

Nome: **Stephan Joel RESHKIN**

Nato: Luglio 7, 1950  
Kansas City, MO, USA

Cittadinanza: USA/Italy

Indirizzo Lavoro: Dipartimento di Bioscienze, Biotecnologie e Biofarmaceutica  
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### **Attività Accademica**

1995-2005 Ricercatore Confermato; presso Dipartimento di Fisiologia Generale ed Ambientale, Univ. degli Studi di Bari, Italia

2005-presente Professore Associato; presso Dipartimento di Fisiologia Generale ed Ambientale, Univ. degli Studi di Bari, Italia

### **Istruzione e formazione**

1981-1984 Laurea in Scienze Biologiche presso l'Università di California Santa Cruz (110/110 e lode)

1985-1988 Dottorato di Ricerca; presso il laboratorio di Dr. G.A. Ahearn, Dipartimento di Zoologia, Univ. of Hawaii, USA

1988-1990 Ricercatore Post-Dottorato; laboratorio di Dr. H. Murer, Dipartimento di Fisiologia della Facoltà di Medicina dell'Università di Zurigo, Svizzera.

1991-1992 Ricercatore, National Institutes of Health, Bethesda, USA

1993 Professore a Contratto; Istituto di Fisiologia Generale, Univ. di Bari, Bari, Italia.

1993-1995 Ricercatore a Contratto; presso l'Istituto Oncologico, Bari, Italia.

### **Onori e Premi ricevuti**

1986: Sigma Xi scholarship

1988: Achievement Rewards for College Scientists (ARCS) academic award

1993: Premio di Studio dal "L'Accademia Nazionale di Medicina Forum per la Formazione Biomedica"

### **Attività didattica**

- 1999-2000 Course of “Physiology of Aquatic Animals” for the specialization entitled: “Marine Biochemistry and Biotechnology applied to fishing and to aquaculture” at the Medicine Faculty of the University of Bari.
- 2000-2001 Course of “Physiology of marine organisms” in the Natural Sciences of the Faculty of Science of the University of Bari.
- 2001-2010 Course of “Environmental Physiology” as his institutional teaching duty for the triannual program in Biology Applied to the Ecosystems of the Faculty of Science of the University of Bari.
- 2001-2010 Course of “Cellular and Molecular Techniques in Physiology” as an adjunctive duty for the triannual program in Cellular and Molecular Biology of the Faculty of Science of the University of Bari.
- 2010-present Course of “Environmental Physiology” as his institutional teaching duty for the program Magistrale in Biology Applied to the Ecosystems of the Faculty of Science of the University of Bari.
- 2010-present Course of “Molecular Physiology” as an institutional teaching duty for the program Magistrale in Cellular and Molecular Biology of the Faculty of Science of the University of Bari.
- 2000-present Prof. Reshkin is part of the college of docents in the Doctoral Program “Cellular and Molecular Techniques in Physiology” in which he teaches ‘Scientific English Writing and Communication’ in addition to his role in mentoring the doctoral students assigned to him.

### **Direzione di Progetti da 2000**

- 2000: Finanziamento dell’ CNR. 99.02574.CT04 for project entitled “Analisi dei meccanismi cellulari implicati nell’attività antineoplastica dei Taxani in linee cellulari mammarie tumorali: effetti biologici e trasduzione del segnale.” £ 10.000.000
- 2001-2002: Finanziamento dell’ Associazione Italiana per la Ricerca contro il Cancro (AIRC): “Early events in Papillomavirus transformation: the elucidation of alterations in signal transduction pathways”. € 40.000,00
- 2002-2003 Finanziamento dell’ MIUR-CNR PROGETTO “ONCOLOGIA”, Sottoprogetto 3 “DIAGNOSTICA MOLECOLARE IN ONCOLOGIA” for project entitled: “Rilevazione delle alterazioni mitocondriali e della omeostasi cellulare in fluidi biologici come marcatori di diagnosi precoce di cancerogenesi”. € 46,000,00
- 2003-2005 Finanziamento dell’ FIRB-MUIR RBAU01B3A3 for project entitled: “Ruolo della variante di splicing dell’integrina Beta1C nel ciclo cellulare, trasformazione neoplastica e apoptosi delle cellule mammarie umane.” € 90.000,00

2007	Funds of the Ateneo “Role of NHE1 proton transporter in cell invasion“
2007-2009	Finanziamento dell’ Associazione Italiana per la Ricerca contro il Cancro (AIRC): “Role of disturbed pH dynamics and the NHE1 proton transporter in tumor invasion and bone metastasis”.
2007-2009	Italian Health Ministry Strategic Grant ‘Progetto Oncologico Progetto 3, U.O. n. 3’ “The role of stromal cells in tumor growth and dissemination”
2008-2009	Vigoni-DAAD Italy-Germany. “The differential role of NHE1 in tumor cell motile and invasive behaviors”
2010	Progetto dell’ Fondazione per la Ricerca sulla Fibrosi Cistica (FFC#8/2010) “Decreased apical expression of CFTR by Pseudomonas aeruginosa infection: role of NHERF1 phosphorylation”.
2010-2015	Progetto BioBanca Oncologica Pugliese (BioPOP) “Network per l'utilizzo di tessuti oncologici controllati e caratterizzati per lo sviluppo di nuovi approcci diagnostici, farmacologici e biomedicali.”
2011-2012	Progetto dell’ Fondazione per la Ricerca sulla Fibrosi Cistica (FFC#3/2011) “Role of spatial cAMP/PKA compartmentalization and activity in regulating CFTR function”.
2011-2012	Progetto PRIN “Reciprocal cross-talk between integrins and the NHE1 (Na <sup>+</sup> /H <sup>+</sup> exchanger) during cancer cell invasion: molecular and functional characterization and identification of inhibition strategies”
2012-2014	Finanziamento dell’ Associazione Italiana per la Ricerca contro il Cancro (AIRC): “NHE1 and integrin cross-talk in invadopodia: molecular & functional characterization & therapeutic strategies”
2011-2015	Progetto SEVENTH FRAMEWORK; FP7-PEOPLE-2011-ITN; project number 289648; “IonTraC- Ion Transport Proteins in Control of Cancer Cell Behaviour”

#### **Editorial positions**

**Invited Editor** of a Special Issue of “Seminars in Cancer Biology” 2017 “**The new pH-centric paradigm in basic and clinical oncology research.**”

#### **Associazione a Società scientifiche**

American Society of Physiology  
 American Society of Cell Biology  
 American Association for the Advancement of Science  
 American Association of Cancer Research  
 European Society for Cell Proliferation

#### **Reviewer International Journals:**

Nature  
 Nature Reviews Cancer

Nature Medicine  
BMC Genomics  
Cancer Research  
Journal of Biological Chemistry  
Journal of Cellular Physiology  
European Journal of Physiology  
EMBO Reports  
EMBO Journal  
Molecular Carcinogenesis  
Neoplasia  
Oncotarget  
PLoSOne  
PLoS Genetics  
Genes to Cells  
Cancer Letters  
Scientific Reports

**Reviewer Research proposals:**

Swiss National Science Foundation  
Canadian Research Foundation  
National Institutes of Health, USA  
Wellcome Trust, GB  
French National CNRS

**Pubblicazioni**

**96 pubblicazioni su riviste internazionali**

**Ha rapporti di collaborazione con laboratori statunitensi ed europei**

**Pubblicazioni dal 2000**

- 1) Harguindey S, Stanciu D, Devesa, J, Alfarouk K, Cardone RA, Devesa P, Orozco JDP, Rauch C, Orive G, Anitua E, Roger S, **Reshkin SJ**. 2017. Cellular acidification as a new approach to cancer treatment and the understanding and therapeutics of neurodegenerative diseases. *Semin Cancer Biol.* 43: 157-179, S1044-<http://dx.doi.org/10.1016/j.semcancer.2017.02.003> (part of a Special Issue of Seminars in Cancer Biology “The new pH-centric paradigm in basic and clinical oncology research.”)
- 2) Ali I, Alfarouk KO, **Reshkin SJ**, Ibrahim, ME. 2017. Doxycycline as potential anti-cancer agent. *Anticancer Agents Med Chem.* 2017 Feb 13. doi: 10.2174/1871520617666170213111951.
- 3) Harguindey S, Reshkin SJ. 2017. "The new pH-centric anticancer paradigm in Oncology and Medicine"; SCB, 2017. *Semin Cancer Biol.* 43: 1-4. pii: S1044-579X(17)30027-5. doi: 10.1016/j.semcancer.2017.02.008.
- 4) Zeeberg K, Cardone RA, Greco MR, Saccomano M, Nøhr-Nielsen A, Alves F, Pedersen SF, **Reshkin SJ**. 2016. Assessment of different 3D culture systems to study tumor phenotype and chemosensitivity in pancreatic ductal adenocarcinoma (PDAC). *Int. J. Oncol.* 49(1):243-252.
- 5) Kong SC, Nøhr-Nielsen A, Zeeberg K, **Reshkin SJ**, Hoffmann E, Novak I, Pedersen SF. 2016. Monocarboxylate transporters MCT1 and MCT4 regulate migration and invasion of Pancreatic Ductal Adenocarcinoma Cells. *Pancreas* 45:1036-1047
- 6) Atlante A, Favia M, Bobba A, Lorenzo Guerra L, Casavola V, **Reshkin SJ**. 2016. Characterization of Mitochondrial Function in Cells with Impaired Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) Function. *Journal of Bioenergetics and Biomembranes* 48: 197-210.

- 7) Grossi G, Grimaldi A, Cardone RA, Monné M, **Reshkin** SJ, Girardello R, Greco MR, Coviello E, Laurino S and Falabella P. 2016. Extracellular matrix degradation via Enolase/Plasminogen interaction: Evidence for a Mechanism Conserved in Metazoa. *Biology of the Cell* 108:161-178.
- 1) Cardone RA, Greco MR, Zeeberg KL, Zaccagnino A, Saccomano M, Bellizzi A, Bruns P, Menga M, Pilarsky C, Schwab A, Alves F, Kalthoff H, Casavola V, **Reshkin** SJ. 2015. A novel NHE1-centered signaling cassette drives EGFR-dependent pancreatic tumor metastasis and is a target for combination therapy. *Neoplasia* 17(2): 155-166.  
DOI: 10.1016/j.neo.2014.12.003
- 2) Bellizzi A, Greco MR, Rubino R, Paradiso A, Forciniti S, Zeeberg K, Cardone RA, **Reshkin** SJ. 2015. The scaffolding protein NHERF1 sensitizes EGFR-dependent tumor growth, motility and invadopodia function to gefitinib treatment in breast cancer cells. *Inter. J. Oncol.* 46:1214-1224.
- 3) Guerra L, Favia M, Castellani S, Barbuti G, Montemurro P, Diana A, Santostasi T, Polizzi AM, Marigliò MA, Reshkin SJ, Manca A, Casavola V, Conese M. 2015. Antibiotic therapy affects functional behaviour in cystic fibrosis blood mononuclear cells. *Eur Respir J.* 46(2): 558-561.
- 4) Alfarouk KO, Stock CM, Taylor S, Walsh M, Muddathir AK, Verduzco D, Bashir AH, Mohammed OY, Elhassan GO, Harguindey S, **Reshkin** SJ, Ibrahim ME, Rauch C. 2015 Resistance to cancer chemotherapy: failure in drug response from ADME to P-gp. *Cancer Cell Int.* 2015 Jul 15;15:71. doi: 10.1186/s12935-015-0221-1. eCollection 2015
- 5) **Reshkin** SJ, Cardone RA, Greco MR, Zeeberg K, Harguindey S. 2014. Na<sup>+</sup>-H<sup>+</sup> Exchanger, pH Regulation and Cancer. *Topics in Anti-Cancer Research.* vol. 3, p. 384-417, London: Bentham e-books, ISBN: 978-1-60805-909-6, doi: 10.2174/9781608059089114030013
- 6) Alfarouk KO, Verduzco D, Rauch C, Muddathir AK, Adil HH, Elhassan GO, Ibrahim ME, David Polo Orozco J, Cardone RA, Reshkin SJ, Harguindey S. 2014. Glycolysis, tumor metabolism, cancer growth and dissemination. A new pH-based etiopathogenic perspective and therapeutic approach to an old cancer question. *Oncoscience* 1(12):777-802.
- 7) Martino NA, Reshkin SJ, Ciani E and Dell'Aquila E. 2014. Calcium-sensing receptor-mediated osteogenic and early-stage neurogenic differentiation in umbilical cord matrix mesenchymal stem cells from a large animal model. *Plos One* Nov 7; 9(11):e111533. doi: 10.1371/journal.pone.0111533. eCollection 2014.
- 8) Greco MR, Antelmi E, Busco G, Guerra L, Rubino R, Casavola V, Reshkin SJ, Cardone RA. 2014. Protease activity at invadopodial focal digestive areas is dependent on NHE1-driven acidic pH. *Oncology Reports.* 31:940-946
- 9) Reshkin SJ, Greco MR and Cardone RA. 2014. Role of pH<sub>i</sub> and proton transporters in oncogene-driven neoplastic transformation. *Philosophical Transactions of the Royal Society B- Biological Sciences.* Feb 3;369(1638):20130100. doi: 10.1098/rstb.2013.0100.
- 10) Rubino R, Bezzerri V, Favia M, Facchini M, Tebon M, Singh AK, Riederer B, Seidler U, Iannucci A, Bragonzi A, Cabrini G, Reshkin SJ, Tamanini A. 2014. *Pseudomonas aeruginosa* reduces the expression of CFTR via post-translational modification of NHERF1. *Pflugers Arch.* 2014, 466(12):2269-2278
- 11) Favia M, Mancini MT, Bezzerri V, Guerra L, Laselva O, Abbattiscianni AC, Debellis L, Reshkin SJ, Gambari R, Cabrini G, Casavola V. 2014. Trimethylangelicin promotes the functional rescue of mutant F508del CFTR protein in cystic fibrosis airway cells. *Am J Physiol Lung Cell Mol Physiol.* 307(1):L48-61
- 12) Antelmi E, Cardone RA, Greco MR, Rubino R, Di Sole F, Martino NA, Casavola V, Carcangiu M, Moro L, Reshkin SJ. 2013.  $\beta$ 1 integrin binding phosphorylates ezrin at T567 to

activate a lipid raft signalsome driving invadopodia activity and invasion. *PLoS ONE* 8(9): e75113. doi:10.1371/journal.pone.0075113

- 13) Harguindey S, Arranz JL, Polo Orozco JD, Rauch C, Fais S, Cardone RA, Reshkin SJ. 2013. Cariporide and other new and powerful NHE1 inhibitors as potentially selective anticancer drugs -- an integral molecular/biochemical/metabolic/clinical approach after one hundred years of cancer research. *J Transl Med.* 11(1):282.
- 14) Brisson L, Driffort V, Benoist L, Poet M, Counillon L, Antelmi E, Rubino R, Besson P, Labbal F, Chevalier S, Reshkin SJ, Gore J and Roger S. 2013. Nav1.5 sodium channels allosterically regulate the NHE-1 exchanger and promote breast cancer cell invadopodial activity. *J. Cell Sci.* 126:4835-4842.
- 15) Reshkin SJ, Cardone RA, Harguindey S. 2013. Na<sup>+</sup>-H<sup>+</sup> Exchanger, pH Regulation and Cancer. *Recent Pat Anticancer Drug Discov.* 8(1):85-99.
- 16) Daniel C, Bell C, Burton C, Harguindey S, Reshkin SJ, Rauch C. 2013. The role of proton dynamics in the development and maintenance of multidrug resistance in cancer. *Biochim Biophys Acta.* 1832(5): 606-617.
- 17) Muzzachi S, Blasi A, Ciani E, Favia M, Cardone RA, Marzulli D, Reshkin SJ, Merizzi G, Casavola V, Soleti A, Guerra L. 2013. MED1101: a new dialdehydic compound regulating P2×7 receptor cell surface expression in U937 cells. *Biol Cell.* 2013 May 29. doi: 10.1111/boc.201200088.
- 18) Mangia A, Saponaro C, Malfettone A, Bisceglie D, Bellizzi A, Asselti M, Popescu O, Reshkin SJ, Paradiso A, Simone G. 2012. Involvement of nuclear NHERF1 in colorectal cancer progression. *Oncol Rep.* 28(3):889-984.
- 19) Brisson L, Reshkin SJ, Goré and Roger S. 2012. pH regulators in invadosomal functioning: Proton delivery for matrix tasting. *Eur. J. Cell Biol.* 91(11-12):847-860.
- 20) Cardone RA, Greco MR, Capulli M, Weinman EJ, Busco G, Bellizzi A, Casavola V, Antelmi E, Ambruosi B, Dell'Aquila ME, Azzariti A, Paradiso A, Teti A, Rucci N and Reshkin SJ. 2012. NHERF1 acts as a molecular switch to program metastatic behavior and organotropism via its PDZ domains. *Mol. Biol. Cell* 23:2028-2040.
- 21) Monterisi S, Favia M, Guerra L, Cardone RA, Marzulli D, Reshkin SJ, Casavola V, Zaccolo M. 2012. CFTR regulation in human airway epithelial cells requires integrity of the actin cytoskeleton and compartmentalized cAMP and PKA activity. *J Cell Sci.* 125:1106-1117.
- 22) Accardi R, Rubino R, Scalise M, Gheit T, Shahzad N, Thomas M, Banks L, Indiveri C, Sylla BS, Cardone RA, Reshkin SJ, Tommasino M. 2011. E6 and E7 from human papillomavirus type 16 cooperate to target the PDZ protein Na/H exchange regulatory factor-1. *J Virol.* 85:8208-8216.
- 23) Bellizzi A, RA Cardone, A Mangia, F Schittulli, V Casavola, SJ **Reshkin** and A Paradiso. 2011. Na<sup>+</sup>/H<sup>+</sup> exchanger regulatory factor 1 expression levels in blood and tissue predict breast tumour clinical behaviour. *Histopathology* 58(7):1086-95.
- 24) Martino NA, Lange Consiglio A, Cremonesi F, Valentini L, Caira M, Guaricci AC, Ambruosi B, **Reshkin** SJ, Dell'Aquila ME. 2011. Functional expression of the extracellular calcium sensing receptor (CaSR) in equine umbilical cord matrix size-sieved stem cells. *PLoS ONE* Mar 17;6(3):e17714
- 25) Busco G, Cardone RA, Greco MR, Bellizzi A, Colella M, Antelmi E, Mancini MT, Dell'Aquila ME, Casavola V, Paradiso A and Reshkin SJ. 2010. NHE1 promotes invadopodial ECM proteolysis through acidification of the peri-invadopodial space. *FASEBJ* 24: 3903-3015.

- 26) Huber V, De Milito A, Harguindey S, **Reshkin** SJ, Wahl ML, Rauch C, Chiesi A, Pouyssegur J, Gatenby RA, Rivoltini L, Fais S. 2010. Proton dynamics in cancer. *J Transl Med.* 2010 8(1):57
- 27) Favia M, Guerra L, Fanelli T, Cardone RA, Monterisi S, Carrabino S, Reshkin SJ, Conese M, Casavola V. 2010. Ezrin phosphorylation and activation of RhoA play a role in the NHERF1 overexpression-dependent rescue of F508del-CFTR in human airway CFBE41o- cells. *Mol. Biol. Cell* 21:73-86
- 28) Harguindey S, Arranz JL, Wahl ML, Orive G, Reshkin SJ. 2009. Proton transport inhibitors as potentially selective anticancer drugs. *Anticancer Res.* 29(6):2127-36.
- 29) Mangia A, Chiriatti A, Bellizzi A, Malfettone A, Stea B, Zito FA, **Reshkin** SJ, Simone G and Paradiso A. 2009. Biological role of NHERF1 protein expression in breast cancer. *Histopathology* 55:600-608
- 30) De Santis T, Casavola V, **Reshkin** SJ, Guerra L, Ambruosi B, Fiandanese N, Dalbies-Tran R, Goudet G, Dell'Aquila ME. 2009. The extracellular calcium-sensing receptor is expressed in the cumulus-oocyte complex in mammals and modulates oocyte meiotic maturation. *Reproduction.* 138(3):439-52.
- 31) Cardone RA, Busco G, Greco MR, Bellizzi A, Accardi R, Cafarelli A, Monterisi S, Carratù P, Casavola V, Paradiso A, Tommasino M, Reshkin SJ. 2008. HPV16 E7-dependent transformation activates NHE1 through a PKA-RhoA-induced inhibition of p38alpha. *PLoS ONE.* 3(10):e3529. doi:10.1371/journal.pone.0003529
- 32) Stock C, Cardone RA, Busco G, Krähling H, Schwab A, and **Reshkin** SJ. 2008. Protons extruded by NHE1: Digestive or Glue? *Eur. J. Cell Biol.* 87: 591-599.
- 33) Bellizzi A, Mangia A, Chiratti A, Petroni S, Quaranta M, Schittulli F, Malfettone A, Cardone RA, Paradiso A, and **Reshkin** SJ. 2008. RhoA protein expression in primary breast cancers and matched lymphocytes is associated with progression of the disease. *Int. J. Mol. Med.* 22:25-31.
- 34) Cardone RA, Bellizzi A, Busco G, Weinman EJ, Dell'Aquila ME, Casavola V, Azzariti A, Mangia A, Paradiso A, and **Reshkin** SJ. 2007. The NHERF1 PDZ2 Domain Regulates PKA-RhoA-p38-mediated NHE1 Activation and Invasion in Breast Tumor Cells. *Mol. Biol. Cell* 18:1768-1780.
- 35) Harguindey S, **Reshkin** SJ, Orive G, Arranz JL, Anitua E. 2007. Growth and trophic factors and the pH, Na<sup>+</sup>/H<sup>+</sup> exchanger in Alzheimer's disease, other neurodegenerative diseases and cancer: New therapeutic possibilities and potential dangers. *Current Alzheimer Res.* 4:53-65.
- 36) Sebastian S, J Settleman, SJ, **Reshkin**, A Azzariti, A Bellizzi, A Paradiso. 2006. The complexity of targeting EGFR signalling in cancer: From expression to turnover. *Biochim. Biophys. Acta. Reviews on Cancer* 1766:120-139.
- 37) Favia M, T Fanelli, A Bagorda, F Di Sole, SJ **Reshkin**, PG Suh, L Guerra, V Casavola. 2006. NHE3 inhibits PKA-dependent functional expression of CFTR by NHERF2 PDZ interactions. *Biochem. Biophys. Res. Commun.* 347:452-459.
- 38) Guerra L, Fanelli T, Favia M, Riccardi SM, Busco G, Cardone RA, Carrabino S, Weinman EJ, **Reshkin** SJ, Conese M, Casavola V. 2005. NHERF1 over-expression modulates CFTR expression and activity in human airway 16HBE14o-cells and rescues deltaF508 CFTR functional expression in cystic fibrosis cells. *J Biol Chem.* 280:40925-40933.
- 39) Cardone RA, V Casavola, SJ **Reshkin**. 2005. The role of disturbed pH dynamics and the Na<sup>+</sup>/H<sup>+</sup> exchanger in metastasis. *Nat. Rev. Cancer* 5: 786-795.

- 40) Harguindey S, G Orive, JL Pedraz, A Paradiso, SJ **Reshkin**, 2005. The role of pH dynamics and the Na<sup>+</sup>/H<sup>+</sup> antiporter in the etiopathogenesis and treatment of cancer. Two faces of the same coin-one single nature. *Biochem. Biophys. Acta Reviews on Cancer* 1756: 1-24.
- 41) Cardone RA, A Bagorda, A Bellizzi, G Busco, L Guerra, A Paradiso, V Casavola, M Zaccollo and SJ **Reshkin**. 2005. PKA gating of a pseudopodial located RhoA/ROCK/p38/NHE1 signal module regulates invasion in breast cancer cell lines. *Mol. Biol. Cell* 16: 3117-3127.
- 42) Paradiso A, RA Cardone, A Bellizzi, A Bagorda, L Guerra, V Casavola and SJ **Reshkin**. 2004. The Na<sup>+</sup>/H<sup>+</sup> exchanger (NHE1) induces cytoskeletal changes involving reciprocal RhoA and Rac1 signaling resulting in motility and invasion in MDA-MB-435 cells. *Breast Cancer Res.* 6: R616-R628.
- 43) Guerra L, M Favia, T Fanelli, G Calamita, M Svelto, A Bagorda, KA Jacobson, SJ **Reshkin** and V Casavola. 2004. Stimulation of Xenopus P2Y1 receptor induces CFTR activation in A6 cells. *Pflugers Arch. Eup. J. Physiology* 449: 66-75.
- 44) Orive G, SJ **Reshkin**, S Harguindey, and JL Pedraz. 2003. Hydrogen ion dynamics and the Na<sup>+</sup>/H<sup>+</sup> exchanger in cancer angiogenesis and antiangiogenesis. *Brit. J. Cancer* 89:1395-1399.
- 45) **Reshkin** SJ, A Bellizzi, RA Cardone, M Tommasino, V Casavola and A Paradiso. 2003. Paclitaxel induces apoptosis via PKA- and p38 MAP-dependent inhibition of the Na<sup>+</sup>/H<sup>+</sup> exchanger NHE1 in human breast cancer. *Clinical Cancer Res.* 9: 2366-2373
- 46) Tommasi S, V Fedele, A Crapolicchio, A Bellizzi, A Paradiso and SJ **Reshkin**. 2003. ErbB2 and the antimetastatic nm23/NDP kinase in regulating serum induced breast cancer invasion. *Int. J. Mol. Med.* 12:131-134
- 47) Mangia A, S Tommasi SJ **Reshkin**, A Pezzetta, G Simone, B Stea, F Schittulli and A Paradiso. 2002. Gonadotropin releasing hormone receptor (GnRH-R) expression in primary breast cancer: comparison of immuno-histochemical (ICA), radioligand and western blot (WB) analysis. *Int. J. Oncol.* 9:1127-1132
- 48) Bagorda A, L Guerra, F Di Sole, C Helmle Kolb, KA Jacobson, V Casavola and SJ **Reshkin**. 2002. Extracellular adenine nucleotides regulate Na<sup>+</sup>/H<sup>+</sup> exchanger NHE3 activity in A6-NHE3 transfectants by a cAMP/PKA-dependent mechanism. *J. Membr. Biol.* 188:249-259
- 49) Bagorda A, L Guerra, F Di Sole, C Helmle Kolb, RA Cardone, SJ **Reshkin**, SM Gisler, H Murer and V Casavola. 2002. Reciprocal PKA regulatory interactions between CFTR and NHE3 in a renal polarized epithelial cell model. *J. Biol. Chem.* 277:21480-21488
- 50) Dell'Aquila ME, V Casavola, SJ **Reshkin**, M Albrizio, L Guerra, F Maritato and P Minoia. 2002. Effects of B-endorphins and Naloxone on In Vitro Maturation of Bovine Oocytes. *Mol. Reprod. Develop.* 63:210-222
- 51) Di Sole F, L Guerra, A Bagorda, SJ **Reshkin**, M Albrizio, P Minoia and V Casavola. 2001. Naloxone inhibits A6 cell Na<sup>+</sup>/H<sup>+</sup> exchange by activating protein kinase via the mobilization of intracellular calcium. *Exper. Nephrol.* 9: 341-348
- 52) **Reshkin** SJ, L Guerra, A. Bagorda, L Debellis, A-H Li, KA Jacobson and V Casavola. 2000. Activation of A3 adenosine receptor induces calcium entry and chloride secretion in A6 cells. *J. Membr. Biol.* 178: 103-113
- 53) **Reshkin** SJ, A Bellizzi, S Caldiera, V Albarani, I Malanchi, M Poignee, M Alunni-Fabbroni, V Casavola and M Tommasino. 2000. Na<sup>+</sup>/H<sup>+</sup> exchanger-dependent intracellular alkalization is an early event in malignant transformation and plays an essential role in the development of subsequent transformation-associated phenotypes. *FASEB J.* 14: 2185-2197



- 54) Paradiso A, A Pezzetta, G Cellamare, F Schittulli, F Marzullo and SJ **Reshkin**. 2000. GnRH receptors in human breast cancer and its contiguous not-involved breast tissue. *J. Endocrinol. Invest.* 23: 90-96
- 55) Perlino E, S Tommasi, E Marra, V Casavola and SJ **Reshkin**. 2000. TGF- $\beta$ 1 and IGF-1 expression are differently regulated by serum in metastatic and non-metastatic human breast cancer cells. *Int. J. Oncol.* 16: 155-160
- 56) **Reshkin** SJ, A Bellizzi, V Albarani, L Guerra, M Tommasino, A Paradiso and V Casavola. 2000. Phosphoinositide 3-kinase (PI3K) is involved in the tumor-specific activation of human breast cancer cell Na<sup>+</sup>/H<sup>+</sup> exchange, motility and invasion induced by serum deprivation. *J. Biol. Chem.* 275: 5361-5369

Consapevole delle sanzioni penali, nel caso di dichiarazioni non veritiere, di formazione o uso di atti falsi, richiamate dall'art. 76 del D.P.R. 445/2000, dichiaro che quanto sopra corrisponde a verità. Ai sensi del D. LGS. 196/03 dichiaro, altresì, di essere informato che i dati personali raccolti saranno trattati, anche con strumenti informatici, esclusivamente nell'ambito del procedimento per il quale la presente dichiarazione viene resa e che al riguardo competono al sottoscritto tutti i diritti previsti all'art. 13 della medesima legge.

Bari, 22.09.2017

Stephan Joel RESHKIN