

# Monitoring of intracellular acidification

## CytoCHECK SPAchip® pH Single-Detection Kit

Living cells can be continuously monitored in real-time using the SPAchip pH detection kit. Dynamic cellular events and responses over time, such as pH fluctuations during metabolism or in response to external stimulus, can be captured with this capability

01

### CELLULAR HOMEOSTASIS

Unveiling the dangers of intracellular acidification: How it can disrupt cellular processes and lead to cell death

02

### METABOLIC PROCESSES

How intracellular acidification can affect enzyme activity and metabolic processes

03

### CELLULAR SIGNALLING

The hidden link between pH and disease: unlocking the crucial role of cellular signaling

04

### DRUG DEVELOPMENT AND SCREENING

Monitoring acidification is revolutionating drug design and screening processes

05

### DISEASE PATHWAYS

The future of cancer treatment: targeting intracellular pH to disrupt tumor progression and metastasis



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# CytoCHECK SPAchip®

## pH Single-Detection Kit

### Highlights

- Non-toxic for living single cells.
- Measures intracellular pH levels by changes in fluorescence intensity.
- Allows long-term monitoring of intracellular 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.
- Maximizes the performance of most imaging analyzers.
- Cell type flexibility, no lower limits.
- Ready-to-use, robust workflow

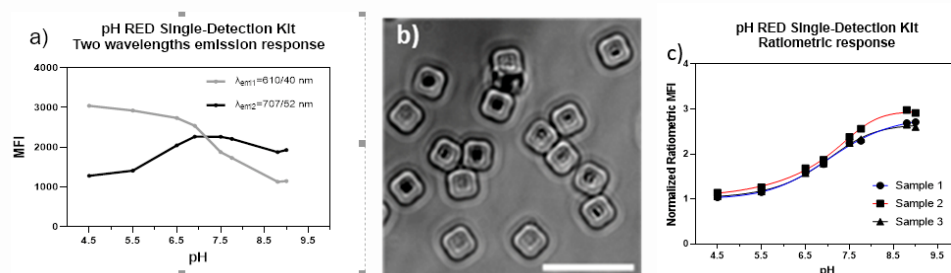
### The ultimate solution for intracellular living single cell analysis

CytoCHECK SPAchip® pH single-detection kits allow measurement of intracellular pH levels by changes in fluorescence intensity, which allows a more comprehensive study of the living single-cell physiology and maximizes the performance of most of imaging analyzers.

Assay kits are novel fluorescence assays developed by A4cell that brings together the fields of nanotechnology and cell biology. CytoCHECK SPAchip™ are composed of fluorescently labeled silicon microparticles - SPAchips® - that can be internalized in the cytosol of cultured cells and monitor changes for long periods of time

CytoCHECK SPAchip® Technical Specifications	pH red single detection kit	pH green single detection kit
Product code	S-001-PHR	S-001-PHG
Amount	~2.5 millions of SPAchips	
Applications	Cell viability, proliferation, cell image acquisition	
Assay time	30 minutes	
Solubility	Soluble in assay buffer (aqueous)	
Fluorescence	$\lambda_{exc}$ : 546 nm; $\lambda_{em}$ : 610 and 707 nm.	$\lambda_{exc}$ : 488 nm; $\lambda_{em}$ : 520 nm.
Detection method	Red fluorescence	Green fluorescence
Measuring range	pH 4.5 - 9.0	pH 4.5 - 7.5
Platform	Fluorescence microscopy, HCS/HCA platforms and flow cytometry	
Sample type	Adherent cells, suspension cells.	

### Imaging and fluorescence signal analysis



SPAchip® kits are designed to dynamically shift fluorescence intensity values in response to intracellular changes in analyte concentration

*Dynamic Film about cell sensing*