



# Bio Nano Robo Seminars

Thursday, October 29, 17h

C-lounge, Building C, 2<sup>nd</sup> floor  
IIS-University of Tokyo, Komaba 4-6-1,  
Meguro-ku, Tokyo 153-8505.



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### Live cell-based sensor devices

#### Abstract

Living cells maintain life functions by responding quickly and with great sensitivity to changes in the external environment. Consequently, sensors using cells as active elements are thought to be able to perform analyses faster and with more sensitivity than previously possible. We report here a live cells-based sensorchip fabricated in microfluidic channels in which several laminar flows were achieved. In addition, we established a cytotoxic sensor cell line, which was transfected with a green fluorescence protein (GFP) plasmid derived from the heat shock protein 70B' (HSP70B') promoter, which is induced by cytotoxic reagents. The fluorescence in the sensor cells increased in a CdCl<sub>2</sub> dose-dependent manner in the microfluidic channels. In this system, cytotoxic reagents can be quantitatively detected in a quick, sensitive and high-throughput manner. The combination of sensor cells and microfluidic systems will provide an important basis for the development of micro-total analysis systems (micro-TAS) technology, and can be applied to toxicology, environmental assessment and drug screening.

## FREE ENTRANCE

a banquet will follow



More info <http://limmshp.iis.u-tokyo.ac.jp>

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