1536-Well Format Option with Disposable Tips and Pin Tool Head

Available in FDSS7000 and FDSS7000EX

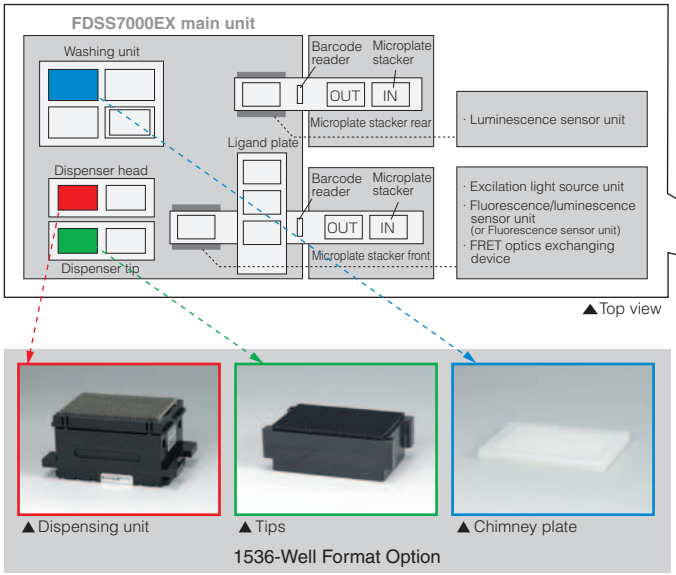
Miniaturization of assays using the 1536-well format results in higher efficiency and throughput. Up to now, the available gasket-type 1536 dispensing systems have many challenging issues, such as difficulty in removing sticky compounds/ligands from the metal nozzle. To solve these issues, Hamamatsu offers 1536 dispensing systems that feature disposable tips, which could be thrown away or washed using the system's various washing options, and two dispenser heads. These options make it possible to conduct agonist/antagonist cell-based assays more effectively and at high throughput. A pin tool head is also available for dispensing with pins.

Features

- **High precision dispensing (lower than 10 % CV between wells)**
- **Reduces consumption of cells and compounds (0.5 µL to 5 µL dispensed volume)**
- **384 format systems upgradable to 1536**
- **Performs various dispense protocols by adding two 1536 tip heads or a combination of tip and pin**

Applications

- **1536 GPCR fluorescence Ca^{2+} assay**
- **1536 hERG assay (FluxOR™)**
- **1536 Aequorin luminescence Ca^{2+} assay**



1536-Well Format Option

▲FDSS7000 · FDSS7000EX

Type No.	Product name
A10118-28	1536 tip type dispensing unit
A8687-52	Tips for 1536 wells (10 racks)
A10118-46	1536 chimney plate

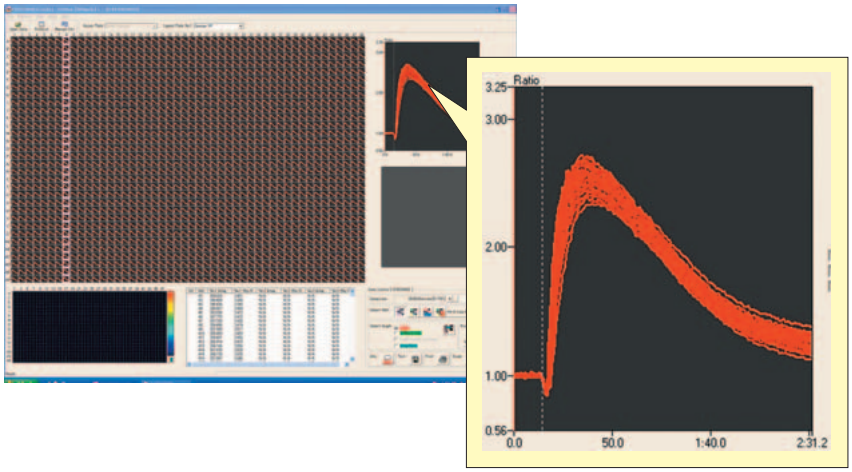
* A light source may need to be added, depending on the configuration before the upgrade.

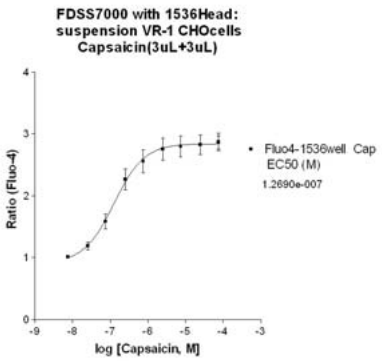
FDSS Option

Measurement Example

Suspension VR-1 CHO cell expressing GPCR dispensed 1000 per well, loaded 2 μM Fluo-4AM for one hour, and added Capsaicin to stimulate the cell.

Results





Summary

The above GPCR assay example was performed using the 1536-well dispenser head in the FDSS7000EX. The Z-factor was higher than 0.5, confirming an acceptable screening precision. We expect that miniaturized 1536-well format cell-based assays will become more popular in the future. These options were adopted in the NIH Roadmap screening project.

References

· Identification of Small Molecule Antagonists of the Neuropeptide-S Receptor, NCGC Probe Report Version 1.0.

· A Multiplex Calcium Assay for Identification of GPCR Agonists and Antagonists, JUNE 2010 ASSAY and Drug Development Technologies.

· A new homogeneous high-throughput screening assay for profiling compound activity on the human ether -a-go-go-related gene channel, Anal Biochem, 2009 November 1;394(1):30-38, Doi:10.1016/j.ab.2009.07.003.

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Cat. No. SBIS0091E01
JUN/2013 IP
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