

## CURRICULUM VITAE

**Adrian Mario Senderowicz, M.D**

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**Citizenship:** USA

**Education:**

School of Medicine  
Universidad de Buenos Aires  
Buenos Aires, Argentina  
Medical Doctor  
1982-1987

**Academical Position**

Investigator and Chief  
Molecular Therapeutics Unit  
Oral Pharyngeal Cancer Branch  
National Institute of Dental and Craniofacial Research  
National Institutes of Health  
July 2000-present

Attending Physician  
Medical Oncology Clinical Research Unit  
Center for Cancer Research  
National Cancer Institute  
July 1997-present

Clinical Investigator  
Developmental Therapeutics Program Clinical Trials Unit  
National Cancer Institute  
Bethesda, Maryland  
July 1996-present

Coordinator  
Developmental Therapeutics Program Clinical Trials Unit  
National Cancer Institute  
Bethesda, Maryland  
July 1996-March 2000

Coordinator  
Prostate Cancer Drug Development Clinic  
Clinical Pharmacology Branch  
Division of Clinical Sciences  
National Cancer Institute  
Bethesda, Maryland  
January 1996-July 1996

**Postgraduate Clinical Fellowship**

Clinical Oncology Fellow  
Medicine Branch  
National Cancer Institute  
National Institutes of Health  
Bethesda, Maryland  
1992-1995

**Postgraduate Medical Residence**

Internal Medicine Residency  
Mount Sinai School of Medicine Program A  
New York, New York  
Department of Internal Medicine  
1990-1992 (PGY 2 & 3)

Medical Internship  
Booth Memorial Medical Center Program  
New York (Flushing), New York  
Department of Internal Medicine  
1989-1990 (PGY-I)

**Postdoctoral Research Fellow**

St. Luke's Roosevelt Hospital  
Department of Infectious Diseases  
New York, New York  
Activities: Clinical Immunology in AIDS Pts.  
Supervisor : Michael Lange, M.D.  
March 1988-July 1989

**Instructor of Pharmacology**

School of Medicine, University of Buenos Aires  
Buenos Aires, Argentina  
March 1986 - December 1987

**Board Certification:**

ECFMG Certification

1987

FLEX Examination	1988
Diplomate, American Board of Internal Medicine	1992
Diplomate, American Board of Internal Medicine, Medical Oncology	1995
Diplomate (recertification), American Board of Internal Medicine	2003

**Uniformed Service**

1996-2000 US Public Health Service (O-4, Lieutenant Commander)

**Honors and Awards:**

July 1999 US Public Health Service  
Commendation Medal

January 1998 US Public Health Service  
Bicentennial Unit Commendation

May 1994 American Society of Clinical Oncology  
Merit award  
Dallas, Texas

April 1994 American Association for Cancer Research  
Merit award  
San Francisco, California

December 1987 Medical doctor degree  
Diploma with Honors (Cum Laude)

February 1987-May 1987  
Department of Physiology, School of Medicine  
University of Buenos Aires. Argentina  
Project: "in vitro effects of mitoxantrone in guinea pig atria"

**License**

New York State #189465-1  
Massachusetts (inactive)

**Professional Membership and Associations:**

American College of Physicians  
American Society of Clinical Oncology  
American Association for Cancer Research  
American Association for Advancement of Science

**Founding Member**

International Society for Translational Research  
Buenos Aires, Argentina

**Journal Ad hoc Reviewer**

Journal of the National Cancer Institute  
Cancer Research  
International Journal of Cancer  
Journal of Clinical Oncology  
Leukemia  
Life Sciences  
Investigational New drugs  
Cancer Chemotherapy and Pharmacology  
Journal of Biological Chemistry  
Oncogene  
The Oncologist  
The American Journal of Medical Sciences  
Annals of Oncology  
Cancer Letters  
Cancer  
Journal of Cellular Biochemistry  
Molecular Cell  
Molecular Pharmacology  
Cell death and differentiation  
European Journal of Biochemistry  
Molecular Cancer Therapeutics  
Carcinogenesis  
American Journal of Pathology  
International Journal of Oncology

**Editorial Board**

Clinical Cancer Research  
The Women's Review Oncology Review  
Investigational New Drugs

**Meeting Chairperson**

October 5-6<sup>th</sup>, 2000, First Meeting of Novel Molecular Targets for Cancer Therapy, Buenos Aires, Argentina (Chairperson)

October 4-5<sup>th</sup>, 2001, Second Meeting of Novel Molecular Targets for Cancer Therapy, Buenos Aires, Argentina (Chairperson).

October 3-4<sup>th</sup>, 2002, Cell Cycle as a Target in Chemoprevention and Cancer Therapy Conference, Austin, Texas, US (Chairperson).

October 3-4<sup>th</sup>, 2003, Third Meeting of Novel Molecular Targets for Cancer Therapy, Buenos Aires, Argentina (Chairperson).

### **Session Chairperson**

March 9<sup>th</sup>, 2001. Chairperson, First International “North Adriatic Sea” Symposium on Novel Targets for cancer Therapy. “Novel cdk inhibitors for cancer therapy”. Trieste, Italy.

April 18<sup>th</sup>, 2002. Chairperson, Second International “North Adriatic Sea” Symposium on Novel Targets for cancer Therapy. Anti-signaling new drugs: their correct use in clinical setting. Ravenna, Italy.

November 9<sup>th</sup>, 2002. Chairperson, 18<sup>th</sup> BMS Nagoya International Cancer Treatment Symposium, Nagoya, Japan

April 28<sup>th</sup>, 2003. Chairperson, Third International “North Adriatic Sea” Symposium on Novel Targets for cancer Therapy. “Role of genomics and proteomics in cancer detection and treatment. Trieste, Italy.

### **Invited Grant Reviewer**

Technical Evaluation Panel, MAO RFP NCI-CN-15000-46, Phase II Clinical Studies of Chemopreventive Agents, Division of Cancer Prevention, NCI (August 2001).

### **Research services:**

1997-present: Preceptor, Howard Hughes Research Scholars

1998-present: Member, Reviewing council, FONCYT, Argentina

1998-present: Chairperson, Head and Neck Cancer Interest Group, NIH.

2000-present: Preceptor, The NIH Academy Program

### **Clinical Protocols as Principal Investigator**

Clinical Center, NIH

03-D-0115 “Molecular, Genetic, and Biochemical Effects Of Novel Therapies In Buccal Mucosal Cells”

NCI-MB 394: ”A Phase I trial of daily bolus flavopiridol bolus for five consecutive days in patients with refractory neoplasms”

NCI-MB 401: “A Phase II trial of daily bolus flavopiridol bolus for five consecutive days in patients with refractory Head and Neck neoplasms”

## **Clinical Protocols as Protocol Chairman**

Clinical Center, NIH

NCI-MB 346 "A phase I trial of continuous infusion flavopiridol in patients with refractory neoplasms"

NCI-MB 379 "A phase I trial of continuous infusion UCN0-1 in patients with refractory neoplasms"

NCI-MB 410 " A phase I trial of oral Perifosine with different loading schedules in patients with refractory neoplasms"

## **Postgraduate Courses**

1)Statistics for Biomedical Scientists (STAT 500)  
FAES/NIH, 8/93-6/94

2)Core Curriculum in Clinical Research  
Clinical Center, National Institutes of Health, 4/95-6/95

## **Recent invited Lectures and presentations**

. April 1994, UC Santa Cruz, CA. Mechanism of action of jasplakinolide.

. September 17-18, 1996. NCI/CTEP Phase I Meeting, Bethesda, MD. Flavopiridol Phase I trial interim results.

. May 30-31, 1996. Santiago de Chile, Chile. Drug development in Cancer Chemotherapy. Molecular Pathology and Treatment of Gastrointestinal Tumors International Workshop.

. March 10 1997, NCI/CTEP Phase I Meeting, Bethesda, MD.. Flavopiridol Phase I trial interim results.

. April 15, 1997, UCSD Medical Center, CA. Gastrointestinal/Surgery Grand Rounds, "A Phase I trial of flavopiridol, a novel cyclin-dependent kinase inhibitor, in patients with refractory neoplasms"

. June 11, 1997, National Institute of Dental Research, Director's Lecture, National Institutes of Health. , Bethesda, MD.

. July 2, 1997, National Institutes of Health, Clinical Center Grand Rounds, Bethesda, MD. "Bench to Bedside. Flavopiridol: a Cyclin-dependent Kinase Inhibitor in Early Clinical Trials".

- . October 30, 1997, Laboratory of Molecular Pharmacology. Division of Basic Sciences, National Cancer Institute . “Preclinical and clinical studies with flavopiridol and UCN-01”.
- . April 1998, SWOG Head and Neck Committee, Atlanta, Ga. “Antitumor activity of flavopiridol in Head and Neck xenografts”.
- . May 1998, Mitotix, Boston, MA. “Clinical development of flavopiridol”.
- . June 15, 1998. University of Vienna, Vienna, Austria, Grand rounds. "Novel cyclin-dependent kinase inhibitors, flavopiridol and UCN-01, in human clinical trials "
- . June 27, 1998. Annual CALGB Meeting (Plenary Session), Fort Lauderdale, FL, "Clinical Development of Cyclin-Dependent Kinase Inhibitors".
- . July 23, 1998. Investigator’s meeting, Hoechst Marion Roussel, Bridgewater, NJ” “Antitumor activity of flavopiridol in Head and Neck xenografts” .
- . September 15, 1998, CTEP Phase I Meeting, NCI, NIH, Gaithersburg, MD “ Phase I trial of infusional UCN-01 in patients with refractory neoplasms”
- . November 3, 1998. 5<sup>th</sup> UICC workshop on Targeted Cancer Therapy, Hamilton, Bermuda. “ Early clinical trials with cyclin dependent kinase inhibitors”
- . January 27, 1999. MD Anderson Cancer Center, Houston, Texas, Grand Rounds” Cyclin dependent kinase inhibitors as chemopreventive agents"
- . February 3, 1999. Mount Sinai School of Medicine, NY, NY. Novel cyclin-dependent kinase inhibitors in early human clinical trials”.
- . April 20, 1999. Seminars in Clinical and Molecular Oncology, Division of Clinical Sciences, National Cancer Institute, National Institutes of Health, Bethesda, MD. “Cell cycle machinery as Target for Cancer Therapeutics”.
- . April 22, 1999. Medical Oncology Grand rounds, Mc. Gill University, Montreal, Canada. “Inhibitors of cyclin-dependent kinases as anticancer drugs”.
- . April 28, 1999, Oral Pharyngeal Carcinoma Branch, National Institutes of Dental and Craniofacial and Disorders, National Institutes of Health, Bethesda, MD. “. “Inhibitors of cyclin-dependent kinases as anticancer drugs”.
- . May 26, 1999, Seminar, Cell biology Department, Harvard Medical School, Boston, MA, “ flavopiridol-induced G<sub>1</sub> arrest is mediated by depletion of cyclin D1 with concomitant loss of cdk6 activity in breast cell lines”.

- . June 13, 1999. ECOG Group Meeting, Spring 1999, Head and Neck committee  
“Flavopiridol: clinical and pre-clinical development in Head and Neck Cancer “. Baltimore, MD
- . June 24, 1999. Seminar, Institute for Experimental Pathology, University of Vienna, Vienna, Austria, “UCN-01: a protein kinase inhibitor with unique antitumor/ pharmacological properties”
- . June 24, 1999, Early EORTC Drug Development Meeting, Vienna, Austria. “Clinical Development of cyclin-dependent kinase inhibitors in cancer therapeutics”
- . September 28, 1999, CTEP Phase I Meeting, NCI, NIH, Bethesda, MD “ Phase I trial of bolus flavopiridol in patients with refractory neoplasms
- . October 7, 1999, Cancer Immunotherapy Symposium, School of Medicine, University of Buenos Aires, Argentina. “Signal transduction pathways in T lymphocytes”
- . October 8, 1999, Seminar, School of Biology, University of Buenos Aires, Buenos Aires, Argentina. “Basic aspects of cell cycle inhibitors”
- . October 15, 1999. VI Breast Cancer Latin American Congress, Isla Margarita, Venezuela. “Novel agents in the treatment of metastatic breast cancer”
- . November 5, 1999. Seminar, Medicine Branch, Division of Clinical Sciences, National Cancer Institute, Bethesda, MD. "Cyclin-dependent kinases as targets for cancer chemotherapy".
- . December 9, 1999, 41<sup>st</sup> Annual Meeting of the American Society of Hematology, Educational Session: speaker, New Orleans : “Cell cycle regulation as a therapeutic target”
- . January 13, 2000, Seminar, National Cancer Center Research Institute, Tokyo, Japan. “Cyclin-dependent kinases as targets for cancer therapy".
- . January 14, 2000. Seminar, Kyowa Hakko Kogyo Co. Ltd, Tokyo, Japan. “Preclinical development of UCN-01 and flavopiridol”.
- . January 15, 2000, Seminar, The International symposium on HMR 1275, Palace Hotel, Tokyo, Japan, “Preclinical and clinical development of flavopiridol”.
- . February 23, 2000, Seminar, Thomas Jefferson University, Philadelphia, PA. "Novel cyclin-dependent kinases for cancer Therapy"
- . February 26, 2000, Symposium, A new era in Oncology-Aventis Pharma Germany, Palais des Congres, Strausburg, France. “Flavopiridol: New perspectives in hematology and oncology”.



- . February 29, 2000, Seminar: “Preclinical and clinical development of the two novel cyclin-dependent kinase inhibitors, flavopiridol and UCN-01”, Dept. of Pathology, Technical University of Munich, Munich, Germany.
- . March 24, 2000, Seminar: “Preclinical and clinical development of the two novel cyclin-dependent kinase inhibitors, flavopiridol and UCN-01”. Bristol Myers Squibb Global Headquarters, NY, NY.
- . April 19, 2000, Symposium: “Novel agents in the treatment of Non-Hodgkin’s lymphoma”. European School of Oncology, Buenos Aires, Argentina.
- . April 28, 2000, Symposium, First European Spring Oncology Conference, Marbella, Spain. “Flavopiridol, the first cyclin-dependent kinase inhibitor in human clinical trials
- . July 7, 2000, Seminar, Holy Cross Hospital, Silver Spring, MD, “Novel agents for the treatment of advanced Head and Neck neoplasms”.
- . July 19, 2000, Grand Rounds, National Cancer Institute, Mexico, DF, “Preclinical and clinical development of cdk inhibitors for the treatment of head and neck cancer”
- . September 26, 2000. Grand Rounds, Department of Pathology, NYU, NY, NY. “Cyclin-dependent kinase modulators for cancer therapy”
- . September 27, 2000. Seminar, OPCB, DIR, NIDCR, NIH, Bethesda, MD “ Cell cycle as the target for Head and neck cancer therapeutics”
- . September, 29, 2000, ENT Grand Rounds, George Washington University, Bethesda, MD: Cyclin-dependent kinase modulators for the treatment of squamous head and neck cancer
- . October 5, 2000, Chairperson, Symposium, "Novel Molecular Targets for Cancer Therapy" Buenos Aires, Argentina, Seminar: novel cyclin-dependent kinase inhibitors for cancer therapy
- . October 6, 2000, Chairperson, Symposium Novel Molecular Targets for Cancer Therapy" . Buenos Aires, Argentina. Seminar: "Novel modalities and targets for the treatment of head and neck cancer" , Buenos Aires, Argentina
- . October, 30: Seminar, HIV and AIDS Malignancy Branch, Division of Clinical Sciences, National Cancer Institute, Bethesda, MD. " Flavopiridol: a novel antitumor cyclin-dependent kinase inhibitor that inhibits P-TEF-b and HIV replication”
- . November 9, 2000. Plenary Session, 11th NCI-EORTC-AACR Symposium on New Drugs in Cancer Therapy. Preclinical and clinical development of cyclin-dependent kinase modulators flavopiridol and UCN-01, Amsterdam, Netherlands.

- . November 18, 2000. Seminar. ECOG Group Meeting, Fall 2001, Head and Neck committee. "Development of cyclin-dependent kinase modulators in the treatment of Head and Neck Cancer ", Miami, FL.
- . December 5, 2000. Seminar, NIH Academy, NIH, Bethesda, MD. " Cyclin-dependent kinase modulators: from the bench to the bedside"
- . January 31<sup>st</sup>, 2001. Grand Rounds, VA Washington Hospital, DC " Cyclin-dependent kinase modulators for the treatment of head and neck neoplasms"
- . March 9<sup>th</sup>, 2001. Speaker, First International "North Adriatic Sea" Symposium on Novel Targets for cancer Therapy. "Novel cdk inhibitors for cancer therapy". Trieste, Italy.
- . April 11<sup>th</sup>, 2001. Keynote Speaker. University of Central Florida. "Impact of the sequence of human genome of novel therapeutics". Orlando, Florida
- . May 8<sup>th</sup>, 2001. Internal Medicine Grand Rounds, Cornell University, New York Hospital. Cyclin-dependent kinase inhibitors for cancer therapy", New York, New York
- . June 4<sup>th</sup>, 2001 . Internal Medicine Grand Rounds, Fred Hutchinson Cancer Research Center, "Development cyclin-dependent kinase inhibitors for cancer therapy", Seattle, WA
- . August 28<sup>th</sup>, 2001. Seminar, MD Anderson Cancer Center, Smithville, Texas, " Novel Cyclin dependent kinase inhibitors as chemopreventive agents"
- . October 4, 2001, Chairperson, Symposium, "Second Novel Molecular Targets for Cancer Therapy" Buenos Aires, Argentina, Seminar: novel cyclin-dependent kinase inhibitors for cancer therapy
- . October 5, 2001, Chairperson, Symposium, "Second Novel Molecular Targets for Cancer Therapy" . Buenos Aires, Argentina. Seminar: "Novel modalities and targets for the treatment of head and neck cancer" , Buenos Aires, Argentina.
- . October 10<sup>th</sup>, 2001. Seminar. AstraZeneca Cancer Research Colloquium, Boston, MA: "Clinical development of cyclin-dependent kinase inhibitors".
- . February 1<sup>st</sup>, 2002. Seminar. Department of Pathology, Uniformed Services University of the Health Sciences. "Preclinical and Clinical Development of cyclin-dependent kinase inhibitors".
- . April 12<sup>th</sup>, 2002. Speaker. Annual Meeting for the American Chemical Society. "Clinical trials with cyclin-dependent kinase inhibitors". Orlando, Florida
- . April 18<sup>th</sup>, 2002. Chairperson and speaker, Second International "North Adriatic Sea" Symposium on Novel Targets for cancer Therapy. Anti-signaling new drugs: their correct use in clinical setting. Ravenna, Italy.

- . June 14<sup>th</sup>, 2002. Speaker. Second European Spring Oncology Conference (ESOC-2) Marbella, Spain. . “Preclinical and Clinical Development of cyclin-dependent kinase inhibitors”.
- . June 21<sup>st</sup>, 2002. Speaker. Pfizer State of the Art Forum: Oncology , NY, NY. “Novel clinical developments with cyclin-dependent kinase inhibitors”.
- . June 29<sup>th</sup>, 2002. Speaker. 3rd International Lung Cancer Congress, Hawaii, USA. “Clinical Development of cyclin-dependent kinase inhibitors in lung cancer”.
- . July 22<sup>nd</sup><sup>th</sup>, 2002. Speaker. Gordon Research Conference (Mechanisms of Toxicity). Bates College, Lewiston, Maine. “Preclinical and Clinical Development of cyclin-dependent kinase inhibitors”.
- . July 26<sup>th</sup>, 2002. Speaker. First Interamerican Breast Cancer Conference, Cancun, Mexico. “Clinical Development of cyclin-dependent kinase inhibitors in breast cancer”.
- . September 20<sup>th</sup>, 2002, Speaker, Seminar, Epithelial Damage, Repair and Tissue Engineering (CIEMAT), Madrid, Spain. “Transcriptional upregulation of p21<sup>waf1</sup> cdk inhibitor by alkylphospholipids”.
- . September 25<sup>th</sup>, 2002. Speaker, 1st International Symposium on Signal Transduction Modulators in Cancer Therapy, Amsterdam, Netherlands “ Preclinical and Clinical Development of cyclin-dependent kinase inhibitors”.
- . November 9<sup>th</sup>, , 2002. Speaker, "18th Bristol-Myers Squibb Nagoya International Cancer Treatment Symposium", Nagoya, Japan , Meet the experts: “ Clinical challenges with the development of cyclin-dependent kinase modulators”.
- . November 9<sup>th</sup>, , 2002. Speaker, "18th Bristol-Myers Squibb Nagoya International Cancer Treatment Symposium", Nagoya, Japan “ Preclinical and Clinical Development of cyclin-dependent kinase inhibitors”.
- . December 5<sup>th</sup>, 2002. Speaker, Third International Cancer Congress " New Trends in Cancer Therapy”, Rovigo, Italy, “ Preclinical and Clinical Development of cyclin-dependent kinase inhibitors”.
- . December 13<sup>th</sup>, 2002, Speaker, 3rd Annual SUO Meeting; Urologic Oncology: Extraordinary Opportunities in Discovery, Bethesda, MD “ Perifosine induces p21<sup>waf1</sup> and apoptosis in prostate carcinoma models”.
- . February 6<sup>th</sup>, 2003, Speaker, The 1<sup>st</sup> Annual Opinion Leader consortium on novel and targeted therapies for head and neck cancer”, San Juan, Puerto Rico, “ Perifosine as a cell cycle regulator in head an neck cancer”.

. February 8<sup>th</sup>, 2003. Speaker, New targets and innovative strategies in cancer treatment: a short course for clinicians. “Agents that block the G<sub>1</sub>/S transition and their potential as anticancer agents”. Monte Carlo, Monaco.

April 25<sup>th</sup>, 2003. Seminar, Department of Biochemistry and Molecular Biology, University of Barcelona, “Mechanism of action of alkylphospholipids”, Barcelona, Spain.

April 28<sup>th</sup>, 2003. Speaker, Third International “North Adriatic Sea” Symposium on Novel Targets for cancer Therapy. “ Role of genomics and proteomics in cancer detection and treatment. Trieste, Italy.

August 30<sup>th</sup>, 2003. Seminar, Second International Congress on Targeted Therapies in Cancer “Preclinical and clinical development of cell cycle modulators” Washington DC

September 9<sup>th</sup>, 2003. Seminar, Department of Biochemistry, University of Montreal, “Novel small molecule cdk modulators for cancer therapy”, Montreal, Canada

September 13<sup>th</sup>, 2003. Seminar, 4th Annual Perspectives in Colorectal “Preclinical and clinical development of cell cycle modulators for the treatment of colon cancer”, Arlington, VA.

### **Publications (\*corresponding author )**

- 1) **Senderowicz, A**; Lange, M.; Inada Y.; Watanabe, K. et al. C5b-9, Bb, C3a des Arg activation is a sensitive indicator of HIV infection; *Complement and Inflammation* 1989; 6:399.
- 2) Watanabe, K; Inada, Y.; Ikegami, H.; **Senderowicz, A.** et al. In vitro Immunomodulatory effects of traditional Kampo Medicine (SST) on peripheral mononuclear cells from patients with HIV Infection. *International Journal of Oriental Medicine* 1990; 15: 1-9.
- 3) Viniegra, M., Marchetti, M., Losso, M., **Senderowicz, A.**, Politi, P et al. Cardiovascular autonomic function in anthracycline-treated breast cancer patients. *Cancer Chemother Pharmacology* 1990; 26 (3):227-231.
- 4) Bubb, M, **Senderowicz, A.**, Sausville, E, Duncan, K and Korn, E. Jasplakinolide, a cytotoxic natural product, induces actin polymerization and competitively inhibits the binding of Phalloidin to F-actin. *J. Biol. Chem* 1994 (269):14869-14871.
- 5) **Senderowicz, A.**, Kaur, G, Sainz, E et al. Jasplakinolide inhibition of prostate carcinoma cell growth *in vitro* with disruption of the actin cytoskeleton. *J Natl Canc Inst* 1995(87):46-51.
- 6) Sausville, EA, Duncan, K, **Senderowicz, A.**, Plowman, J, Randazzo, P, Kahn, R, Malspeis, L, Grever, M. Antiproliferative effect *in vitro* and antitumor activity *in vivo* of Brefeldin A. *Cancer J Sci Am.* 1996 Jan;2(1):52.-58

- 7) Figg, W, Dawson, N, Middleman, M, Brawley, O, Lush, R, **Senderowicz, A**, Reed, E, and Sartor, O. Flutamide withdrawal and concomitant initiation of aminoglutethimide in patients with "hormone refractory" prostate cancer. *Acta Oncologica* 1996 (35):763-765.
- 8) Stone, M, Sausville, E, Fay, J, Headlee, D, Collins, R, Figg, W, Stetler-Stevenson, M, Jain, V, Jaffe, E, Solomon, D, Lush, R, **Senderowicz, A** et al. A Phase I study of Bolus versus Continuous infusion of the Anti-CD19 Immunotoxin, IGG-HD37-dgA in patients with B cell Lymphoma. *Blood* 1996 (88), 1188-1197.
- 9) Sedlacek, H, Czech, J, Naik, R, Kaur, G, Worland, P, Losiewicz, M, Parker, B, Carlson, B, Smith, A, **Senderowicz, A.M**, Sausville, EA. Flavopiridol (L86-8275; NSC 649890), a new kinase inhibitor for tumor therapy. *International Journal of Oncology* 1996 (9):1143-1168.
- 10) Dawson, N, Figg, W, Cooper, M, Sartor, O, Bergan, R, **Senderowicz, A.M** et al. A phase II trial of suramin, leuprolide and flutamide in previously untreated metastatic prostate cancer. *J Clin Oncol* 1997 (15): 1470-1477.
- 11) **Senderowicz, A.M**, Vitetta, E, Headlee, D, Ghetie, V, Figg, W.M, et al. Complete sustained response of refractory post-transplant large-B cell lymphoma to an anti-CD22 immunotoxin. *Annals of Internal Medicine* 1997 (126): 882-5.
- 12) Katz, R L, Quezado, M, **Senderowicz, AM**, Villalba, ML, Laskin WM, Tsokos, M. An intra-abdominal small round cell neoplasm with features of primitive neuroectodermal tumor and desmoplastic round cell tumor and a EWS/FLI-1 fusion transcript. *Human Pathology* 1997 (28): 502-509.
- 13) Dawson, N, Figg, W, Brawley, O, Bergan, R, Cooper, M, **Senderowicz, A.M**. et al. Phase II study of suramin plus aminoglutethimide in two cohorts of patients with androgen-independent prostate cancer: simultaneous antiandrogen withdrawal and prior antiandrogen withdrawal. *Clin Cancer Res* 1998 (4): 37-44.
- 14) Parker, B, Kaur, G., Nieves-Neira, Taimi, M, W, Kolhagen, G, Shimizu, T, Pommier, T, and Sausville, E.A **and Senderowicz, A.M\***. Early induction of apoptosis in hematopoietic cell lines after exposure to flavopiridol. *Blood* 1998 (91): 458-465.
- 15) Jager, W, Zembsch, B, Wolschann, P, Pittenauer, E, **Senderowicz, A.M.**, Sausville, EA, Sedlacek, H, Graf, J, Thalhammer, T. Metabolism of the anticancer drug flavopiridol, a new inhibitor of cyclin dependent kinases, in rat liver. *Life Sciences* 1998 (62): 1861-1873.
- 16) **Adrian M. Senderowicz\***, Donna Headlee, Sherman F. Stinson, Richard M. Lush, Nelson Kalil, Lourdes Villalba, Kimberly Hill, Seth M. Steinberg, William D. Figg, Anne Tompkins, Susan G. Arbuck, and Edward A. Sausville. A Phase I Trial of Continuous Infusion Flavopiridol, a Novel cyclin-dependent kinase inhibitor, in Patients with Refractory Neoplasms. *Journal of Clinical Oncology* 1998 (16):2986-2999.

- 17) Yu, L, Orlandi, L, Wang, P, Orr, M, **Senderowicz, A.M.**, Sausville, E. A, Silvestrini, R and O'Connor, P. UCN-01 abrogates G2 arrest through a cdc2-dependent pathway that involves inactivation of the Wee1Hu kinase. *J. Biol. Chem.* 1998 (273), 33455- 33464
- 18) Patel, V, **Senderowicz, A.M\***, Pinto, D.J, Igishi, T, Ensley, J.F., Sausville, E.A. and Gutkind, J.S. Flavopiridol, a novel cyclin-dependent kinase inhibitor prevents the growth of Head and Neck squamous cell carcinomas by inducing apoptosis. *J Clin Invest.* 1998 Nov 1;102(9):1674-1681
- 19) Fogt, F, Vortmeyer, A and **Senderowicz, A.M.** Sodium polystyrene sulfonate damage (letter). *American Journal of Surgical Pathology* 1998, 22:379-381
- 20) Sausville, E. A, Lush, R, Headlee, D, Smith, A, Figg, W, Arbuck, S, **Senderowicz, A. M**, Fuse, E, Tanii, H, Kuwabara, T, Kobayashi, S. Clinical pharmacology of UCN-01: Initial observations and comparison to preclinical models. *Cancer Chemother. Pharmacology* 1998 (42 suppl) S54-S59
- 21) Fuse, E, Tanii, H, Kurata, N, Kobayashi, H, Shimada, Y, Tamura, T, Sasaki, Y, Tanigara, Y, Lush, R, Headlee, D, Figg, W, Arbuck, S, **Senderowicz, A.M.**, Sausville, E, Akinaga, S, Kuwabara, T and Kobayashi, S. Unpredicted clinical pharmacology of UCN-01 caused by specific binding to human  $\alpha$ 1-acid glycoprotein. *Cancer Research* 1998, 58(15):3248-3253
- 22) Zaharevitz, D, Gussio, R, Meijer, L , Leost, M, Kunick, C, **Senderowicz, A.M.**, Lahusen, T, Kunick, C, and Sausville, E.A. Discovery and initial characterizations of the paullones, a novel class of small-molecule inhibitors of cyclin-dependent kinases. *Cancer Research* 1999, 59: 2566-2569
- 23) Lee, H, Chang, T, Tebalt, M, **Senderowicz, A.M.** and Szabo, E. Induction of differentiation accompanies inhibition of cdk2 in a non-small lung cancer cell line. *Int J Oncol* 1999, 15:161-166
- \*corresponding author**
- 24) Sausville, E.A, Zaharevitz, D, Gussio, R, Meijer, L , Leost, M, Kunick, C, Schultz, R, Lahusen, T, Headlee, D, Stinson, S, Arbuck, SG and **Senderowicz, A.M.** Cyclin-dependent kinases: initial approaches to exploit a novel therapeutic target. *Pharmacol Ther* 1999, 82: 285-292
- 25) **Senderowicz, A.M**, Reid, R, Headlee, D, Horti, J, Lush, R, Dixon, S, Kohler, D, Brawley, O, Reed, E, Figg, W, Sausville, E. A. A Phase II trial of gallium nitrate in patients with androgen-independent metastatic prostate cancer. *Urologia Internationalis* 1999 63(2):120-125
- 26) Schnier, J, Kaur, G, Kaiser, A, Stinson, S, Sausville, E.A, Gardner, J, Nishi, K, Bradbury, EM and **Senderowicz, A. M.** Isolation of flavopiridol-binding proteins by affinity chromatography: Identification of cytosolic aldehyde dehydrogenase I, *FEBS letters* 1999, 454:100-1049.
- 27) Carlson, B, Lahusen, T, Singh, S, Loaiza-Perez, A., Worland, PJ, Pestell, R., Albanese, C., Sausville, E.A. and **Senderowicz, A.M\***. Downregulation of cyclin D1 by transcriptional

repression in MCF-7 human breast carcinoma cells induced by flavopiridol. *Cancer Res* 1999, 59; 4634-4641

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#### **Poster presentation (last 5 years)**

Transcriptional activation of p21<sup>WAF1</sup> by perifosine requires the activation of the MAPK pathway and involves the Sp1 transcription factor. De Siervi A & **Senderowicz A**. Proc. Ninetieth-three Annual Meeting of the American Association of Cancer Research, Wash, DC, July 2003

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UGT1A1 Promoter Polymorphism did not Affect Flavopiridol Pharmacokinetics and Diarrhea in Patients with Refractory Neoplasms. Suoping Zhai , Edward A. Sausville , **Adrian M. Senderowicz**, Yuichi Ando, Donna Headlee, Richard A. Messmann, Susan Arbuck, Anthony J.

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Perifosine, a novel oral antitumor alkylphospholipid, arrest cells in G<sub>1</sub>/S and G<sub>2</sub>/M due to a p53-independent induction of p21<sup>waf1</sup>. A De Siervi, J Diggs, T Lahusen, V Patel, E A Sausville, S Gutkind, **A M Senderowicz**. Twelfth NCI-EORTC symposium on new drugs in cancer therapy, Miami, November 2001

Rapamycin promotes G<sub>1</sub>/S arrest and antitumor effects by an FKBP-dependent downregulation of cyclin D3 in prostate carcinoma cell lines. T Lahusen, T Sy, M Hollingshead, E A Sausville, **A M Senderowicz**. Twelfth NCI-EORTC symposium on new drugs in cancer therapy, Miami, November 2001

Alsterpaullone (alp), a novel cyclin-dependent kinase inhibitor, induces apoptosis by activation of both caspase 8 and caspase 9 cascades. T Lahusen, E Orellana, **A M Senderowicz**. Twelfth NCI-EORTC symposium on new drugs in cancer therapy, Miami, November 2001

A Phase I Trial of Oral Perifosine with Different Loading and Maintenance Schedules in Patients with Refractory Neoplasms. Richard A. Messmann, Donna Headlee, Eunhee W. Woo, William D. Figg, Qin Ryan, Susan G. Arbuck, Anthony J. Murgo, Giovanni Melillo, Janet Dancey, **Adrian M. Senderowicz**, Edward A. Sausville. Proc. Ninetieth-two Annual Meeting of the American Association of Cancer Research, New Orleans, LA, April 2001

Cell Cycle Arrest at G<sub>1</sub>/S and G<sub>2</sub>/M by Alsterpaullone (alp) is Independent of p53 Function or p21<sup>WAF1</sup> Expression. Tyler Lahusen, Sheo Singh, Edward A. Sausville, **Adrian M. Senderowicz**. Proc. Ninetieth-two Annual Meeting of the American Association of Cancer Research, New Orleans, LA, April 2001

S. Zhai, WD.Figg, D.Headlee, R. Messmann, S. Arbuck, A. Murgo, G. Melillo, , and E.A.Sausville **A.M. Senderowicz**. Pharmacokinetics (PK) of 1 hour infusion of flavopiridol in patients with refractory neoplasms. Poster presentation. Eleventh NCI-EORTC symposium on new drugs in cancer therapy, Amsterdam, November 2000

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Lahusen,T., Loaiza-Perez, A, Sausville, E.A., and **Senderowicz, A.M.** Flavopiridol-induced apoptosis is associated with p38 and MEK activation and is prevented by caspase and MAPK inhibitors (mini symposium-slide presentation). Proc. Ninetieth-one Annual Meeting of the American Association of Cancer Research, San Francisco, CA, April 2000

Lahusen,T., Singh, S.S., Sausville, E.A., and **Senderowicz, A.M.** (poster presentation). Alsterpaullone (Alp) blocks cell cycle progression at G<sub>1</sub>/S and G<sub>2</sub>/M with altered expression of G1

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Singh, S. S., Sausville E.A., and **Senderowicz A, M.** Cyclin D1 and Cdk6 are the targets for flavopiridol-mediated G1 block in MCF10A breast epithelial cell line. Proc. Ninetieth Annual Meeting of the American Association of Cancer Research, Philadelphia, PA, April 1999

Zaharevitz, D, Kunick, C , Schultz, C, Meijer, L, Leost, M, Gussio, R, **Senderowicz, A.M.**, Lahusen, T, and Sausville, E.A. The paullones, a novel class of small molecule inhibitors of cyclin-dependent kinases.(Minisymposium) Proc. Ninetieth Annual Meeting of the American Association of Cancer Research, Philadelphia, PA, April 1999

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Lee, H.R., Cabanes, A., **Senderowicz, A.M.**, and Szabo, E. Sequential inhibition of cdk2 and cdk4 kinase activities during differentiation in non-small cell lung cancer. Proc. eighty-ninth Annual Meeting of the American Association of Cancer Research, New Orleans, LA, April 1998

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**Patents/Inventions**

David Price and Adrian Senderowicz. Flavopiridol methods and compositions for HIV therapy. US Patent Application Serial Number (4200.000790) (filed: December 4, 2003 )

**Material CRADA:**

“Title: Mechanism of antiproliferative effects of phenoxidiol, a novel antitumor agent”

Company: Novogen, Ltd

Support: \$28.500

**Previous Trainees 1996-present**

<b>Name</b>	<b>Position (pre/post-doc)</b>	<b>Training Period</b>	<b>Current Position/Place</b>
Jason Wasfy	Predoc	1996-1997	M.D. student Harvard School of Medicine
Nelson Kalil, M.D.	Post-doc	1998-2000	Assistant Professor Univ. of Maryland
Constanza Quiroz	Predoc	1996-1997	M.D. Student Univ. of Buenos Aires
Jessica Diggs	Predoc	2000-2001	M.D./Ph.D. Student Cleveland Clinic
Tyler Lahusen	Technician	1996-2001	Ph.D. Student Georgetown University
Doreen Toskos	Predoc	2002	DDS student Harvard Dental School