

Peer-reviewed publications with data obtained from Quanta™ Flow Cytometry Systems

Lee H, Kim M, Kim M, Kim N, Billings F, D'Agati V, Emala C. Isoflurane protects against renal ischemia and reperfusion injury and modulates leukocyte infiltration in mice. *Am J Physiol Renal Physiol* 2007 293 3:F713-22.

Application: Viability and staining of cell surface proteins such as CD3, CD4, CD8 and CD45

Rudolf E, Rudolf K, Červinka M. Selenium activates p53 and p38 pathways and induces caspase-independent cell death in cervical cancer cells. *Cell Biol Toxicol*. Online Pub DOI 10.1007/s10565-007-9022-1.

Application: Annexin V-FITC/propidium iodide apoptosis analysis, phospho-p53, phospho-JNK, phospho-p38, and Bax determination

Sharma A, Comstock CES, Knudsen ES, Cao KH, Hess-Wilson JK, Morey LM, Barrera J, Knudsen KE. Retinoblastoma Tumor Suppressor Status Is a Critical Determinant of Therapeutic Response in Prostate Cancer Cells. *Cancer Res*. 2007 67: 6192-6203.

Application: Cell cycle analysis with propidium iodide (PI) staining. Bromodeoxyuridine (BrdUrd) incorporation

Lee HT, Kim M, Kim J, Kim N, Emala CW. TGF- β 1 Release by Volatile Anesthetics Mediates Protection against Renal Proximal Tubule Cell Necrosis. *Am J Nephrol* 2007 27: 416-424.

Application: Annexin V-FITC/propidium iodide apoptosis analysis

Li Q, Gerena L, Xie L, Zhang J, Kyle D, Milhous W. Development and validation of flow cytometric measurement for parasitemia in cultures of *P. falciparum* vitally stained with YOYO-1. *Cytometry Part A* 2007 71A: 297-307.

Application: Fast, highly sensitive, reproducible and accurate measurement for parasitaemia.

Urwin NAR, Horsnell J, Moon T. Generation and characterisation of colchicine-induced autotetraploid *Lavandula angustifolia*. *Euphytica* 2007 156: 257-266.

Application: Absolute genome size or C-values determination with PI staining

Miyazaki H, Shiozaki A, Niisato N, Marunaka Y. Physiological significance of hypotonicity-induced regulatory volume decrease: reduction in intracellular Cl⁻ concentration acting as an intracellular signaling. *Am J Physiol Renal Physiol*. 2007 292: F1411-F1417.

Application: Accurate cell size measurement by Electronic Volume (EV). Intracellular Cl⁻ concentration ([Cl⁻]_i) measurement by a halide-specific fluorescent dye, N-(6-methoxyquinolyl) acetoethyl ester (MQAE).

Note: *It is the first publication to demonstrate significance of normalizing fluorescence with cell volume (EV), i.e. fluorescence concentration (FC), in measuring [Cl⁻]_i.*

Xie L, Li Q, Johnson J, Zhang J, Milhous W, Kyle D. Development and validation of flow cytometric measurement for parasitaemia using autofluorescence and YOYO-1 in rodent malaria. *Parasitol*. 2007 Apr 20: 1-12.

Application: Fast, highly sensitive, reproducible and accurate measurement for parasitaemia.

Aparicio-Fernandez X, Garcia-Gasca T, Yousef GG, Lila MA, Gonzalez de Mejia E, Loarca-pina G: Chemopreventive activity of polyphenolics from black Jamaican Bean (*Phaseolus vulgaris* L.) on HeLa and HaCaT Cells. *J Agric Food Chem*. 2006 54: 2116-2122.

Application: HeLa cell cycle analysis with NIM-DAPI.

Krishan A, Ganjei-Azar P, Jorda M, Hamelik RM, Reis IM, Nadji M. .Detection of tumor cells in body cavity fluids by flow cytometric and immunocytochemical analysis. *Diag Cytopathol* 2006 34: 528-541.

Application: High resolution DNA and nuclear volume measurement.

Bauer S, Yu LK, Demetri GD, and Fletcher JA. Heat shock protein 90 inhibition in imatinib-resistant gastrointestinal stromal tumor. *Cancer Res.* 2006 66: 9153-9161.

Application: Cell cycle analysis with NIM-DAPI.

Hess-Wilson JK, Daly HK, Zagorski WA, Montville CP, Knudsen KE. Mitogenic action of the androgen receptor sensitizes prostate cancer cells to Taxane-based cytotoxic insult. *Cancer Res.* 2006 66: 11998-12008.

Application: Cell cycle analysis with propidium iodide (PI) staining.

Kaddour-Djebbar I, Lakshmikanthan V, Shirley RB, Ma Y, Lewis RW, Kumar MV. Therapeutic advantage of combining calcium channel blockers and TRAIL in prostate cancer. *Mol Cancer Ther.* 2006 5: 1958-1966.

Application: Apoptosis analysis with Annexin V-FITC and 7-amino-actinomycin D (7-AAD) staining.

McGuire MJ, Samli KN, Chang YC, Brown KC. Novel ligands for cancer diagnosis: Selection of peptide ligands for identification and isolation of B-cell lymphomas. *Exp Hematol.* 2006 34: 443-452.

Application: Detection of biotinylated peptide binding to cell surface with streptavidin- Phycoerythrin (PE).

Cabana R, Frolova EG, Kapoor V, Thomas RA, Krishan A, Telford WG. The minimal instrumentation requirements for Hoechst side population analysis: Stem cell analysis on low-cost flow cytometry platforms. *Stem Cells* 2006 24: 2573-2581.

Application: Stem cell side population analysis.

Kadota Y, Watanabe T, Fujii S, Maeda Y, Ohno R, Higashi K, Sano T, Muto S, Hasezawa S, Kuchitsu K. Cell cycle dependence of elicitor-induced signal transduction in tobacco BY-2 Cells. *Plant Cell Physiol.* 2005 46: 156-165.

Application: Cell cycle analysis with NIM.

Krishan A, Dandekar, RD. DAPI Fluorescence in nuclei isolated from tumors. *J Histochem Cytochem.* 2005 53: 1033-1036.

Application: Cell cycle analysis with NIM-DAPI.

Weinberger LS, Burnett JC, Toettcher JE, Arkin AP, Schaffer DV. Stochastic gene expression in a lentiviral positive-feedback loop: HIV-1 Tat fluctuations drive phenotypic diversity. *Cell* 2005 122: 169-182 (data in Supplemental Data section).

Application: Detection of GFP expression. Cell size measurement by EV. Cell cycle analysis with NIM-DAPI. Cell cycle analysis and nuclei size measurement on GFP expressed cells.

Note: The paper described a very interesting phenomenon. After NIM (a solution contained NP-40) treatment, 2% formaldehyde fixed GFP expressed Jurkat cells display GFP fluorescence equivalent to unfixed, non-NIM-treated cells. However, the fixed and NIM-treated cells have the same volume measurement as bare nuclei (~5 µm diameter) because formaldehyde fixation plus NIM-lysing still permits ions to infuse the fixed cytoplasm but not the nucleus. Therefore, fixed GFP expressed cell with NIM treatment maintains a halo of GFP around the major volume determinant, i.e. nucleus. This observation allowed the authors to design the experiment to determine correlation of aneuploidy with GFP expression.

Lefurgey A, Gannon, Blum J, Ingram P. Leishmania donovani amastigotes mobilize organic and inorganic osmolytes during regulatory volume decrease. J Eukaryot Microbiol. 2005 52: 277–289.

Application: Accurate cell size measurement by Electronic Volume (EV).

Furie B, Zwicker J, Larocca T, Kos C, Bauer B and Furie BC: Tissue factor-bearing microparticles and cancer-associated thrombosis. Haematologica reports 2005 1(9):5-8.

Application: Determine of size, size distribution, and concentration of tissue factor-bearing microparticles.

Horton JK, Donna F, Stefanick DF, Naron JM, Kedar PS, Wilson SH. Poly(ADP-ribose) polymerase activity prevents signaling pathways for cell cycle arrest after DNA methylating agent exposure. J Biol Chem. 2005 280: 15773–15785.

Application: Cell cycle analysis with NIM-DAPI.

Krishan A, Dandekar P, Nathan N, Hamelik R, Miller C, Shaw J. DNA index, genome size, and electronic nuclear volume of vertebrates from the Miami Metro Zoo. Cytometry Part A 2005 65A: 26–34.

Application: Determination of DNA content and genome size with NIM-DAPI. Accurate nuclear volume measurement by Electronic Volume (EV).

Yoshida N, Saeki Y. Chestnut bur-shaped aggregates of chrysotile particles enable inoculation of Escherichia coli cells with plasmid DNA. Appl Microbiol Biotechnol. 2004 65: 566–575.

Application: Identification of chrysotile aggregates by accurately measuring particle size (electronic volume) and 4',6'-diamidino-2-phenylindole (DAPI) signal.

Krishan A, Cabana R. Flow Cytometric analysis of electronic nuclear volume and DNA content in normal mouse tissues. Cell Cycle 2004 3: 380-383.

Application: Cell cycle analysis with nuclear isolation medium (NIM) – DAPI and accurate nuclear volume determination by Electronic Volume (EV) measurement.

Thomas RA, Krishan A, Robinson DM, Sams C, Costa F. NASA/American Cancer Society high-resolution flow cytometry project-I. Cytometry 2001 43: 2–11.

Note: One of the original publications describing basic principle of the original Quanta Flow Cytometer.

Krishan A, Wen J, Thomas RA, Sridhar KS, Smith Jr. WI. NASA/American Cancer Society high-resolution flow cytometry project – III. Multiparametric analysis of DNA content and electronic nuclear volume in human solid tumors. Cytometry 2001 43: 16–22.

Note: One of the original publications describing basic principle of the original Quanta Flow Cytometer.