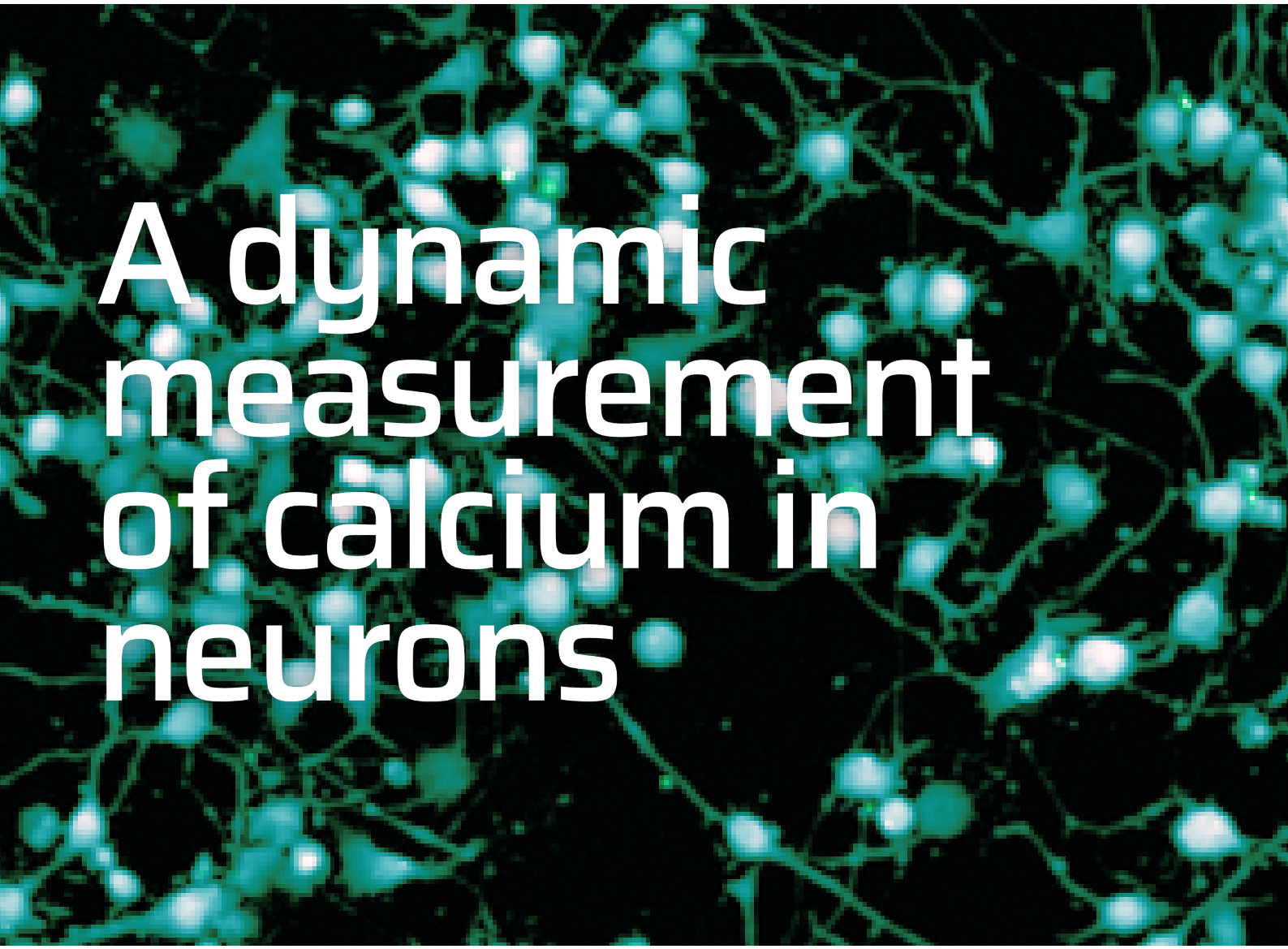

# A dynamic measurement of calcium in neurons

## CytoCHECK SPAchip® calcium single-detection kit

Calcium ions surge when neurons fire electrical impulses. Neuron activity can be indirectly monitored by measuring those surges, allowing researchers to study many different brain functions by studying individual neurons

a4cell® nanodevices

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### 01 CALCIUM SIGNALLING

Calcium ions (Ca^2+) play a crucial role in neuronal signaling. Changes in intracellular calcium levels regulate a wide range of neuronal processes

### 02 NEURONAL ACTIVITY

Calcium imaging provides a means to measure and visualize neuronal activity in real time. Increases in calcium levels reflect action potentials and electrical activity within neurons

### 03 SYNAPTIC PLASTICITY

Calcium signaling is intimately involved in synaptic plasticity, which refers to the ability of synapses to change their strength and connectivity

### 04 NEURODEGENERATIVE DISEASES

Many neurodegenerative diseases, such as Alzheimer's disease and Parkinson's disease, are associated with abnormal calcium handling in neurons

### 05 PHARMACOLOGICAL STUDIES

Calcium imaging is widely used in pharmacological research to evaluate the effects of drugs and compounds on neuronal activity

# CytoCHECK SPAchip®

## calcium single-detection Kit

## A reliable alternative to in-vivo laboratory works

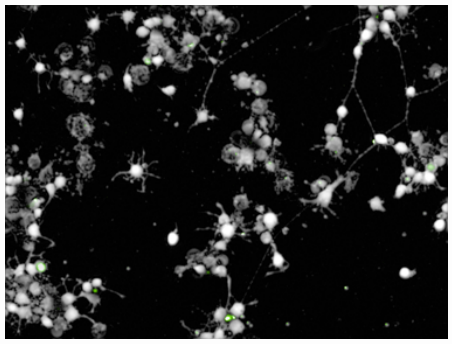
CytoCHECK SPAchip ® Calcium Single-Detection Kit allows measurement of intracellular calcium levels by changes in fluorescence intensity, which allows a more comprehensive study of the living single-cell physiology and maximizes the performance of most of imaging analyzers.

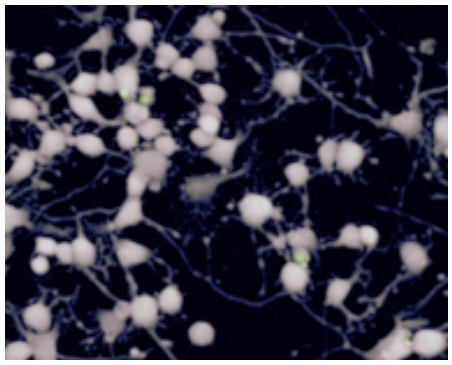
Assay kits are novel fluorescence assays developed by A4cell that brings together the fields of nanotechnology and cell biology. CytoCHECK SPAchip™ are composed of fluorescently labeled silicon microparticles -SPAchips®- that can be internalized in the cytosol of cultured cells and monitor changes for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

## Highlights

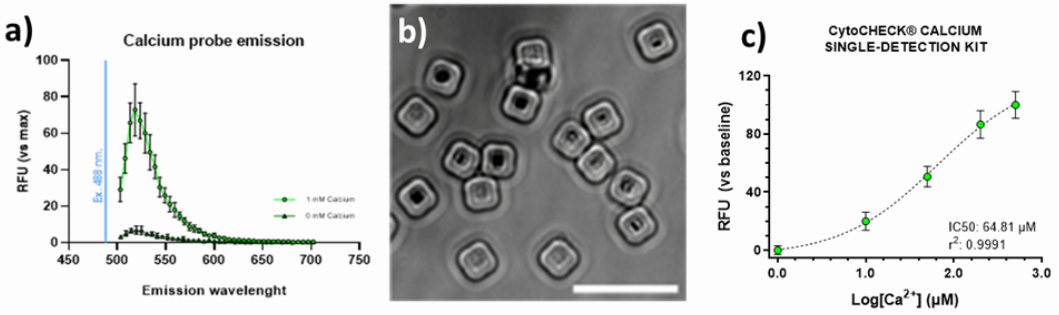
- Non-toxic for living single cells.
- Measures intracellular calcium levels by changes in fluorescence intensity.
- Allows long-term monitoring of intracellular calcium changes
- Composed of fluorescently labeled silicon microparticles that can be internalized in the cytosol of cultured cells.
- Provides 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

| CytoCHECK SPAchip® Technical Specifications | Calcium green single detection kit |
|---|---|
| Product code | S-002-CAG |
| Amount | ~2.5 millions of SPAchips. |
| Applications | Cell viability, proliferation, cell image acquisition |
| Assay time | 30 minutes |
| Solubility | Soluble in assay buffer (aqueous) |
| Fluorescence | λex:488 nm; λem: 520 nm. |
| Detection method | Green fluorescence |
| 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*

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