

## FLUOROMAX® Multiwavelength Capability: In-Vivo Measurement of Ca<sup>2+</sup>, Na<sup>+</sup>, pH, and Membrane Potential

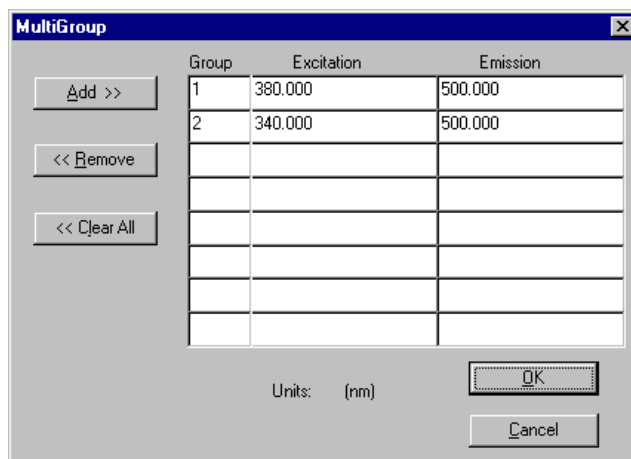
### Introduction

Simultaneously monitoring the levels of relevant metabolites and cell parameters is necessary to properly assess the effectiveness of drugs on living cells. The FLUOROMAX® spectrofluorometer allows the user to monitor up to eight wavelength-pairs of emission and excitation wavelengths. Coupling this capability with the proper probes can produce a real-time analysis of unfolding biological processes.

### Results

One research application that used simultaneous observation of multiple wavelength-pairs was performed by M. Kimura, *et al.*, at the University of Medicine and Dentistry of New Jersey.<sup>1</sup> Their evaluation of Thapsigargin, a hypertensive drug, was performed on a FLUOROMAX® spectrofluorometer. The results demonstrated that the effect of the drug in human platelets was not limited to the elevation of the Ca<sup>2+</sup> but produced substantial changes in the overall ionic balance.

Figure 1 shows a sample screen display taken from DATAMAX® (FLUOROMAX® software for Windows™). Note how DATAMAX® makes the monitoring of up to eight wavelength-pairs a simple matter of selection.



**Figure 1.** Screen shot from DATAMAX® software.

### Conclusion

FLUOROMAX®, with DATAMAX® software, allows the user to monitor wavelength-pairs to characterize processes in living cells and other biological systems. The measurement is feasible in real time because of the FLUOROMAX® spectrofluorometer's ability to scan rapidly (up to 200 nm s<sup>-1</sup>).

<sup>1</sup> Kimura, M.; *et al. J. Physiol.* **1993**, *494*, 1–13.

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