SUSANA ANGELICA SANCHEZ DONOSO

DOCTOR EN CIENCIAS QUIMICAS, PONTIFICIA UNIVERSIDAD CATÓLICA DE VALPARAÍSO, VALPARAÍSO, CHILE, 1997, CHILE

LÍNEA(S) DE INVESTIGACIÓN O ÁREAS DE TRABAJO

- ✓ INTERACCIONES PROTEÍNA-PROTEÍNA, LÍPIDO-PROTEÍNA, LÍPIDO-LÍPIDO

LISTADO DE PUBLICACIONES EN LOS ÚLTIMOS 10 AÑOS

Noindexada (por ejemplo, libros, capítulos de libro, revistas con referato):

J.D.Bell, S.A.Sánchez, T.L.Hazlett. Liposomes to Study Phospholipase A2 Activity. Liposomes, Part B. Methods in Enzymology, Vol. 372. By N Duzgunes (Editors). Academic Press, pp. 19-48, 2003. ISBN: 9780121822750.

L.A.Bagatolli, S.A.Sánchez, T.Hazlett, E.Gratton. Giant Vesicles, Laurdan, and Two-photon Fluorescence Microscopy: Evidence of Lipid Lateral Separation in Bilayers. Biophotonics, Part A. Methods in Enzymology, Vol. 360. By G Marriott and I Parker (Editors). Academic Press, pp. 481-500, 2003. ISBN: 9780121822637.

S.A.Sánchez, M.A.Tricerri, G.Gunther, E.Gratton. Laurdan Generalized Polarization: from cuvette to microscope. Modern Research and Educational Topics in Microscopy. Vol. 3: Applications in Physical/Chemical Sciences (Microscopy Book Series, Vol. 3). By A Méndez-Vilas and J Díaz (Editors). Formatex Research Center, Badajoz, Spain, pp. 1007-1014, 2007. ISBN: 9788461194209

S.A.Sánchez, M.A.Tricerri, E.Gratton. Detecting cholesterol changes in lipid bilayers. Bioworld Europe. 01: 8-11, 2008.

Indexadas

Sánchez S.A., Méndez-Barbero N, Santos-Beneit A. M., Esteban Vázquez V., Jiménez-Borreguero L.J., Campanero M.R., Redondo J.M. *"A nonlinear optical 3D method for quantifying aterosclerosis burden".* **Aceptado en Cardiovascular Imaging**

Jaureguiberry MS, Tricerri MA, Sanchez SA, Finarelli GS, Montanaro MA, Prieto ED, Raimondi OJ. *"Role of plasma membrane lipid composition on cellular homeostasis: learning from cell line models expressing fatty acid desaturases".* **Acta Biochimica et Biophysica Sinica. 46(4):273-82, 2014.**

Méndez-Barbero N., Esteban V., Villahoz S., Escolano A., Urso K., Alfranca A., Rodríguez C., Sánchez S.A., Osawa T., Andrés V., Martínez-González J., Minami T., Redondo J.M., Campanero M.R. *"A major role for RCAN1 in atherosclerosis progression".* **EMBO Molecular Medicine 5(12):1901-17, 2013.**

Sánchez S.A., Tricerri M.A., Gratton E. *"Laurdan generalized polarization fluctuations measures membrane packing micro-heterogeneity in vivo"* **Proc. Natl. Acad. Sci. USA. 109(19):7314-9, 2012.**

F. Montecinos-Franjola, J.A. Ross, S. A. Sánchez, J.E. Brunet, R.Lagos, D.M. Jameson and O.Monasterio. *"Studies on the Dissociation and Urea-Induced Unfolding of FtsZ Support the Dimer Nucleus Polymerization Mechanism".* **Biophys J 102(9): 2176-2185, 2012**

L. F. Aguilar, J. A. Pino, M.A. Soto-Arriaza, F. J. Cuevas, S. Sánchez, C.P. Sotomayor. *"Differential Dynamic and Structural Behavior of Lipid-Cholesterol Domains in Model Membranes".* **PLoS One. 2012; 7(6): e40254**

Sánchez S.A, Gratton E., Zanocco A.L, Lemp E, Gunther G. *"Sucrose Monoester Micelles Size Determined by Fluorescence Correlation Spectroscopy (FCS)".* **PLoS One. 2011;6(12):e29278***.*

Ramella N.A., Rimoldi O.J., Prieto E.D., Schinella G.R., Sánchez S.A., Jaureguiberry M.S., Vela M.E., Ferreira S.T., Tricerri M.A*. "Human apolipoprotein A-I-derived amyloid: its association with atherosclerosis".* **PLoS One. 2011; 6(7):e22532***.*

G.Caracciolo, D.Pozzi, A.Capriotti, C.Marianecci, M. Carafa, C.Marchini, M.Montani, A.Amici, H.Amenitsch, M.Digman, S. Sánchez, E.Gratton, A.Laganà. *"Factors determining the superior performance of LPD nanoparticles over Lipoplexes".* **J Med Chem. 2011; 54(12): 4160–4171**

S.A. Sánchez, L. Bakás, E.Gratton, V.Herlax. *"Alpha Hemolysin induces an increase of erythrocytes calcium: a FLIM two-photon phasor analysis".* **PLoS One. 2011; 6(6): e21127.**

C.Marchini, D. Pozzi, M. Montani, C. Alfonsi, A. Amici, S. Candeloro De Sanctis, M.A. Digman, S.A. Sánchez, E. Gratton, H. Amenitsch, A. Fabbretti, C.O. Gualerzi, and G. Caracciolo. *"Role of temperature-independent lipoplex-cell membrane interactions in the efficiency boost of multicomponent lipoplexes".* **Cancer Gene Therapy 18, 543-552, 2011.**

Sánchez S.A., Gunther G, Tricerri MA, Gratton E. *"Methyl-beta-cyclodextrins preferentially removes cholesterol from the liquid disordered phase in Giant Unilamellar Vesicles".* **J Membr. Biol. 2011 May; 241(1):1-10.**

M.J.Behne, S.A.Sánchez, N.P.Barry, N.Kirschner, W.Meyer, T.M.Mauro, I.Moll, and E.Gratton. *"Major translocation of calcium upon epidermal barrier insult: imaging and quantification via FLIM/Fourier vector analysis***". Arch. Dermatol. Res. 2011; 303(2): 103-115**

S.Sánchez. *"Book Review: Handbook of Biomedical Nonlinear Optical Microscopy".* **B R Masters and P T C So. Oxford University Press, 2008. Microsc. Microanal.2010; 16(6): 842.**

S.A.Sánchez, M.A.Tricerri, G.Ossato, and E.Gratton*. "Lipid packing determines protein-membrane interactions: Challenges for apolipoprotein A-I and High Density Lipoproteins"* **Biochim. Biophys. Acta. 2010; 1798(7): 1399-1408.**

M.S.Jaureguiberry, M.A.Tricerri, S.A.Sánchez, H.A.Garda, G.S.Finarelli, M.C. Gonzalez, and O.J.Rimoldi. *"Membrane organization and regulation of cellular Cholesterol homeostasis".* **J Membr. Biol. 2010; 234(3): 183-194.**

A.Celli, S.A.Sánchez, M.J.Behne, T.L.Hazlett, E.Gratton, and T.M.Mauro. *"The Epidermal Ca2+ Gradient: Measurement Using the Phasor Representation of Fluorescent Lifetime Imaging"* **Biophys J. 2010; 98(5): 911-921**

M.F.Henning, S.A.Sánchez, and L.Bakás. *"Visualization and analysis of lipopolysaccharide distribution in binary phospholipid bilayers".* **Biochem. Biophys. Res. Commun. 2009; 383(1): 22-26.**

G.Caracciolo, M.A.Digman, E.Gratton, S.A.Sánchez and R.Caminiti. *"Efficient escape from endosomes determines the superior efficiency of multicomponent lipoplexes."* **J Phys. Chem. B. 2009; 113(15): 4995–4997.**

C.Toro, S.A.Sánchez, A.Zanocco, E.Lemp, E Gratton, G.Gunther. *"Solubilization of lipid bilayers by myristyl sucrose ester: effect of cholesterol and phospholipid head group size.* **Chem. Phys. Lipids. 2009; 157(2): 104-112.**

S.Kwok, CY.Lee, S.A.Sánchez, T.L.Hazlett, E.Gratton, Y.Hayashi. *"Genetically encoded probe for fluorescence lifetime imaging of CaMKII activity".* **Biochem Biophys Res. Commun. 2008; 369(2): 519-525.**

A.Garcia-Marcos, S.A.Sánchez, P.Parada, J.Eid, D.M.Jameson, E.Gratton, J.P.G. Ballesta*. "Yeast ribosomal stalk heterogeneity in vivo show by two-photon FCS and molecular brightness analysis".* **Biophys J 94(7): 2884-2890, 2008.**

S.A.Sánchez, M.A.Tricerri, E.Gratton. *"Interaction of High Density Lipoprotein particles with membranes containing cholesterol".* **J Lipid Res 48: 1689-1700 (2007).**

C.Nicolini, J.Baranski, S.Schlummer, J.Palomo, M.Lumbierres-Burgues, M.Kahms, J.Kuhlmann, S.A.Sánchez, E.Gratton, H.Waldmann, R.Winter. *"Visualizing association of N-Ras in lipid microdomains: Influence of domain structure and interfacial adsorption".* **JACS 128: 192-201 (2006).**

S.A.Sánchez and E.Gratton. *"Lipid-protein interactions revealed by two-photon microscopy and Fluorescence Correlation Spectroscopy".* **Acc. Chem. Res. 38(6):469-77 (2005).**

C.Arnulphi, S.A.Sánchez, M.A.Tricerri, E.Gratton, A.Jonas*. "Interaction of human Apolipoprotein A-I with model membranes exhibiting lipid domains".* **Biophys J. 2005 Jul; 89(1):285-95.**

M.A.Tricerri, J.D.Toledo, S.A.Sánchez, T.L.Hazlett, E.Gratton, A.Jonas, H.A.Garda. *"Visualization and analysis of apolipoprotein A-I interaction with binary phospholipid bilayers".* **J. Lipid Res. 46: 669-678 (2005).**

S.A.Sánchez, J.E.Brunet, D.M.Jameson, R.Lagos, O.Monasterio*. "Tubulin equilibrium unfolding followed by time-resolved fluorescence and fluorescence correlation spectroscopy".* **Protein Sci.13 (1):81-88 (2004).**

LISTADO DE PROYECTOS DE INVESTIGACIÓN EN LOS ÚLTIMOS 10 AÑOS

- ✓ *2014-2018-Fondecyt No 1140454*

Titulo: optimizing cholesterol removal by HDL nanodiscs: a two-photon microscopy approach
Investigador: Susana Sánchez (Universidad de Concepción)
Co-investigador: Germán Gunther (Universidad de Chile)
En ejecución
Rol: Investigador Principal (12 horas)

- ✓ *2014-2018 Fondecyt No 1140473.*

Titulo: Molecular determinants for neurotoxic actions of A-beta peptide
Investigador: Luis Aguayo, Universidad de Concepción
Co-investigador:
En ejecución
Rol: Co-investigador (4 horas)

- ✓ *2012-2015-Fondecyt No 1120196:*

Titulo: Supramolecular systems of sucrose glycerate devatives studied by means of fluorescent techniques
Investigador: German Gunther Sapunar (Universidad de Chile)
Co-investigador: Susana Sánchez Donoso (Universidad de Concepción)
En ejecución
Rol: Co-investigador (4 horas) desde 2014

- ✓ *2011-2016- Conicyt (Programa de Investigación Asociativa, PIA) ECM-12-*

Titulo: Centro de Microscopia en la Región de Bio Bio
Director: Francisco Nualart (Universidad de Concepción)
En ejecución
Rol. Miembro Comité Asesor del Centro de Microscopia (5 horas)

- ✓ *Marzo 2012- Marzo 2016. Fondecyt#1120196, Chile.*
  Supramolecular systems of sucrose glycerate devatives studied by means of fluorescent techniques. Monto total: 8400 USD. Role: Investigador Extranjero de Contraparte

- ✓ *Marzo 2008- Marzo 2011. Fondecyt#1080412, Chile.*
  Physical chemical characterization of pure sucrose monoesters reverses micelles by means of fluorescent techniques. Monto total 8400 USD. Role: Investigador Extranjero de Contraparte.

- ✓ *Mayo 2008. Fluorescence Applications in Biotechnology and Life Sciences. FABLS Support Scheme for Emerging Research Projects. Round 1. Macquarie University, Australia.*
  Characterization of plasma membrane lateral heterogeneity by two-photon excitation fluorescence microscopy. Monto U$S 11.335. Role: co-director.

- ✓ *Junio 2008. Consejo Nacional de Investigaciones Científicas y Tecnológicas (CONICET) Argentina. Cooperación internacional con el Laboratory for Fluorescente Dynamics. Interacción de proteínas nativamente desplegadas con micro dominios de membrana plasmáticas de distintas células. Resol Nº 1369, $31200.Argentina. Rol:co-director.*

- ✓ *Marzo 2008. FONDECYT #7080200 Chile, Incentivo a la cooperación internacional. Dinámica de nanosegundos en Na,K-ATPasa: Rol de dominios lipídicos segregados en su flexibilidad conformacional y funcion. 03-2008 a 03-2009. Monto total: 2000 USD. Role: Investigador Extranjero de Contraparte*

- ✓ *Marzo 2007. FONDECYT # 7070321 Chile, Incentivo a la cooperación internacional.Dinámica de nanosegundos en Na,K-ATPasa: Rol de dominios lipídicos segregados en su flexibilidad conformacional y funcion. 03-2007 a 03-2008. Monto total: 3800 UDS. Role: Investigador Extranjero de Contraparte*

- ✓ *(Agosto 1, 2006- Julio 31, 2011). National Institutes of Health USA, PHS 2P41 RR003155-21-25. The Laboratory for Fluorescence Dynamics. Investigador Principal Enrico Gratton. Monto total: $3,998,500 USD. Role: Investigador y Coordinador de Usuarios.*

- ✓ *Mayo 2012. Fundación Antorchas. Subsidio de colaboración entre grupos locales y extranjeros, entre Tricerri, MA. y Arnulphi, C. (INIBIOLP-Argentina), y SA. Sánchez y E. Gratton (Laboratory for Fluorescence Dynamics-University of Illinois at Urbana-Champaign, USA). Monto 7.000 pesos. Buenos Aires, Argentina. Rol: co director.*

- ✓ *Agosto 1, 2001- Julio 31, 2006. National Institutes of Health USA, PHS P41 RR 03155-16-20, The Laboratory for Fluorescence Dynamics. Investigador Principal Enrico Gratton. Monto total: $3,700,000.USD. Role: Investigador y Coordinador de Usuarios.*