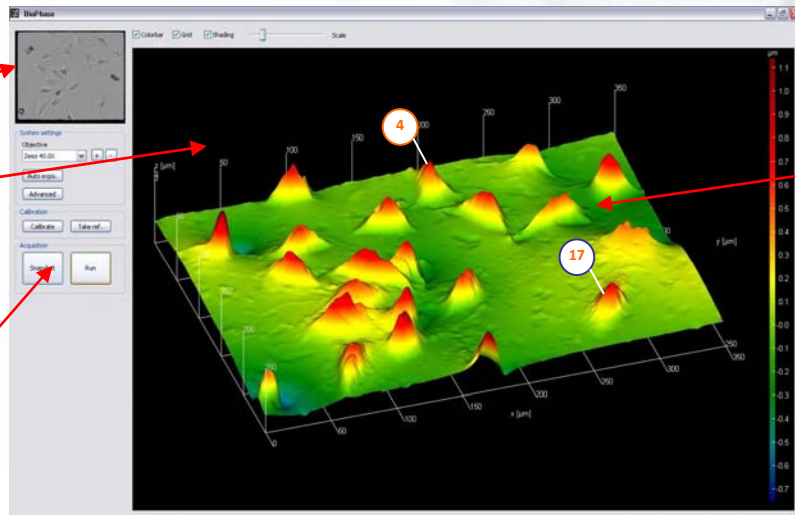
BioPhase 3D Cell Image

Cell Pathology • Drugs Testing • Cell Dynamics • Food Industry
BioPhase® enables real time biological specimen analysis

Label-free Digital Cell Imager

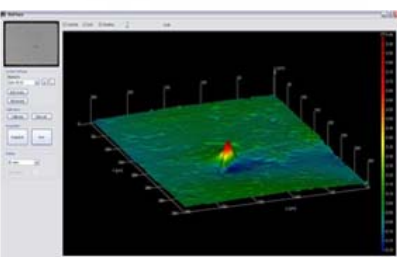
Based on Digital Phase Contrast technique, BioPhase® delivers qualitative phase imaging such as Phase Contrast, DIC and 3D view, using microscope bright field mode. In addition BioPhase software includes time lapse monitoring capabilities for morphological changes tracking, optional segmentation tools for counting and volume measurement, and OPD map for intracellular properties studies.

- **Multiple views:**
 - Bright Field image from microscope,
 - Phase Contrast, DIC and 3D display

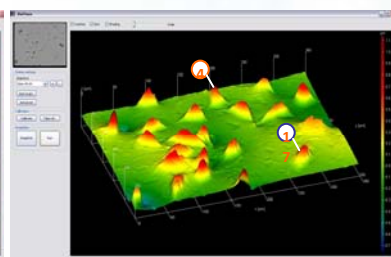


- **3D Analysis & Measurement**
 - 3D morphological measurements
 - Time lapse monitoring
 - Optical Path Difference

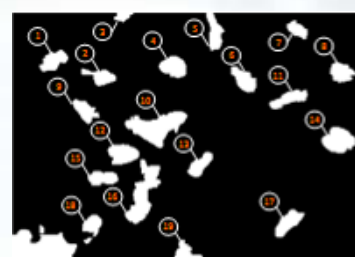
- **Smart User Interface**
 - Automatic Calibration
 - Auto Exposure



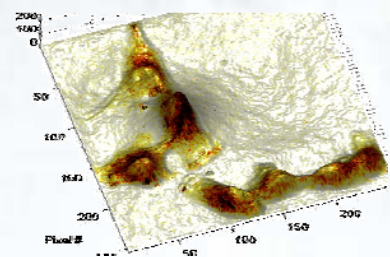
Marker free imaging



Morphological changes monitoring



Segmentation, volume & counting



Cell structure with fluorescence

BioPhase Performance are objectives dependent

The table below is given as an example.

| | | | | | |
|---|---------------------------------|-------------|-------------|------------|-------------|
| Microscope Objectives | 5x | 10x | 20x | 50x | 100x |
| Numerical Aperture | 0.13 | 0.25 | 0.5 | 0.8 | 0.9 |
| Measurement Area (X,Y), mm ² | 2.4 x 1.66 | 1.02 x 0.83 | 0.56 x 0.41 | 0.20x 0.16 | 0.10 x 0.08 |
| Lateral (X,Y) Resolution, μm | 2.1 | 1.1 | 0.7 | 0.4 | 0.3 |
| Max Axial Z range, μm | 35 | 9 | 4 | 1.1 | 0.8 |
| Axial (Z) Resolution, μm | 0.35 | 0.09 | 0.04 | 0.011 | 0.008 |
| CCD detector, pixels | 1392x1040, 4.65μm square pixels | | | | |
| Mechanical interface | C-mount | | | | |
| Dimensions (L x W x H), mm | 161 x 87 x 84 | | | | |
| Weight, kg | 2.5 | | | | |