Selected literature on FCS done with the ConfoCor 2 in years 2002-2006

The literature covers diffusion, interaction and concentration measurement done with auto- and cross-correlation setups.

Vesicle diffusion

1.) N. Altan-Bonnet, R.D. Phair, R.S. Polishchuk, R. Weigert, and J. Lippincott-Schwartz (2003). A role for Arf 1 in mitotic Golgi disassembly, chromosome segregation, and cytokinesis. Proc. Natl. Acad. Sci. USA 100_23: 13314-13319
→ Abstract in PubMed.org

2.) M. Elsner, H. Hashimoto, J.C. Simpson,D. Cassel, T. Nilsson, and M. Weiss (2003). Spatiotemporal dynamics of COPI vesicle machinery. EMBO reports 4_10: 1000-1005
→ Abstract in PubMed.org

3.) K. Bacia, I.V. Majoul, and P. Schwille (2002). Probing the endocytotic pathway in live cells using dual-color fluorescence cross-correlation analysis. Biophys. J. 83_8: 1184-1193
→ Abstract in PubMed.org

4.) L. Rusu, A. Gambhir, S. McLaughlin, J. Radler (2004). Fluorescence correlation spectroscopy studies of Peptide and protein binding to phospholipid vesicles. Biophys J. 87_2:1044-53.
→ Abstract in PubMed.org

Particle and molecule diffusion

1.) J. Toivola, K. Ojala, P.O. Michel, M. Vento, and C. Oker-Blom (2002). Properties of Baculovirus particles displaying GFP by fluorescence correlation spectroscopy. Biol. Chem. 383_12: 1941-1946
→ Abstract in PubMed.org

2.) J. Vercammen, G. Maertens, M. Gerardt, E. deClercq, Z. Dehyser, and Y. Engelborghs (2002). DNA-induced polymerization of HIV-Integrase analyzed with fluorescence fluctuation spectroscopy. J. Biol. Chem. 277_41: 38045-38042
→ Abstract in PubMed.org

3.) S. Mangenot, S. Keller, and J. Raedler (2003). Transport of nucleosome core particles in semidilute DNA solutions. Bioph. J. 85: 1817-1825
→ Abstract in PubMed.org

4.) L. Gilbert, J. Toivola, E. Lehtomäki, L. Donaldson, P. Käpylä, M. Vuento and C. Oker-Blom (2204). Assembly of fluorescent chimeric virus-like particles of canine parvovirus in insect cells. Biochem Biophys Res Commun. 313_4:878-87
→ Abstract in PubMed.org

5.) O. Mader, K. Reiner, H.-J. Egelhaaf, R. Fischer, and R. Brock (2004). Structure Property Analysis of Pentamethine Indocyanine Dyes: Identification of a New Dye for Life Science Applications. Bioconjug Chem. 15_1:70-78
→ Abstract in PubMed.org

6.) R.G Winkler, S. Keller, J.O. Radler (2006). Intramolecular dynamics of linear macromolecules by fluorescence correlation spectroscopy. Phys Rev E Stat Nonlin Soft Matter Phys. 73(4 Pt 1), in press
→ Abstract in PubMed.org

Membrane diffusion

1.) H. Pick, A.K. Preuss, M. Mayer, T. Wohland, R. Hovius, and H. Vogel (2003). Monitoring expression and clustering of the Ionotropic $5HT_3$ receptor in plasma membranes of live biological cells. Biochemistry 42_4: 877-884
→ Abstract in PubMed.org

2.) K. Saito, E,. Ito, Y. Takakuwa, M. Tamura, and M. Kinjo (2003). In situ obersvation of mobility and anchoring of PKC I in plasma membrane. FEBS lett. 541_126: 126-131
→ Abstract in PubMed.org

3.) S. Milon, R. Hovius, H. Vogel, and T. Wohland (2003). Factors influencing fluorescence correlation spectroscopy measurements on membranes: simulations and experiments. Chem. Phys. 288: 171-186

4.) M. Weiss, H. Hashimoto, and T. Nilsson (2003). Anomalous protein diffusion in living cells as seen by fluorescence correlation spectroscopy. Biophys. J. 84_6: 4043-4052
→ Abstract in PubMed.org

5.) K. Bacia, D. Scherfeld, N. Kahya, P..Schwille (2004). Fluorescence correlation spectroscopy relates rafts in model and native membranes. Biophys J. 87_2:1034-43
→ Abstract in PubMed.org

6.) J. Humpolikova , E. Gielen, A. Benda, V. Fagulova, J. Vercammen, M. Vandeven, M. Hof, M. Ameloot, Y. Engelborghs Y (2006). Probing diffusion laws within cellular membranes by Z-scan fluorescence correlation spectroscopy. Biophys J.,in press
→ Abstract in PubMed.org

7.) I.R. Bates, B. Hebert, Y. Luo, J. Liao , A.I. Bachir, D.L. Kolin, P.W. Wiseman, J.W. Hanrahan (2006). Membrane lateral diffusion and capture of CFTR within transient confinement zones. Biophys J., in press
→ Abstract in PubMed.org

8.) U.P. Golebiewska , A. Gambhir, G. Hangyas-Mihalyne, I. Zaitseva, J. Raedler , S. McLaughlin (2006). Related Membrane-Bound Basic Peptides Sequester Multivalent (PIP2), but not Monovalent (PS), Acidic Lipids. Biophys J., in press
→ Abstract in PubMed.org

9.) K. Bacia, D. Scherfeld, N. Kahya, P. Schwille P(2004). Fluorescence correlation spectroscopy relates rafts in model and native membranes. Biophys J. 87(2):1034-43
→ Abstract in PubMed.org

Transport over membranes

1.) R. Fischer, T. Waizenegger, K. Koehler, and R. Brock (2002). A quantitative validation of fluorophore-labelled cell-permeable peptide conjugates: fluorophore and cargo dependence of import. Biochim. Biophys. Acta 1564_6: 366-374
→ Abstract in PubMed.org

2.) T. Waizenegger, R. Fischer, and R. Brock (2002). Intracellular concentration measurements in adherent cells: a comparison of import efficiencies of cell-permeable peptides. Biol. Chem. 383: 291-299
→ Abstract in PubMed.org

Diagnostics

1.) Z. Foeldes-Papp, U. Demel, and G. Tilz (2002). Detection of single molecules: solution-phase single-molecule fluorescence correlation spectroscopy as an ultrsensitive, rapid and reliable system for immunological investigations (2202). J. Immunol. Meth. 260_1/2: 117-124
→ Abstract in PubMed.org

2.) Z. Foeldes-Papp, M. Kinjo, K. Saito, H. Kii, T. Takagi, M. Tamura, J.M. Costa, E. Birch-Hirschfeld, U. Demel, P. Thyberg, and G. Tilz. Mol. Diagn. 7_2:1-13

Kinetics

1.) K. Chattopadhyay, S. Saffarian, E.L. Elson, and C. Frieden (2002). Measurement of microsecond dynamic motion in the intestinal fatty acid binding protein by using fluorescence correlation spectroscopy. Proc. Natl. Acad. Sci. USA 99_22: 14171-14176
→ Abstract in PubMed.org

2.) A.H. Westphal, A. Matorin, M.A. Hink, J.W. Borst, W.J. van Berkel, A.J. Visser. Real-time enzyme dynamics illustrated with fluorescence spectroscopy of p-hydroxybenzoate hydroxylase. J Biol Chem. 281(16):11074-81
→ Abstract in PubMed.org

3.) M. Gerard, Z. Debyser, L. Desender, P.J. Kahle, J. Baert, V. Baekelandt, Y. Engelborghs (2006). The aggregation of alpha-synuclein is stimulated by FK506 binding proteins as shown by fluorescence correlation spectroscopy. FASEB J. 20(3):524-6.
→ Abstract in PubMed.org

4.) T. Kohl, E. Haustein, P. Schwille P (2005). Determining protease activity in vivo by fluorescence cross-correlation analysis. Biophys J. 89(4):2770-82.
→ Abstract in PubMed.org

Interaction

1.) F. Schubert, H. Zettl, W. Haefner, G. Krauss, and G. Krausch (2003). Comparative thermodynbamic analysis of DNA-protein interactions using surface plasmon resonance and fluorescence correlation spectroscopy. Biochemistry 42: 10288-10294
→ Abstract in PubMed.org

2.) D. Wang, N.V. Visser, M. Veenhuis, and I.J. van der Klei (2003). Physical interactions of the peroxisomal trageting signal 1 receptor pex5p, studues by fluorescence correlation spectrsocopy. J. Biol. Chem. 278_44: 43340-43345
→ Abstract in PubMed.org

3.) G. Octobre, C. Lemercier, S. Khochbin, M. Robert-Nicoud, C. Souchier (2005). Monitoring the interaction between DNA and a transcription factor (MEF2A) using fluorescence correlation spectroscopy. C R Biol. 328(12):1033-40
→ Abstract in PubMed.org

4.) H. Jankevics, M. Prummer, P. Izewska, H. Pick , K. Leufgen, H. Vogel (2005). Diffusion-time distribution analysis reveals characteristic ligand-dependent interaction patterns of nuclear receptors in living cells. Biochemistry 44(35):11676-83
→ Abstract in PubMed.org

5.) G. Maertens, J. Vercammen, Z. Debyser, Y. Engelborghs Y (2005). Measuring protein-protein interactions inside living cells using single color fluorescence correlation spectroscopy. Application to human immunodeficiency virus type 1 integrase and LEDGF/p75. FASEB J. 19(8):1039-41
→ Abstract in PubMed.org

6.) L. Rusu, A. Gambhir, S. McLaughlin, J. Radler J (2004). Fluorescence correlation spectroscopy studies of Peptide and protein binding to phospholipid vesicles. Biophys J. 87(2):1044-53.
→ Abstract in PubMed.org

Lipid dynamics

1.) D. Scherfeld,N. Kahya, and P. Schwille (2003). Lipid dynamics and domain formation in model membranes composed of ternary mixtures of unsaturated and saturated phosphatidylcholines and cholesterol. Biophys J. 85_6: 3758-68
→ Abstract in PubMed.org

2.) N. Kahya, D. Scherfeld, K. Bacia and P. Schwille P. (2004). Lipid domain formation and dynamics in giant unilamellar vesicles explored by fluorescence correlation spectroscopy. J. Struct. Biol. 147_1:77-89
→ Abstract in PubMed.org

Cytoplasmic diffusion

1.) Ruchira, M.A. Hink, L. Bosgraaf, P.J. van Haastert , and A.J. Visser (2004). Pleckstrin homology domain diffusion in dictyostelium cytoplasm studied using fluorescence correlation spectroscopy. J Biol Chem. 279_11:10013-9.
→ Abstract in PubMed.org

2.) G. Bose, P. Schwille P and T. Lamparter (2004). The Mobility of Phytochrome within Protonemal Tip Cells of the Moss Ceratodon purpureus, Monitored by Fluorescence Correlation Spectroscopy. Biophys J. 87_3:2013-21
→ Abstract in PubMed.org

3.) H.A. Ro, J.H. Carson (2004). pH microdomains in oligodendrocytes . J Biol Chem. 279_35:37115-23.
→ Abstract in PubMed.org

Pharmacology

1.) S.J. Briddon, R.J. Middleton, A.S. Yates, M.W. George, B. Kellam, S.J. Hill (2004) Application of fluorescence correlation spectroscopy to the measurement of agonist binding to a G-protein coupled receptor at the single cell level. Faraday Discuss. 126:197-207
→ Abstract in PubMed.org

2.) S.J. Briddon, R.J. Middleton, Y. Cordeaux, F.M. Flavin, J.A. Weinstein, M.W. George, B. Kellam, S.J. Hill (2004). Quantitative analysis of the formation and diffusion of A1-adenosine receptor-antagonist complexes in single living cells. Proc Natl Acad Sci U S A. 101_13:4673-8
→ Abstract in PubMed.org

3.) P. Rigler, W. Meier(2006). Encapsulation of fluorescent molecules by functionalized polymeric nanocontainers: investigation by confocal fluorescence imaging and fluorescence correlation spectroscopy. J Am Chem Soc. 128(1):367-73
→ Abstract in PubMed.org

Nuclear Dynamics

1.) L. Schmiedeberg, K. Weisshart, S. Diekmann, G. Meyer Zu Hoerste, P. Hemmerich (2004). High- and low-mobility populations of HP1 in heterochromatin of mammalian cells. Mol Biol Cell. 15_6:2819-33.
→ Abstract in PubMed.org

Single-molecule

1.) Z. Foldes-Papp Z. (2006) What it means to measure a single molecule in a solution by fluorescence fluctuation spectroscopy. Exp Mol Pathol. 80(3):209-18.
→ Abstract in PubMed.org

Fluorescent Proteins

1.) T. Kogure, S. Karasawa, T. Araki, K. Saito, M. Kinjo, A. Miyawaki (2006). A fluorescent variant of a protein from the stony coral Montipora facilitates dual-color single-laser fluorescence cross-correlation spectroscopy. Nat Biotechnol. 24(5):577-81
→ Abstract in PubMed.org

Protein Conformation

1.) K. Chattopadhyay, E.L. Elson, C. Frieden C (2005). The kinetics of conformational fluctuations in an unfolded protein measured by fluorescence methods. Proc Natl Acad Sci U S A. 15;102(7):2385-9.
→ Abstract in PubMed.org

2.) K.. Chattopadhyay, S. Saffarian, E.L. Elson, C. Frieden (2005). Measuring unfolding of proteins in the presence of denaturant using fluorescence correlation spectroscopy. Biophys J. 88(2):1413-22.
→ Abstract in PubMed.org