Kevin J. Scanlon, Ph.D.

(May, 2011)

Dr. Scanlon has extensive experience in medical research in academia and industry. He has management skills for creating, planning, organizing and implementing complex scientific programs with internal and external collaborations. He has identified and validated clinical candidates, worked with the regulatory department to obtain FDA approval and assisted with marketing strategies for new cancer products.

EDUCATION

1970 BA-Biology/Chemistry – Sacred Heart University, Bridgeport, Connecticut
1976 Ph.D. – Biochemistry – University of London, England
1979 Postdoctoral-Biochemical Pharmacology – Yale University School of Medicine

PROFESSIONAL EXPERIENCE

2006- Present: CEO **–Melanoma Diagnostics, Altadena, CA**

This California-based company was founded on medical technology from the University of California. The company was organized as an "S" Corporation in 2006 to commercialize a multi-marker diagnostic assay for discriminating moles from melanoma (92% accuracy) and a multi-marker prognostic assay. The company holds exclusive license to this technology with a robust patent estate. Sold to Myriad Genetics in December 2010.
http://www.melanomadiagnostics.com

2006- Present: Lecturer and Faculty Advisor at UCLA School of Management

Dr.Scanlon has been an advisor the the Global Access Program for the Fully Employed MBA students. Four to six students work with an international company for six months. This thesis project studies the feasibility of the international company to enter the US market with their products. The program has been very successful over the past 12 years with over 250 company participating in the program.

2004- Present: Investment Community

Dr. Scanlon has been a member of the executive committee of the Tech Coast Angeles in Los Angels and a Director of the Pasadena Angels. These groups mento rand fund university technology into funded companies. He has been responsible for screening, mentoring and helping fund start-up life science companies. These companies have been spun out of technology from the three local universities: UCLA, USC and Cal Tech.
http://www.pasadenaangels.com and http://www.techcoastangels.com

2004- Present: Consultant **– International BioScience, Altadena, CA**

Dr. Scanlon is instrumental in his role as catalyst, in bridging the worlds of academia, industry and venture capital, to nurture creative scientific ideas, coupled with sound business and fiscal responsibility; ultimately to help transition viable concepts to commercial reality. Additional information can be found on Dr. Scanlon's website.
http://www.kjscanlon.com/

2000 – 2004: Professor**- Keck Graduate Institute Claremont, CA**

Responsible for the development and teaching of the Pharmaceutical Development graduate courses at the Keck Graduate Institute in Claremont, Ca. He was the faculty coordinator for the summer internship program and the team masters research program sponsored by the Bio-Pharmaceutical Industry. He was also the Principal Investigator of a $600,000 federally funded

grant entitled “Partnerships for Innovation” to support the development of entrepreneur businesses with the Bioscience Community.

1996 – 2000: Vice President – Director of Cancer Research Department
Berlex Biosciences, Richmond, CA /Schering AG, Berlin, Germany
Responsible for developing their genomics and gene therapy program; through internal company collaborations between Berlin, Germany; Osaka, Japan and several biotechnology companies. Novel cancer genes were identified and validated for their role as drug target proteins in the pathogenesis of cancer. The potential clinical utility of these genes was demonstrated with in vivo models. These genes have been developed into therapeutic or diagnostic agents with filed patents. The pharmacology and toxicology profiles of three of these agents were characterized for clinical development. This program involved genomics, diagnostics, small molecules and gene therapy projects. Dr. Scanlon’s extensive scientific, management and business skills enabled the project milestones and goals to be developed on schedule.

1985 – 1996: Associate Research Scientist and Head – Biochemical Pharmacology
City of Hope National Medical Center, Duarte, CA
Funded research: ~$3MM, ~100 papers published; seven issued patents from the research

Co-Founder and Co-Editor of Cancer Gene Therapy (1992- present);

Paul Martini International Medical Research Award Bonn Germany (1988).

1979 – 1985 Instructor/Assistant Professor **– Neoplastic Disease and Biochemistry, Mt. Sinai School of Medicine, NY, NY**

1974 – 1979 Postdoctoral Associate **– Department of Pharmacology, Yale University School of Medicine, New Haven, CT**

1971 – 1974 Post Graduate Student **– Department of Biochemistry, University of London, London, England**

ISSUED PATENTS

1991 "Detection of Human Tumor Progression and Drug Resistance" - Patent # 5,085,983
1992 "Use of Nucleotide Analogs to Attenuate Cancers Resistance to DNA Damaging Chemotherapy" – Patent # 5,166,140
1996 "A New Method for Regulating Drug and Radiation Resistance Genes" - Patent # 5,508,558
1996 "Circumvention of Human Tumor Drug Resistance" – Patent # 5,585,363
1997 "PCR Amplification of m-RNA" – Patent # 5,618,702
1999 "Ribozyme Cleavage of 5a-Reductase MRNA – Patent # 5,880,277
1999 "Modulation of Drug and Radiation Resistant Genes" – Patent # 5,989,908

HONORS
2001 - 2003 President, International Society of Cancer Gene Therapy, London, England
1995 Participant and speaker, 400th Anniversary, Univ. of Uppsala, Stockholm, Sweden
1988 Paul-Martini International Medical Research Prize ($10,000), Bonn, West Germany
1986 Visiting Scientist – Chinese Academy of Medical Science, Beijing, China

1984 Visiting Scientist – Jichi Medical School, Tokyo, Japan
1983 Visiting Scientist – Institute for Cancer Research, Oslo, Norway
1982 Visiting Scientist – Chinese Academy of Medical Science, Beijing, China
1984 – 1989 Scholar – Leukemia Society of America
1981 – 1983 Fellow – Leukemia Society of America
1979 – 1981 Irving Alpert Cancer Research Fellowship – Mt. Sinai School of Medicine, NY, NY
1974 – 1977 NIH Postdoctoral Fellow – Yale University School of Medicine, New Haven, CT

EDITOR
1998 – Co-Editor – *Human Gene Therapy,* Schering Research Foundation Workshop #28 (Springer)
1998 – Co-Editor – *Ribozymes in Cancer Medicine,* Medical Intelligence Unit (Landes)
1998 – Editor – *Therapeutic Applications of Ribozymes,* Methods in Molecular Medicine (Humana)
1995 – Co-Editor – *Internet Book on Gene Therapy, Cancer Therapeutics*

1993 – Present: Co-Founder and Co-Editor – *Cancer Gene Therapy*

EDITORIAL BOARDS
Antisense and Nucleic Acid Drug Development, In Vivo, Journal of Chemotherapy, Molecular Biotechnology, Molecular Pharmacology, and Current Opinion in Molecular Therapeutics

BOARDS:
2009 -- Present: Molecular Therapeutics for Cancer Ireland, Dublin, Ireland
2007 – Present: Numira Bioscience, Irvine, CA
2007 – Present: Dublin City University, Dublin, Ireland
2006 – Present: Pivotal Bioscience, Los Angeles, CA.
2004 – Present: Los Angeles County Business Technology Center, Altadena, CA
2000 – Present: National Institute of Cellular Biotechnology, Dublin City University, Dublin, Ireland

MEMBERSHIPS – PROFESSIONAL ORGANIZATIONS
Executive committee member of the Pasadena Angels, Inc.
http://www.pasadenaangels.com/directors.php

Executive committee member of the Tech Coast Angels (TCA)
HYPERLINK "http://www.techcoastangels.com/Public/Content.aspx?ID=95b1ab98-4e58-48e2-a0f1-2f2460563afd" http://www.techcoastangels.com/Public/Content.aspx?ID=95b1ab98-4e58-48e2-a0f1-2f2460563afd

2004 – 2005 National Institute of Health – Cancer Biomarkers Study Section
1998 – 2000 California Breast Cancer Research Program; Council Member
1994 – 1998 National Institutes of Health – Clinical Cancer Study Section D
1989 – 1994 National Institutes of Health – Physiological Sciences Study Section
1998 – Present: International Society of Cancer Gene Therapy; Council Member
1997 – Present: American Society of Gene Therapy
1992 – Present: Coordinator, Annual, Cancer Gene Therapy Conference, San Diego, CA.
1984 – Present: American Association for Cancer Research

SELECTED PUBLICATIONS (total: 130 papers)

Scanlon K.J., Newman, E.M., Lu Y., and Priest D.G. Biochemical basis for cisplatin and 5-Fura synergism in
human ovarian carcinoma cells. **Proc. Nat'l. Acad. Sci. (USA) 83:8923-8925, 1986.**
Scanlon, K.J. and Kashani-Sabet, M. Elevated expression of dTMP synthase cycle genes in cisplatin-resistant human ovarian carcinoma cells. **Proc. Nat'l. Acad. Sci (USA) 85:650-653, 1988.**
Lu, Y., Han, J., and **Scanlon, K.J.** Biochemical and molecular properties of cisplatin-resistant A2780 cells grown in folinic acid. **J. Biol. Chem. 263:4891-4894, 1988.**
Kashani-Sabet, M., Rossi, J.J., Lu, Y., Ma, J.X., Chen, J., Miyachi, H., and **Scanlon, K.J.** Detection of drug
resistance in human tumors by PCR assay. **Cancer Research 48:5775-5778, 1988.**
Scanlon, K.J., Kashani-Sabet, M., and Sowers, L. Overexpression of DNA replication and repair enzymes in
cisplatin-resistant cells and circumvention by AZT. **Cancer Comm. 1:269-275, 1989.**
Scanlon, K.J., Funato, T., Pezeshki, B., Tone, T., and Sowers, L.C. Potentiation of azidothymidine cytotoxicity incisplatin-resistant human ovarian carcinoma cells. **Cancer Comm. 2:339-344, 1990.**
Kashani-Sabet, M., Wang, W., and **Scanlon, K.J.** Cyclosporin A suppresses cisplatin-induced c-*fos* gene
expression in ovarian carcinoma cells. **J. Biol. Chem. 263:11285-11288, 1990.**
Scanlon, K.J., Jiao, L., Funato, T., Wang, W., Tone, T., Rossi, J.J., and Kashani-Sabet, M. Ribozyme-mediated cleavage of c-*fos* mRNA reduces gene expression of DNA synthesis enzymes and metallothionein. **Proc. Nat'l. Acad. Sci. (USA) 88:10592-10595, 1991.**
Kashani-Sabet, M., Funato, T., Tone, T., Jiao, L., Wang, W., Yoshida, E. Wu, A.M., Moreno, J.G., Traweek, S.T., Ahlering, T.E., and **Scanlon, K.J.** Reversal of the malignant phenotype by an anti-*ras* ribozymes. **Antisense Res. & Dev., 2:3-15, 1992.**
Kashani-Sabet, M., Funato, T., Florenes, V.A., Fodstad, O., and **Scanlon, K.J.** Suppression of the neoplastic
phenotype *in vivo* by an anti-*ras* ribozyme. **Cancer Research 54:900-902, 1994.**
Scanlon, K.J., Ishida, H., and Kashani-Sabet, M. Reversal of the multi-drug resistant phenotype by a *fos*
ribozyme. **Proc. Nat'l. Acad. Sci. (USA) 91:11123-11127, 1994.**
Feng, M., Cabrera, G., **Scanlon, K.J.,** and Curiel, D. Neoplastic reversion accomplished by high efficiency
adenoviral-mediated delivery of an anti-*ras* ribozyme. **Cancer Research 55:2024-228, 1995.**
Scanlon, K.J., Ohta, Y., Ishida, H., Kijima, H., Ohkawa, T., Kaminiski, A., Tsai, J., Horng, G. and Kashani-Sabet,M. Oligonucleotide-mediated modulation of mammalian gene expression. **FASEB Jour. 9:1288-1296, 1995.**
Ohta, Y., Kijima, H., Ohkawa, T., Kashani-Sabet, M., and **Scanlon, K.J.** Suppression of the malignant phenotype of melanoma cells by anti-oncogene ribozymes. **J. Invest. Derm. 106:275-280, 1996.**
Maelandsmo, G.M., Hovig, E., Engebraaten, O., Skrede, M., Florenes, V.A., Myklebost, O., Grigorian, M.,
Lukanidin, E., **Scanlon, K.J.,** and Fodstad, O. Reversal of the *in vivo* metastatic phenotype of human tumor
cells by an anti-CAPL (*mts*1) ribozyme. **Cancer Res. 56:5490-5498, 1996.**
Irie, A., Anderegg, B., Kashani-Sabet, M., Ohkawa, T., Suzuki, T., Halks-Miller, M., Curiel, D., and **Scanlon, K.J.** Therapeutic efficacy of an adenovirus-mediated anti-H-*ras* ribozyme in experimental bladder cancer. **Antisense & Nucleic Acid Drug Dev. 9:341-349, 1999.**

Tsuchida., T., Kijima, H., Hori, S., Oshika, Y., Tokunaga, T., Kawai, K., Yamazaki, H., Ueyama, Y., **Scanlon, K.J.,** Tamaoki, N., and Nakamura, Adenovirus–mediated anti-Kras ribozyme induces apoptosis and growth
suppression of human pancreatic carcinoma. **Gene Therapy, 7:373-383, 2000.**
Suzuki, T., Anderegg, B., Ohkawa, T., Irie, A., Engebraaten, O., Halks-Miller, M., Holm, PS., Curiel, DT., Kashani-Sabet, M., and **Scanlon, K.J.** Adenovirus-mediated ribozyme targeting of HER-2/neu inhibits in vivo growth of breast cancer cells. **Gene Therapy, 7:241-248, 2000**.
Zhang, Y-A, Nemunaitis J, **Scanlon, K.J.**, and Tong, AW. Anti-tumorigenic effect of a K-ras ribozyme against
human lung cancer cell line heterotransplants in nude mice. **Gene Therapy, 7:2041-2050, 2000.**
Iida, T., Kijima, H., Urata, Y., Goto, S., Ihara, Y., Oka, M., Kohno, S., **Scanlon, K.J.**, Kondo, T. Hammerhead
ribozyme against ã-glutamylcysteine synthetase sensitizes human colonic cancer cells to cisplatin by down-
regulating both the glutathione synthesis and the expression of multidrug resistance proteins. **Cancer Gene**
Therapy, 8:803-814, 2001.
Nagata, J., Kijima, H., Hatanaka, H., Asai, S., Miyachi, H., Takagi, A., Miwa, T., Mine, T., Yamazaki, H.,
Nakamura, M., Kondo, T., **Scanlon, K.J**., Ueyama, Y. Reversal of cisplatin and multidrug resistance by
ribozyme-mediated glutathione suppression. **Biochemical and Biophysical Research Communications,**
286:406-413, 2001.
Hatanaka, H., Abe, Y., Naruke, M., Asai, S., Miyachi, H., Kawakami, T., Nagata, J., Kamochi, J., Kijima, H.,
Yamazaki, H., **Scanlon, K.J.**, Ueyama, Y., Nakamura, M. Modulation of multidrug resistance in a cancer cell
line by anti-multidrug resistance- associated protein (MRP) ribozyme. **Anticancer Research, 21:879-886,**
2001.
Nagata, J., Kijima, H., Hatanaka, H., Asai, S., Miyachi, H., Abe, Y,. Yamazaki, H., Nakamura, M., Watanabe, N., Mine, T., Kondo, T**., Scanlon, K.J**., Reversal of drug resistance using hammerhead ribozymes against multidrug resistance-associated protein and multidrug resistance 1 gene**. Int. J Oncol., 21:1021-1026, 2002.**

INVITED PAPERS
Scanlon, K.J. and Kashani-Sabet, M. Ribozymes as therapeutic agents: are we getting closer? **Jour. of the**
NCI, 90:8, 1998.
Kashani-Sabet,M. and **Scanlon, K.J.** Antisense and Ribozyme Therapy, **Cancer Handbook,** Macmillan
Publisher, London, England Chapter **91, 2001.**
Scanlon, K.J. and Kashani-Sabet,M. Ribozymes and Antisense. **Encyclopedia of the Human Genome**, Nature Publishing Group, Article #762, 2002.
Scanlon, K. J. Cancer Gene Therapy: Challenges and Opportunities. Anticancer Res., 24: 501-4, 2004
Scanlon, K. **J**. Anti-Genes: siRNA, Ribozymes & Antisense. Curr. Pharma. Biotechnology, 5:415-420, 2004.

ADDITIONAL PUBLICATIONS: HYPERLINK "http://www.kjscanlon.com/science/publications.htm" http://www.kjscanlon.com/science/publications.htm

Publications sold on Amazon.com:

HYPERLINK "http://www.amazon.com/Ribozymes-Gene-Therapy-Cancer-Biotechnology/dp/354064167X/ref=sr_1_4/002-3470801-4819263?ie=UTF8&s=books&qid=1212792651&sr=8-4" Ribozymes in Gene Therapy of Cancer: Biotechnology Intelligence Unit

by Kevin J. Scanlon and Mohammed Kashani-Sabet

HYPERLINK "http://www.amazon.com/Therapeutic-Applications-Ribozymes-Molecular-Medicine/dp/0896034771/ref=sr_1_3/002-3470801-4819263?ie=UTF8&s=books&qid=1212792651&sr=8-3" Therapeutic Applications of Ribozymes (Methods in Molecular Medicine)

by Kevin J. Scanlon

HYPERLINK "http://www.amazon.com/Internet-Book-Gene-Therapy-Therapeutics/dp/0838531016/ref=sr_1_1/002-3470801-4819263?ie=UTF8&s=books&qid=1212792651&sr=8-1" The Internet Book of Gene Therapy: Cancer Therapeutics

by Robert E. Sobol and Kevin J. Scanlon