

Stanford

Phyllis Gardner

Professor of Medicine (Clinical Pharmacology)

Medicine - Clinical Pharmacology

Bio

ACADEMIC APPOINTMENTS

- Professor, Medicine - Clinical Pharmacology

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

We are interested in the general process of signal transduction, focusing on the role that ion channels play in this process. By means of patch clamp recording and associated cell and molecular biological techniques, we have studied:

1. Voltage-insensitive Ca²⁺ channels, Ca²⁺-dependent K⁺ channels, other downstream Ca²⁺ dependent effector molecules; role in cellular activation and signal transduction.
2. Cystic fibrosis Cl⁻ channels in epithelial cells and lymphocytes; associated signal transduction pathways and cell biological coupling mechanisms. Phase I/II AAV-CFTR gene therapy trials.
3. NFAT mediated gene transcription; modulations by kinases and phosphatases.

Publications

PUBLICATIONS

- **Genetic Analysis of Presbycusis by Arrayed Primer Extension** *ANNALS OF CLINICAL AND LABORATORY SCIENCE*
Rodriguez-Paris, J., Ballay, C., Inserra, M., Stidham, K., Colen, T., Roberson, J., Gardner, P., Schrijver, I.
2008; 38 (4): 352-360
- **Comprehensive arrayed primer extension array for the detection of 59 sequence variants in 15 conditions prevalent among the (Ashkenazi) Jewish population** *JOURNAL OF MOLECULAR DIAGNOSTICS*
Schrijver, I., Kulm, M., Gardner, P. I., Pergament, E. P., Fiddler, M. B.
2007; 9 (2): 228-236
- **Simultaneous multigene mutation detection in patients with sensorineural hearing loss through a novel diagnostic microarray: A new approach for newborn screening follow-up** *PEDIATRICS*
Gardner, P., Oitmaa, E., Messner, A., Hoefsloot, L., Metspalu, A., Schrijver, I.
2006; 118 (3): 985-994
- **Microfabricated nanochannel implantable drug delivery devices: trends, limitations and possibilities.** *Expert opinion on drug delivery*
Gardner, P.
2006; 3 (4): 479-487

- **Hereditary sensorineural hearing loss: advances in molecular genetics and mutation analysis** *EXPERT REVIEW OF MOLECULAR DIAGNOSTICS*
Schrijver, I., Gardner, P.
2006; 6 (3): 375-386
- **Genotyping microarray for the detection of more than 200 CFTR mutations in ethnically diverse populations** *JOURNAL OF MOLECULAR DIAGNOSTICS*
Schrijver, I., Oitmaa, E., Metspalu, A., Gardner, P.
2005; 7 (3): 375-387
- **Diagnostic testing by CFTR gene mutation analysis in a large group of Hispanics novel mutations and assessment of a population-specific mutation spectrum** *JOURNAL OF MOLECULAR DIAGNOSTICS*
Schrijver, I., Ramalingam, S., Sankaran, R., Swanson, S., Dunlop, C. L., Keiles, S., Moss, R. B., Oehlert, J., Gardner, P., Wassman, E. R., Kammesheidt, A.
2005; 7 (2): 289-299
- **A phase II, double-blind, randomized, placebo-controlled clinical trial of tgAAVCF using maxillary sinus delivery in patients with cystic fibrosis with antrostomies** *HUMAN GENE THERAPY*
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2002; 13 (11): 1349-1359
- **Safety and biological efficacy of an adeno-associated virus vector cystic fibrosis transmembrane regulator (AAV-CFTR) in the cystic fibrosis maxillary sinus** *11th Annual North American Cystic Fibrosis Conference*
Wagner, J. A., Messner, A. H., Moran, M. L., DAIFUKU, R., Kouyama, K., Desch, J. K., Manley, S., Norbash, A. M., Conrad, C. K., Friborg, S., Reynolds, T., Guggino, W. B., Moss, et al
JOHN WILEY & SONS INC.1999: 266-74
- **Maxillary sinusitis as a surrogate model for CF gene therapy clinical trials in patients with antrostomies** *JOURNAL OF GENE MEDICINE*
Wagner, J. A., Nepomuceno, I. B., Shah, N., Messner, A. H., Moran, M. L., Norbash, A. M., Moss, R. B., Wine, J. J., Gardner, P.
1999; 1 (1): 13-21
- **Adenovirus-mediated transduction of intestinal cells in vivo** *HUMAN GENE THERAPY*
Foreman, P. K., Wainwright, M. J., Alicke, B., Kovesdi, I., Wickham, T. J., Smith, J. G., Meier-Davis, S., Fix, J. A., Daddona, P., Gardner, P., Huang, M. T.
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- **Efficient and persistent gene transfer of AAV-CFTR in maxillary sinus** *LANCET*
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- **A phase I/II study of tgAAV-CF for the treatment of chronic sinusitis in patients with cystic fibrosis** *HUMAN GENE THERAPY*
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- **Nuclear export of NF-ATc enhanced by glycogen synthase kinase-3** *SCIENCE*
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1997; 275 (5308): 1930-1933
- **Toward cystic fibrosis gene therapy** *ANNUAL REVIEW OF MEDICINE*
Wagner, J. A., Gardner, P.
1997; 48: 203-216
- **Reduced IL-10 secretion by CD4(+) T lymphocytes expressing mutant cystic fibrosis transmembrane conductance regulator (CFTR)** *CLINICAL AND EXPERIMENTAL IMMUNOLOGY*
Moss, R. B., BOCIAN, R. C., Hsu, Y. P., Dong, Y. J., Kemna, M., Wei, T., Gardner, P.
1996; 106 (2): 374-388
- **Mechanism of the antiproliferative action of leflunomide - A77 1726, the active metabolite of leflunomide, does not block T-cell receptor-mediated signal transduction but its antiproliferative effects are antagonized by pyrimidine nucleosides** *JOURNAL OF HEART AND LUNG TRANSPLANTATION*
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- **CALCIUM-DEPENDENT AND CAMKII-DEPENDENT CHLORIDE SECRETION INDUCED BY THE MICROSOMAL CA²⁺-ATPASE INHIBITOR 2,5-DI-(TERT-BUTYL)-1,4-HYDROQUINONE IN CYSTIC-FIBROSIS PANCREATIC EPITHELIAL-CELLS** *JOURNAL OF CLINICAL INVESTIGATION*
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- **ACTIVATION OF CFTR CHLORIDE CURRENT BY NITRIC-OXIDE IN HUMAN T-LYMPHOCYTES** *EMBO JOURNAL*
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1995; 14 (12): 2700-2707
- **MOLECULAR STRATEGIES FOR THERAPY OF CYSTIC-FIBROSIS** *ANNUAL REVIEW OF PHARMACOLOGY AND TOXICOLOGY*
Wagner, J. A., Chao, A. C., Gardner, P.
1995; 35: 257-276
- **INHIBITION BY SK-AND-F-96365 OF CA²⁺ CURRENT, IL-2 PRODUCTION AND ACTIVATION IN T-LYMPHOCYTES** *BRITISH JOURNAL OF PHARMACOLOGY*
Chung, S. C., McDonald, T. V., Gardner, P.
1994; 113 (3): 861-868
- **VOLUME-ACTIVATED CHLORIDE CURRENT IS NOT RELATED TO P-GLYCOPROTEIN OVEREXPRESSION** *CANCER RESEARCH*
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- **STIMULATION OF CHLORIDE SECRETION BY P-1 PURINOCEPTOR AGONISTS IN CYSTIC-FIBROSIS PHENOTYPE AIRWAY EPITHELIAL-CELL LINE CFPEO-** *BRITISH JOURNAL OF PHARMACOLOGY*
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- **ACTIVATION OF INTESTINAL CFTR CL- CHANNEL BY HEAT-STABLE ENTEROTOXIN AND GUANYLIN VIA CAMP-DEPENDENT PROTEIN-KINASE** *EMBO JOURNAL*
Chao, A. C., deSauvage, F. J., Dong, Y. J., Wagner, J. A., Goeddel, D. V., Gardner, P.
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- **SIGNAL TRANSDUCTION BY T-CELL RECEPTORS - MOBILIZATION OF CA AND REGULATION OF CA-DEPENDENT EFFECTOR MOLECULES** *AMERICAN JOURNAL OF PHYSIOLOGY*
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- **ANTISENSE OLIGODEOXYNUCLEOTIDES TO THE CYSTIC-FIBROSIS TRANSMEMBRANE CONDUCTANCE REGULATOR INHIBIT CAMP-ACTIVATED BUT NOT CALCIUM-ACTIVATED CHLORIDE CURRENTS** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
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- **HUMAN-LYMPHOCYTES TRANSCRIBE THE CYSTIC-FIBROSIS TRANSMEMBRANE CONDUCTANCE REGULATOR GENE AND EXHIBIT CF-DEFECTIVE CAMP-REGULATED CHLORIDE CURRENT** *JOURNAL OF BIOLOGICAL CHEMISTRY*
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