

BIOGRAPHICAL SKETCH

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NAME R. L. Juliano, Ph.D.	POSITION TITLE		
eRA COMMONS USER NAME RUDY JULIANO	Professor		
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Cornell University	B.S.	1963	Physics
University of Rochester	Ph.D.	1971	Biophysics
Roswell Park Memorial Institute	Postdoc.	1970-72	Cell Biology

A. Positions and Honors**PROFESSIONAL EXPERIENCE:**

1972-1978 Investigator, Research Institute, Hospital for Sick Children, Toronto
 1973-1978 Assistant Professor of Biophysics, University of Toronto, Ontario
 1978-1982 Associate Professor of Pharmacology, Univ. of Texas Medical School, Houston, TX
 1982-1986 Professor of Pharmacology, Univ. Texas Medical School, Houston, TX
 1987-2002 Professor and Chair, Department of Pharmacology, University of North Carolina at Chapel Hill, Chapel Hill, NC
 12/2002- Professor, Department of Pharmacology, University of North Carolina
 1993 Fogarty Fellow, Wellcome-CRC Institute, Cambridge, UK

PROFESSIONAL SERVICE:

NSF Cell Biology Review Panel (1980-1983); NIH Pharmacological Science Study Section (1991-1995); Burroughs Wellcome Foundation, Grants Advisory Committee (1992-1995); Associate Editor, *Cancer Research* (1981-1989); Editor, *Advanced Drug Delivery Reviews* (1989-1993); Associate Editor, *Molecular Pharmacology* (1990-1995); Editorial Board, *Cell Adhesion and Communication* (1993-2001); Editorial Board, *Antisense Research and Development* (1993-2003); Editorial Board, *Oligonucleotides* (2003-); Editorial Board, *Pharmaceutical Research* (1995-2004); Editorial Board, *Biochimica et Biophysica Acta* (1997-2005); *Faculty of 1000* (2004-); Editorial Board, *J. Cell Biology* (1991-1994; 2001-07); Editorial Board, *J. Drug Targeting* 2005-2008; Chair, Gordon Research Conference on Liposomes (1987); Chair, NY Academy of Sciences Symposium on Drug Delivery (1987); co-Chair, Keystone Symposium "Cell adhesion receptors" (1997); co-Chair Keystone Symposium, "Signaling via cell-cell interactions" (2003); Awards Committee ASPET (1990, 1995); Program Committee AACR (1991); Program Committee ASPET (1994-1997); Council, Association for Medical School Pharmacology (1998-2001); ASPET Public Policy Committee (2001-04).

B. Recent Publications:

Kang H, DeLong R, Fisher MH, Juliano RL. Tat-Conjugated PAMAM Dendrimers as Delivery Agents for Antisense and siRNA Oligonucleotides. *Pharm Res.* 2005 Oct 1; [Epub ahead of print]
 Reddig PJ, Xu D, Juliano RL. Regulation of p21-activated kinase-independent Rac1 signal transduction by Nischarin. *J Biol Chem.* 2005 280:30994-1002.
 Juliano RL. Peptide-oligonucleotide conjugates for the delivery of antisense and siRNA. *Curr Opin Mol Ther.* 2005 7(2):132-6. (Review).
 Chaltin P, Margineanu A, Marchand D, Van Aerschot A, Rozenski J, De Schryver F, Herrmann A, Mullen K, Juliano R, Fisher MH, Kang H, De Feyter S, Herdewijn P. Delivery of antisense oligonucleotides using

- cholesterol-modified sense dendrimers and cationic lipids. *Bioconjug Chem.* 2005 16(4):827-36
- Xu D, McCarty D, Fernandes A, Fisher M, Samulski RJ, Juliano RL. Delivery of MDR1 Small Interfering RNA by Self-Complementary Recombinant Adeno-Associated Virus Vector. *Mol Ther.* 11:523-30, 2005.
- Juliano RL, Dixit VR, Kang H, Kim TY, Miyamoto Y, Xu D. Epigenetic manipulation of gene expression: a toolkit for cell biologists. *J Cell Biol.* 169:847-857, 2005 (Review)
- Edin M and Juliano RL. Raf-1 Serine 338 Phosphorylation Plays a Key Role in Adhesion-Dependent Activation of ERK by EGF. *Mol. Cell. Biol.*, 25:4466-4475, 2005
- Kang H, Fisher MH, Xu D, Miyamoto YJ, Marchand A, Van Aerschot A, Herdewijn P, Juliano RL. Inhibition of MDR1 gene expression by chimeric HNA antisense oligonucleotides. *Nucleic Acids Res.*;32:4411-9, 2004
- Xu D, Kang H, Fisher M, Juliano RL. Strategies for the inhibition of MDR1 gene expression. *Mol. Pharmacol.*, 66(2):1-8, 2004
- Alahari SK, Reddig PJ, Juliano RL. The integrin binding protein Nischarin regulates cell migration by inhibiting PAK. *EMBO J*, 23:2777-88, 2004.
- Astriab-Fisher A, Fisher M, Juliano RL, Herdewijn P. Increased uptake of antisense oligonucleotides by delivery as double stranded complexes. *Biochem. Pharmacol.*, 68:403-7, 2004.
- Juliano RL, Reddig P, Alahari S, Edin M, Howe A, Aplin A. Integrin regulation of cell signaling and motility. *Biochem Soc Trans.* 32(Pt3):443-6, 2004 (review)
- Falke D, Fisher M, Juliano, RL. Selective transcription of p53 target genes by zinc finger-p53 DNA binding domain chimeras. *Biochim Biophys Acta.* 2004 Nov 24;1681(1):15-27.
- Xu D, Falke D, Juliano RL. P53 dependent cell killing by selective repression of thymidine kinase and reduced pro-drug activation. *Mol. Pharmacol.*, 64(2):289-97, 2003
- Laakko T, Juliano RL. Adhesion regulation of stromal cell-derived factor-1 activation of ERK in lymphocytes by phosphatases. *J Biol Chem.* 278(34):31621-8, 2003.
- Falke D, Juliano RL. Selective gene regulation with designed transcription factors: implications for therapy. *Curr Opin Mol Ther.* 5: 161-166, 2003 (review).
- Falke D and Juliano RL. Design of artificial transcription factors to selectively regulate the pro-apoptotic bax gene. *Nucleic Acids Res*, 31(3):e10, 2003
- Juliano R. Movin' on through with Cdc2. *Nature Cell Biol.* 5:589-90, 2003. (review).
- Howe AK, Hogan BP, Juliano RL. Regulation of vasodilator-stimulated phosphoprotein phosphorylation and interaction with Abl by protein kinase A and cell adhesion. *J Biol Chem.* 277:38121-6, 2002
- Palmieri D, Lee JW, Juliano RL, Church FC. Plasminogen activator inhibitor-1 and -3 increase cell adhesion and motility of MDA-MB-435 breast cancer cells. *J Biol Chem.* 277(43):40950-7, 2002
- Aplin AE, Hogan BP, Tomeu J, Juliano RL. Cell adhesion differentially regulates the nucleocytoplasmic distribution of active MAP kinases. *J Cell Sci.* 115:2781-90, 2002
- Xu D, Ye D, Fisher M, Juliano RL. Selective inhibition of P-glycoprotein expression in multidrug-resistant tumor cells by a designed transcriptional regulator. *J Pharmacol Exp Ther.* 302:963-71, 2002.
- Fisher AA, Ye D, Sergueev DS, Fisher MH, Shaw BR, Juliano RL. Evaluating the specificity of antisense oligonucleotide conjugates. A DNA array analysis. *J Biol Chem.* 277:22980-4. 2002.
- Ye, D. and Juliano. Evaluation of strategies for the intracellular delivery of proteins. *Pharm. Res.* 19:1302-9, 2002
- Howe, A., Aplin, A., Juliano, R.L. Anchorage-dependent ERK signaling-mechanisms and consequences. *Current Opinion in Genetics & Development.* 12: 30-35, 2002 (review).
- Astriab-Fisher A, Sergueev D, Fisher M, Shaw BR, Juliano RL. Conjugates of antisense oligonucleotides with the Tat and antennapedia cell-penetrating peptides: effects on cellular uptake, binding to target sequences, and biologic actions. *Pharm Res.* 19:744-54,2002.
- Lee, J., Juliano, RL. The alpha5beta1 integrin selectively enhances epidermal growth factor signaling to the phosphatidylinositol-3-kinase/Akt pathway in intestinal epithelial cells. *Biochem. Biophys. Acta.* 1542: 23-31, 200
- Juliano, R.L. Signal Transduction by Cell Adhesion Receptors and the Cytoskeleton: Functions of Integrins, Cadherins, Selectins, and Immunoglobulin-Superfamily Members. *Annual Review of Pharmacology and Toxicology.* 42. 283-323, 2002 (review).
- Aplin, A.E., Stewart, S.A. Assoian, R.K. and Juliano, R.L. Integrin mediated adhesion regulates ERK nuclear translocation and phosphorylation of Elk-1. *J. Cell. Biol.*153:273-281, 2001

- Edin, M., Howe, A., Juliano, R. Inhibition of PKA blocks fibroblast migration in response to growth factors. *Exp. Cell Res.* **270**: 214-222, 2001.
- Juliano, R., Aplin, A., Howe, A., Short, S., Lee, J., Alahari, S. Integrin regulation of receptor tyrosine kinase and G protein-coupled receptor signaling to mitogen-activated protein kinases. *Methods Enzymology*, **333**. 151-163, 2001(review).
- Juliano, R.L., Astriab-Fisher, A., Falke, D. Macromolecular therapeutics: Emerging strategies for drug discovery in the postgenome era. *Molecular Interventions*, **1**:40-53, 2001 (review).
- Aplin, A., Juliano, R.L. Regulation of nucleocytoplasmic trafficking by cell adhesion receptors and the cytoskeleton. *J Cell Biol.* **155**: 187-191, 2001 (review).
- Bartsevich, V.V., Juliano, R.L. Regulation of the MDR1 gene by transcriptional repressors selected using peptide combinatorial libraries. *Mol. Pharmacol.* **58**:1-10, 2000
- Alahari, S, Lee J.W. and Juliano R.L. Nischarin, a novel protein that interacts with the integrin $\alpha 5 \beta 1$ subunit and inhibits cell migration. *J. Cell. Biol.* **151**:1141-54, 2000
- Howe, A. and Juliano, R.L. Regulation of anchorage dependent signal transduction by protein kinase A and p21 activated kinase. *Nature Cell Biol.* **2**:593-600, 2000.
- Lee, J.W., Juliano, J.L. $\alpha 5 \beta 1$ Integrin protects intestinal epithelial cells from apoptosis through a phosphatidylinositol 3-kinase and protein kinase B dependent pathway. *Mol. Biol. Cell.* **11**:1973-87, 2000.

C. Research Support

Active:

Title: Targeting Cancer Cell DNA with Combinatorial Ligands

Principal Investigator: R.L. Juliano

Agency: NCI

Type: RO1 CA77340

Period: 04/01/2001 - 03/31/2006

To use combinatorial libraries to identify novel peptides that are capable of sequence-specific recognition of ds DNA. These will be used to selectively regulate cancer-associated genes.

Title: Structure and Function of Vascular Integrins

Principal Investigator: L. Parise

Agency: NIH/NHLBI

R.L. Juliano PI Project 4

Type: PO1 HL4500

Period: 07/01/2003 - 06/30/2008

To understand the role of integrins in the vascular system.

Title: The Pharmacodynamics of Genes and Oligonucleotides

Principal Investigator: R.L. Juliano

Agency: NIGMS

Type: PO1 GM59299

Period: 04/01/2005 - 3/31/2010

To understand the biodistribution and pharmacodynamics of genes and oligonucleotides so as to improve their therapeutic characteristics.

Title: Major Challenges in Clinical Medicine: An Overview for Basic Scientists

Principal Investigator: R.L. Juliano

Agency: NIDDK

Type: R13DK073239

Period: 09/30/05 - 09/29/2007

The overall goal of this training program is to interest basic scientists in translational research.

Title: Carolina Center for Cancer Nanotechnology Excellence

Principal Investigator: R.L. Juliano

Agency: NCI

Type: U54 CA119343

Period: 09/30/05 - 08/31/2010

The overall goal of this center is to develop novel nanotechnology approaches for cancer diagnosis and treatment.