

CytoCHECK SPAchip[®] pH Red Single-Detection Kit

CytoCHECK SPAchip[®] pH Red Single-Detection Kit allows measurement of **intracellular and extracellular pH levels** by changes in fluorescence intensity, which allows a more comprehensive study of the living single-cell physiology and provides additional insights using imaging platforms.

SPAchip[®] technology allows long-term intracellular monitoring without cytotoxic effects, ensuring minimal interference with cellular processes. Designed for living single-cell analysis, this kit provides researchers with a powerful, ready-to-use tool to study key biological processes, including metabolism, cell viability, and response to environmental changes, while maximizing experimental reproducibility and efficiency.

Highlights

- Non-toxic for living single cells. Measures intracellular and extracellular pH levels by changes in fluorescence intensity.
- Live and quantitative, long-term monitoring of intracellular and extracellular pH changes.
- Composed of fluorescently labeled silicon microparticles that can be internalized in the cytosol of cultured cells.
- Provides a more comprehensive study of single cell physiology and metabolism.
- Compatible with most imaging platforms.
- Cell type flexibility.
- Ready-to-use, robust workflow.

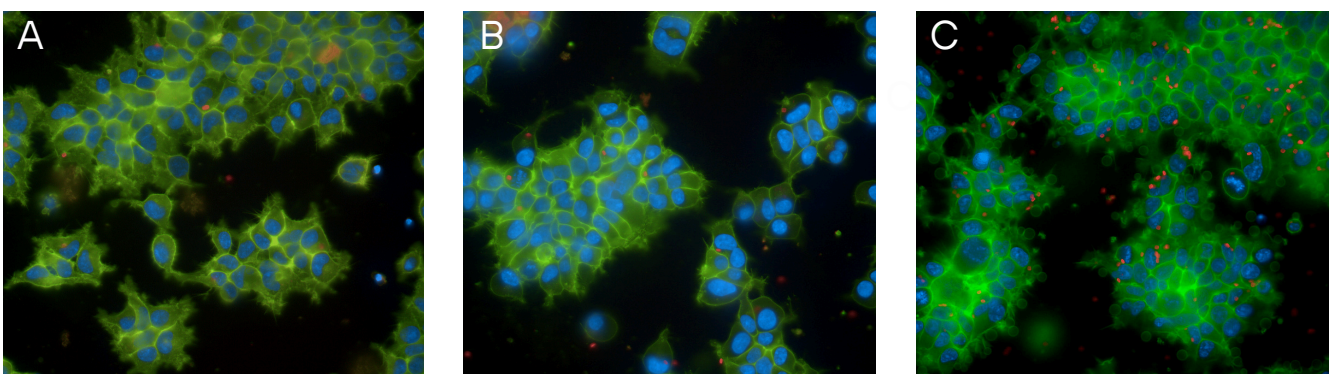


Figure 1: HEK293 cell line (kidney) fluorescence images containing internalized SPAchip[®] pH Red, illustrating how this silicon microchip sensor monitors intracellular and extracellular pH levels, a crucial parameter in cellular metabolism and physiology. Nuclei appear in blue, cell membranes are stained green, and SPAchip[®] pH-sensitive red fluorescence. Images A, B, and C represent different fields of view, showcasing the distribution and internalization of SPAchips[®] within living cells. SPAchip[®] technology provides live and quantitative intracellular and extracellular pH measurements without cytotoxic effects, enabling observation of pH dynamics over extended periods of time in living cells.

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Arrays for Cell Nanodevices SL

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Product features

- SPACHIP® assay kits are novel cell-based assays for living single-cell that bring together the fields of **nanotechnology and cell biology**.
- CytoCHECK SPACHIP® kits are composed of **fluorescently labeled silicon microparticles - SPACHIPS®**- that can be internalized in cultured cells to monitor changes in specific intracellular analyte concentrations for long periods of time.
- **CytoCHECK SPACHIP® pH red Single-Detection Kit** exhibits **ratiometric behaviour**; thus, increasing signal-to-noise ratio and enabling more precise interpolation curves.
- **High Sensitivity and Stability:** unlike traditional pH-sensitive dyes, CytoCHECK SPACHIP® pH red Single-Detection Kit ensures stable, reproducible pH measurements over extended periods of time, making it ideal for applications in phenotypic screening, drug discovery, and toxicity assessment.
- **Optimized for Imaging and Flow Cytometry:** compatible with fluorescence microscopy, high-content screening (HCS), and flow cytometry, enhancing imaging-based analysis for intracellular and extracellular pH studies.



Each CytoCHECK SPACHIP pH Red Single-Detection Kit contains:

~2.5x10⁶
ASSAY SPACHIPS

ASSAY SPACHIP® tube (embedded in a solid fluorescence-protective soluble film)

5 mL

ASSAY buffer tube (Sterile, cell culture suitable)

~2.5x10⁵ CONTROL SPACHIPS/100 µL

CONTROL SPACHIP® tube (non-fluorescent, ready-to-use)

CytoCHECK SPACHIP® pH Red Single-Detection Kit

Product code	S-001-PHR
Amount	~2.5 millions of SPACHIPS
Applications	Cell viability, proliferation, cell image acquisition
Assay time	30 minutes
Assay type	Living single-cell based
Analyte	pH
Detection method	Red fluorescence / Ratiometric curve*
Fluorescence	λ _{ex} : 546 nm; λ _{em} : 610 and 707 nm
Measuring range	pH 4.5 - 9.0
Compatible Platforms	Fluorescence microscopy, HCS/HCA platforms (recommended 20x magnification and over) and flow cytometry
Sample type	Adherent cells, suspension cells
Solubility	Soluble in assay buffer (aqueous)

*Ensure to follow the full User Protocol

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