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 path 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


• Hereditary sensorineural hearing loss: advances in molecular genetics and mutation analysis EXPERT REVIEW OF MOLECULAR DIAGNOSTICS
Schrijver, I., Gardner, P.
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• Genotyping microarray for the detection of more than 200 CFTR mutations in ethnically diverse populations JOURNAL OF MOLECULAR DIAGNOSTICS
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• 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
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
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
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
1999; 1 (1): 13-21

• Adenovirus-mediated transduction of intestinal cells in vivo HUMAN GENE THERAPY
1998; 9 (9): 1313-1321

• Efficient and persistent gene transfer of AAV-CFTR in maxillary sinus LANCET
1998; 351 (9117): 1702-1703

• 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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• Toward cystic fibrosis gene therapy ANNUAL REVIEW OF MEDICINE
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• Reduced IL-10 secretion by CD4(+) T lymphocytes expressing mutant cystic fibrosis transmembrane conductance regulator (CFTR) CLINICAL AND EXPERIMENTAL IMMUNOLOGY
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• 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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1995; 14 (6): 1016-1030
• **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*
  Chao, A. C., Kouyama, K., Heist, E. K., Dong, Y. J., Gardner, P.
  1995; 96 (4): 1794-1801

• **ACTIVATION OF CFTR CHLORIDE CURRENT BY NITRIC-OXIDE IN HUMAN T-LYMPHOCYTES** *EMBO JOURNAL*
  Dong, Y. J., Chao, A. C., Kouyama, K., Hsu, Y. P., BOCIAN, R. C., Moss, R. B., Gardner, P.
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• **MOLECULAR STRATEGIES FOR THERAPY OF CYSTIC-FIBROSIS** *ANNUAL REVIEW OF PHARMACOLOGY AND TOXICOLOGY*
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  Chung, S. C., McDonald, T. V., Gardner, P.
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  Nghiem, P., OLLICK, T., Gardner, P., Schulman, H.
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• **ACTIVATION OF CA2+ CURRENT IN JURKAT T-CELLS FOLLOWING THE DEPLETION OF CA2+ STORES BY MICROSOMAL CA2+-ATPASE INHIBITORS** *JOURNAL OF IMMUNOLOGY*
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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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• **CLONING AND ANALYSIS OF 2 NEW ISOFORMS OF MULTIFUNCTIONAL CA2+/CALMODULIN-DEPENDENT PROTEIN-KINASE - EXPRESSION IN MULTIPLE HUMAN TISSUES** *JOURNAL OF BIOLOGICAL CHEMISTRY*
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• **FLASH-PHOTOLYSIS OF CAGED INOSITOL 1,4,5-TRISPHOSPHATE ACTIVATES PLASMA-MEMBRANE CALCIUM CURRENT IN HUMAN T-CELLS** *JOURNAL OF BIOLOGICAL CHEMISTRY*
  McDonald, T. V., Premack, B. A., Gardner, P.
  1993; 268 (6): 3889-3896

• **RECOMBINANT HUMAN TUMOR-NECROSIS-FACTOR-ALPHA INDUCES CALCIUM OSCILLATION AND CALCIUM-ACTIVATED CHLORIDE CURRENT IN HUMAN NEUTROPHILS - THE ROLE OF CALCIUM CAMCALDUMIN-DEPENDENT PROTEIN-KINASE** *JOURNAL OF BIOLOGICAL CHEMISTRY*
  SCHUMANN, M. A., Gardner, P., Raffin, T. A.
• SIGNAL TRANSDUCTION BY T-CELL RECEPTORS - MOBILIZATION OF CA AND REGULATION OF CA-DEPENDENT EFFECTOR MOLECULES AMERICAN JOURNAL OF PHYSIOLOGY
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• REGULATION OF CL- CHANNELS BY MULTIFUNCTIONAL CAM KINASE NEURON
  Nishimoto, I., Wagner, J. A., Schulman, H., Gardner, P.
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• ACTIVATION OF CHLORIDE CHANNELS IN NORMAL AND CYSTIC-FIBROSIS AIRWAY EPITHELIAL-CELLS BY MULTIFUNCTIONAL CALCIUM CALMODULIN-DEPENDENT PROTEIN-KINASE NATURE
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• A CAMP-REGULATED CHLORIDE CHANNEL IN LYMPHOCYTES THAT IS AFFECTED IN CYSTIC-FIBROSIS SCIENCE
  Chen, J. H., Schulman, H., Gardner, P.
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• TRIGGERING OF LYMPHOCYTES-T VIA EITHER T3-TI OR T11 SURFACE-STRUCTURES OPENS A VOLTAGE-SENSITIVE PLASMA-MEMBRANE CALCIUM-PERMEABLE CHANNEL - REQUIREMENT FOR INTERLEUKIN-2 GENE-FUNCTION JOURNAL OF BIOLOGICAL CHEMISTRY
- **Dihydropyridine Bay K-8644 Activates Lymphocyte-T Calcium-Permeable Channels** *Molecular Pharmacology*

  Young, W., Chen, J., Jung, F., Gardner, P.

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