Electronic Supplementary Information for

A novel fluorescent chemosensor allows the assessment of intracellular total magnesium in small samples

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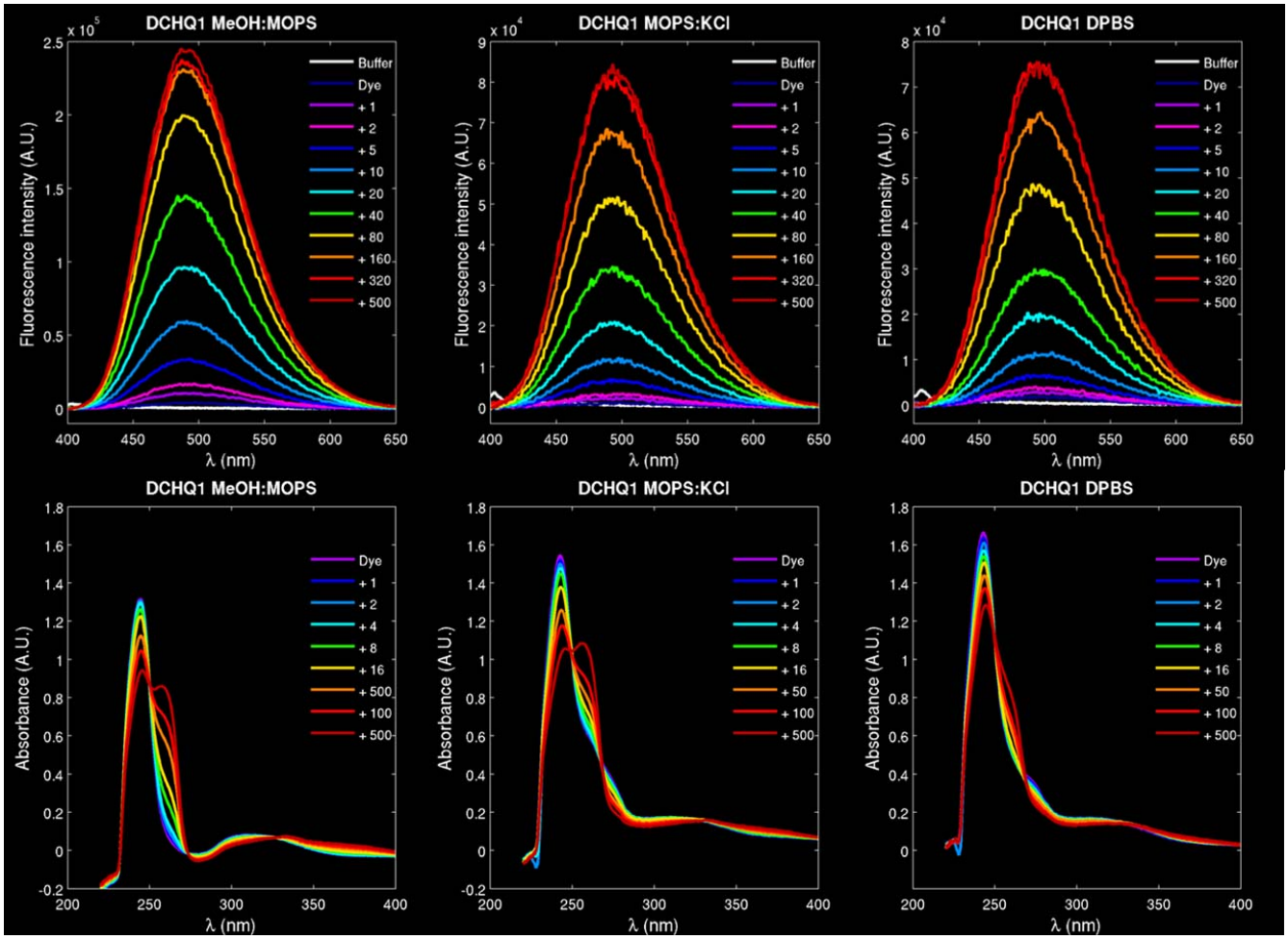

Figure S-1: Emission (top panel) and absorption (bottom panel) spectra of DCHQ1 25µM in three different buffer (MeOH:MOPS (Methanol:H2O 1:1 buffered at pH 7.4 with (3-morpholinopropane-1-sulfonic acid) at room temperature), MOPS:KCl and DPBS) upon addiction of increasing $MgSO_4$ concentration (from 0 to 500 µM).

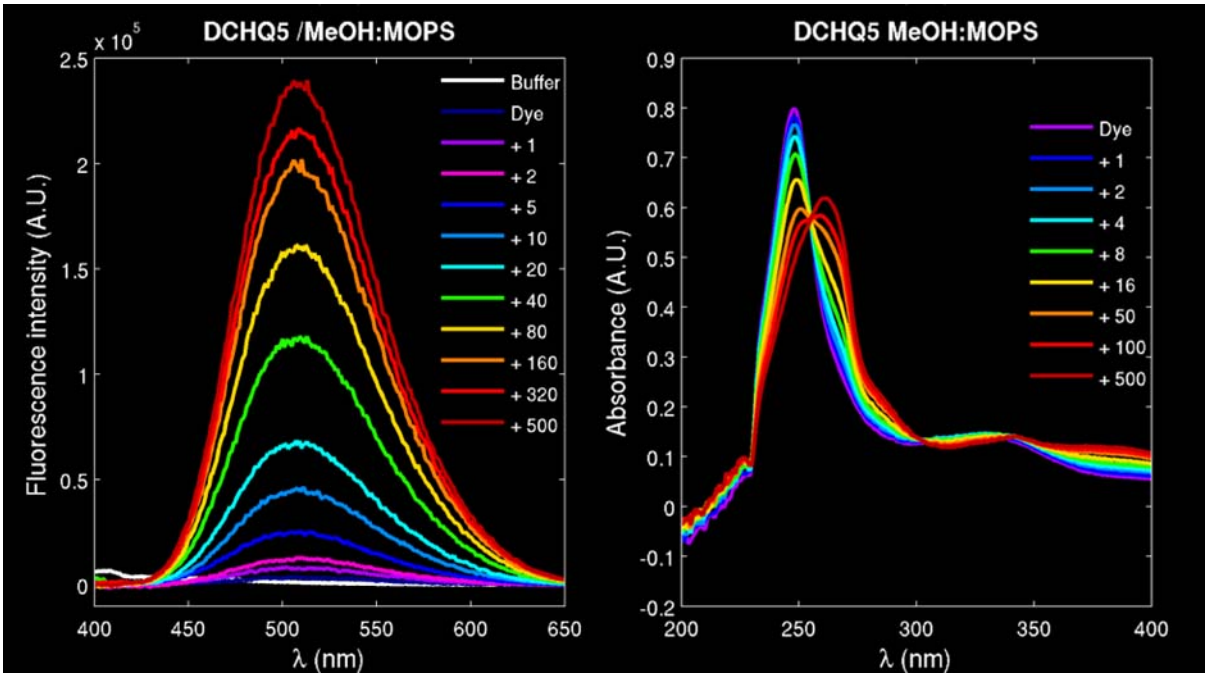

Figure S-2: Emission (on the left) and absorption (on the right) spectra of DCHQ5 10 µM in MeOH:MOPS (Methanol:H2O 1:1 buffered at pH 7.4 with (3-morpholinopropane-1-sulfonic acid) at room temperature) upon addiction of increasing $MgSO_4$ concentration (from 0 to 500 µM).

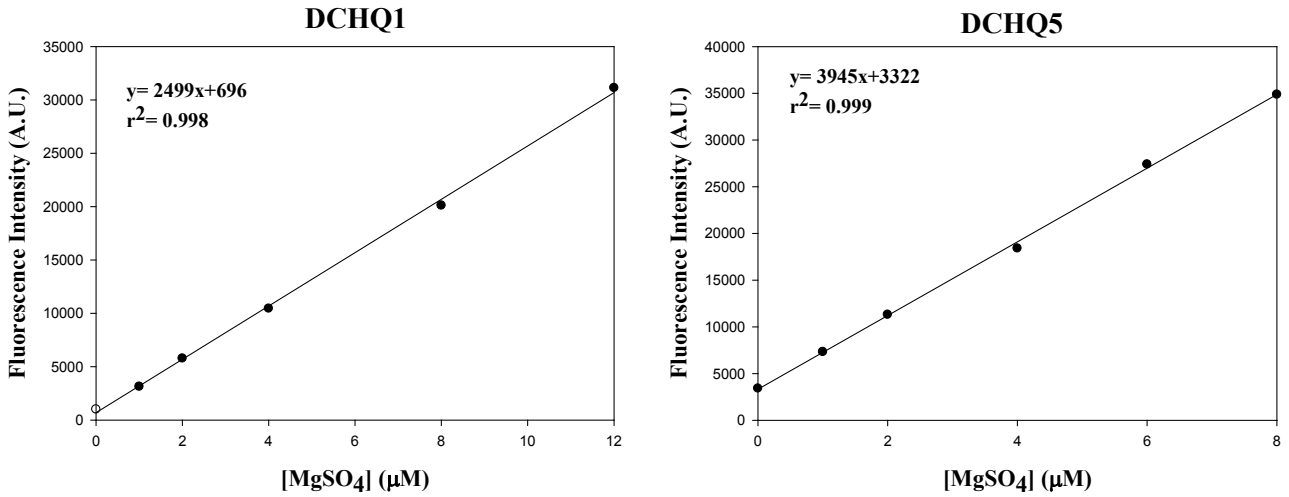

Figure S-3: Standard calibration curves of DCHQ1 25µM in DPBS (on the left) and DCHQ5 15 µM in MeOH:MOPS with 10% of DPBS (on the right) upon addiction of increasing $MgSO_4$ concentrations. The fluorescence intensities were acquired at 500 nm for DCHQ1 and at 510 nm for DCHQ5.

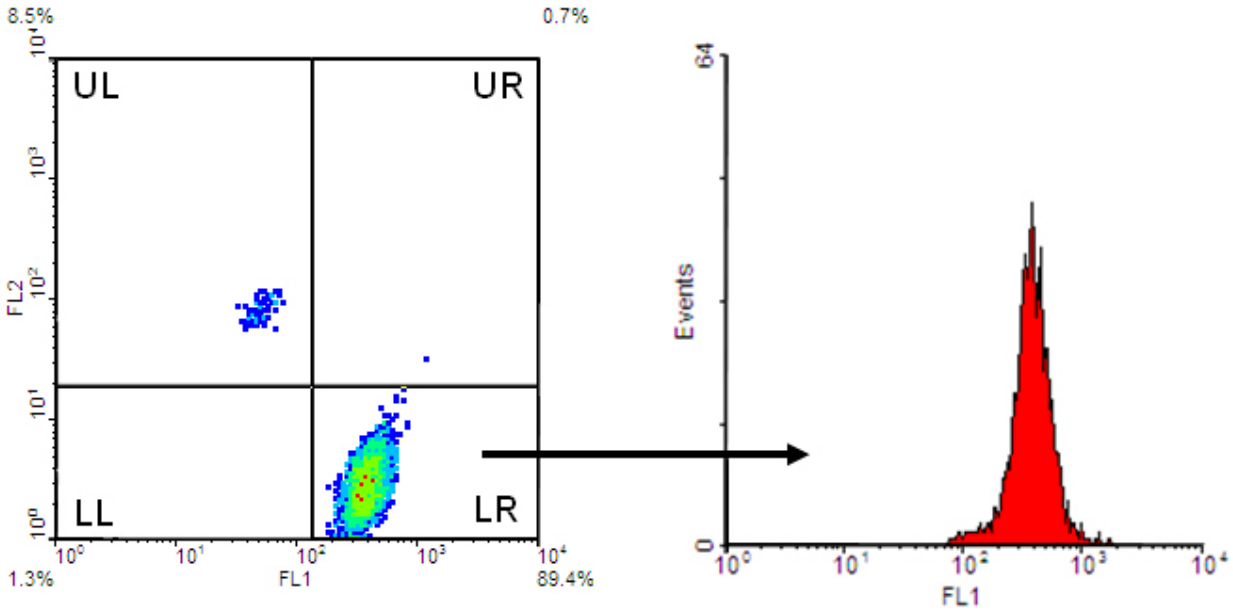

Figure S-4: Flow cytometric assay of DCHQs staining of viable cells.

As reported in the experimental section, cells loaded with the DCHQ probes were counterstained with 5 µg mL $^{-1}$ propidium iodide (PI) to identify dead cells. PI is a molecule ehich is not able to permeate intact viable cells. Acquiring the DCHQ fluorescences at 525 nm (FL1 green) and PI fluorescence at 600 nm (FL2 red) on a logarithmic scale, it is possible to build a biparametric plot. This plot can be divided in 4 squared by the "quad stat" software (WinMDI, Purdue University, USA): in the Upper Left square (UL) fall the cells stained only by PI (dead cells), in the Upper Right square fall the cells which present both the stains, indicating dying cells in which the plasma membrane presents an increased permeability and finally in the Lower Left square (LL) the cellular debris not stained neither by DCHQs or PI are founded.

The gaiting function of cytometer software allow to harvest only the fluorescence of viable cells (LR quadrant) and to analyse their fluorescence distribution. The mean channel value was calculated as geometric means of the fluorescence distribution.