

## SpheroCHECK SPACHip<sup>®</sup> pH Green Single-Detection Kit

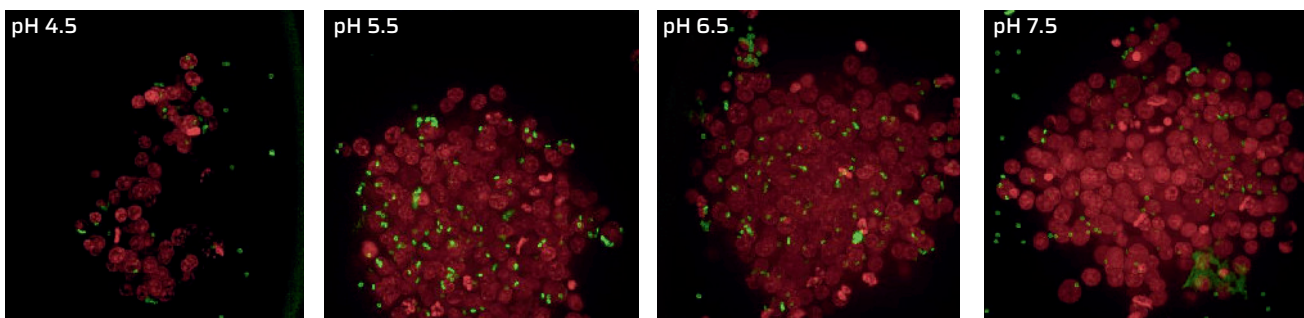
Spheroids are simple 3D structures, composed of typically one type of cell aggregates, that exhibit extensive cell-cell adhesion and have properties that mimic in vivo tissues and tumor behavior more effectively than 2D cell cultures.

Combining novel SPACHip<sup>®</sup> technology with spheroids allow researchers to gain a deeper understanding of cancer and metabolic diseases, accelerate drug discovery, and develop more targeted and personalized treatment approaches.

3D cell cultures bridge the gap between traditional cell culture systems and in vivo models, providing a more representative and functional model for current research focused on several disorders such as cancer and neurodegenerative diseases.

### Highlights

- Measures intracellular pH levels by changes in fluorescence intensity.
- Composed of fluorescently labeled silicon microparticles that can be internalized in cultured 3D models such as spheroids to monitor pH changes for long periods of time.
- Provides a more comprehensive study of the spheroid formation and physiology.
- Non-invasive and allows long-term monitoring of intracellular pH changes.
- Compatible with other detection technologies used in spheroid assays, allowing multiplexed with other stainings.



**Figure 1:** HEK293 (Human Embryonic Kidney cell line) spheroid formation. HEK293 cells were incubated with SpheroCHECK SPACHip<sup>®</sup> pH Green Single-Detection Kit at different pH conditions using commercial calibrators. DRAQ5<sup>™</sup> in red stained live nuclei. SPACHip<sup>®</sup> technology allows pH measurement at the different time points of spheroid formation.

### Contact us

[a4cell.com](http://a4cell.com) | [info@a4cell.com](mailto:info@a4cell.com)

Arrays for Cell Nanodevices SL

CAIT - UPM. Campus de Montegancedo s/n, 28223 Pozuelo de Alarcón – Madrid (Spain)

+34 910 679 519- [info@a4cell.com](mailto:info@a4cell.com)



## Product features

- SPACHIP® assay kits are novel cell-based assays for living single-cell that bring together the fields of nanotechnology and cell biology.
- SpheroCHECK SPACHIP® pH Green Single-Detection Kit enables continuous, simultaneous, and accurate monitoring of intracellular and extracellular pH in living 3D models.
- SpheroCHECK SPACHIP® monitors pH changes, facilitating an effective quality control of living cells to warrant the standardization and reproducibility of your cell experimental methodologies.
- SPACHIP® is compatible with other detection technologies used for numerous spheroid assays; therefore, it can be multiplexed with other stainings for imaging of 3D cultures.
- SpheroCHECK SPACHIP® enables a more comprehensive study of the spheroid formation and physiology.
- SPACHIPS remain in the cytosol reluctant to exocytosis during spheroid manipulation. In addition, SPACHIPS can be internalized by cells prior to, along or after formation of spheroids.
- SPACHIPS allows for cell tracking of single cells after spheroid dissociation and single-cell recovery.
- pH fluctuations directly affect cell viability, proliferation rates, and metabolic activities, ultimately affecting spheroid formation and condition. Thus, our technology allows to accurately assess the efficacy and toxicity during drug testing in 3D cell culture.



Each SpheroCHECK SPACHIP pH Green Single-Detection kit contains:

~5x10<sup>6</sup>  
ASSAY SPACHIPS

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

10 mL

**ASSAY buffer tube** (Sterile, cell culture suitable)

~5x10<sup>5</sup> CONTROL  
SPACHIPS/100 µL

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

### SpheroCHECK SPACHIP® pH Green Single-Detection Kit

Product code	<b>SS-001-PHG</b>
Amount	~5 millions of SPACHIPS
Applications	Cell viability, proliferation, cell image acquisition
Assay time	30 minutes
Solubility	Soluble in assay buffer (aqueous)
Fluorescence	λ <sub>ex</sub> : 488 nm; λ <sub>em</sub> : 520 nm
Detection method	Green fluorescence
Platform	Fluorescence microscopy, HCS/HCA platforms and flow cytometry
Sample type	3D structures: Spheroids.

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