CURRICULUM VITAE

(April 9, 2010)

Peter L. Pedersen, Ph.D.

(Professor, Biological Chemistry and Center for Metabolism)

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CURRICULUM VITAE
(Peter L. Pedersen)

1. PRIOR TO UNIVERSITY

Born: Muskogee, Oklahoma
Attended Catoosa (Indian) Schools, Catoosa, Cherokee Nation (Near Tulsa, Okla)
School Salutatorian; Letters in Baseball (First base), Basketball (Center), Football (End)

2. UNIVERSITY DEGREES AND APPOINTMENTS

1961 B.S. in Chemistry (Engineering School), University of Tulsa, Tulsa, Oklahoma
1964 Ph.D. in Chemistry, (Biochemistry Major), University of Arkansas, Fayetteville, Arkansas, (Research Advisor, Jacob Sacks, M.D., Ph.D)
1964 Postdoctoral Fellow, Department of Physiological Chemistry, The Johns Hopkins University School of Medicine, Baltimore, Maryland (Research Advisor: A. L. Lehninger, Ph.D.)
1967 Instructor, Department of Physiological Chemistry, The Johns Hopkins University School of Medicine
1968 Assistant Professor, Department of Physiological Chemistry, The Johns Hopkins University School of Medicine
1972 Associate Professor, Department of Physiological Chemistry, The Johns Hopkins University School of Medicine
1975 Professor, Department of Biological Chemistry*, The Johns Hopkins University School of Medicine
1992-1993 Fogarty Scholar in Residence, NIH (NCI), Bethesda, MD. (Sponsor, Claude Klee; interacted with laboratories of C. Klee, M. Gottesman and I. Pastan at the NCI)
(*Department name changed in 1984)
2009–Present Professor, Department of Biological Chemistry & Center for Cell Metabolism and Obesity Research, The Johns Hopkins University, School of Medicine

3. AWARDS/HONORS/ACCOMPLISHMENTS

A. Teaching/Research (General)

1. Eight certified teaching awards (Believed to be most among JHUSOM faculty)
2. Forty three consecutive years (no absence) as a Teacher of Medical Students (JHUSOM)
3. Above the 95th percentile of the distribution of (extramural) NIH grants (Past 25 yrs.)
4. Consistent funding from the NIH (> 40 yrs.)
5. One of the longest NIH R01grants (39 yrs, NCI.)
6. Longest term (> 25 years) as Director of a JHUSOM Biotechnology Facility, "The Synthesis and Sequencing Facility" [Founded the facility; Now a self-supporting Biotechnology facility managed by Jody Franklin (http://biolchem.bs.jhmi.edu/tssf/personnel/index.asp)]

B. Teaching

1974 Certificate of Excellence in Teaching Preclinical Sciences
1976 Certificate of Excellence in Teaching Preclinical Sciences
1977 Certificate of Excellence in Teaching Preclinical Sciences
1981 W. Barry Wood Award for Excellence in Teaching Preclinical Sciences

1982 Certificate of Excellence in Teaching Preclinical Sciences
1984 Certificate of Excellence in Teaching Preclinical Sciences
1984 Professors' Award for Distinction in Teaching in the Preclinical Divisions (Highest award given at JHU for teaching)
1994 Certificate of Excellence in Teaching Preclinical Sciences
1984-2010 Consistently ranked at or near the top by Medical Students for excellence in teaching Biochemistry/Metabolism and Relationship to Disease

C. Research / Grant Support)

1966-1968 NIH Postdoctoral Fellowship
1968-Present NIH R01Grant (CA 10951), "Control of Enzymatic Phosphate Transfer in Mitochondria" **(Active)**
1969-1974 NIH (NCI) Research Career Development Award
1982-1997 NIH R01 Grant (CA 32742), "Glucose Catabolism in Neoplastic Tissues"
1992-1993 NIH Fogarty Scholar in Residence at the NCI
1990-2005 NIH R01 Grant (DK 43692), "Molecular and Chemical Description of CFTR Function"
1998-Present NIH R01 Grant (CA 80118) "Cancer Related Glycolytic Gene: Regulation and Targeting" **(Active) (**(R01 grant)
2005 – **Present** NIH PPG grant 1P01 HL081427-01 "Mitochondrial Function in Ischemic Heart Disease" Project 4 "Regulation of the mitochondrial ATP synthase" (**Active**)

D. Invited Lectures (Seminars are not included)

Invited Lectures on Cancer (Metabolism, Gene Regulation, Therapy): Hepatoma Conference in San Diego, California, 1972; M.D. Anderson Hospital and Tumor Institute, Houston, Texas, 1974; Gordon Research Conferences, 1979 and 1984; Catholic University & Pathological Institute, Rome, Italy, 1985; New York Academy Sciences meeting in Villa Olmo, Italy, 1986; AACR Meeting, Ontario Canada, 1995; the CARSO Conference on Oncology Research, Bari, Italy, 1996; Johns Hopkins University Continuing Education Course, Baltimore, MD, 1997; Univ. of Washington, Seattle, 1998; International Conference on Tumor Cell Metabolism, Mobile, Alabama, 2001; EBEC Meeting, Arcachon, France 2002; Meeting on Interventional Oncology, Tyson's Corner, Virginia, 2002; NIH , NCI Workshop on Mitochondrial Function and Cancer, Bethesda, MD, 2004; NCI, Bethesda, MD, 2006, 2009; SMU, Houston, TX, 2007; MD Anderson Hospital and Tumor Institue, Houston, TX, 2009; AICR (American Institute of Cancer research), Washington DC, 2009; Plenary Lecture, EBEC Meeting, Warsaw, Poland 2010. Major Lecturer, Ann. Meeting Brazilian Biochem./Mol. Biol. Society, Iguacu Falls, Brazil 2010

Invited Lectures on Mitochondrial ATP Synthase: in Bressanone, Italy, 1973; Mosbach, Germany, 1978; Bologna, Italy, 1980; Lyon, France, 1982; Hannover, Germany, 1984; Bari, Italy, 1985; Prague, Czechoslovakia, 1986; Bresica, Italy, 1987; Bari, Italy, 1989, and Gothenburg, Sweden, 1991, Helsinky, Finland, 1992; Schwangau,Germany, 1992, Bari, Italy 1993, Zurich, Switzerland, 1994; Bari, Italy, 1996; Osnabruck, Germany (1998); FEBS Congress, Warsaw, Poland (2004) Gordon Research Conferences (1971, 1979, 1981, 1983, 1995, 1997, 1999, 2001, 2003, 2005, 2006, 2009)

Invited Speaker at Symposia on Transport ATPases: at the FASEB meeting, New Orleans, 1979; ACS meeting in Las Vegas, Nevada, 1980; The Biophysical Society meeting in La Jolla, California, 1983; The Biophysical Society meeting in Baltimore, Maryland, 1985, The FASEB meeting in Washington, D. C., 1986, Biophysical Society meeting, Baltimore, Maryland, 1990, ASBMB meeting,

Houston, Texas, 1992, New York Academy of Sciences Meeting, Cleveland, Ohio, 1992, FASEB Summer Research Conference, Copper Mountain, Colorado, 1996; 29th FEBS Congress, Warsaw, 2004; FASEB Summer Research Conference, Snowmass, Colorado (1999, 2001, 2003) and Saxtons River, Vermont (2005, 2007), Snowmass, Colorado (2010)

FASEB Awards to Present Symposia Papers: on ATP Synthesis and ATP Hydrolysis at International Congresses in Lucerne, Switzerland, 1969; Stockholm, Sweden, 1973; Hamburg, Germany, 1976; and Jerusaleum, Israel, 1991

Invited Speaker at Cystic Fibrosis Meetings: NIH, 1991; Williamsburg, Virginia, 1991, 1992, 1993, 1995, 1996; 1997; 1998; Dallas Texas, 1991, 1993; NIH (NIDDK), 1994, Woods Hole, 1994; Orlando, Florida, 1996; Univ. of Mich., 1996 (Keynote Speaker); NIH, 1997 (NIA); Bordeaux, France, 1999 (Keynote Speaker); NIH (NCI), 1999 (Helped bring the field to a molecular level; *Left the field to place more effort on cancer research and also to pursue a new research project on heart disease.*)

E. Honorary / Distinguished Presentations

Oklahoma State University (Stillwater), University of Arkansas (Fayetteville), Bordeaux, France, University of Central Florida (Orlando)

4. HONORARY AND PROFESSIONAL SOCIETIES (PRESENT OR PAST)

ASBMB (FASEB), Sigma Xi, Alpha Chi Sigma Chemical Fraternity, Biophysical Society, American Association for Cancer Research, Bioenergetics Subgroup, American Association for the Advancement of Science, Association of Biomolecular Resource Facilities (ABRF), The Mitochondrial Research Society

5. EDITORIAL BOARDS AND OUTSIDE COMMITTEES

1973-1978 Journal of Biological Chemistry (Editorial Board)
1982-present Archives of Biochemistry and Biophysics (Editorial Board)
1985-present Journal of Bioenergetics and Biomembranes (Editorial Board)
1990-present **Journal of Bioenergetics and Biomembranes (Editor-in-Chief)**
1986-1996 Cancer Research (Associate Editor)
1985-1995 Current Topics in Bioenergetics (Advisory Board)
1979 Gordon Research Conference on Energy Coupling Mechanisms (Advisory Committee)
1980-1987 U. S. Bioenergetics Sub-group (Executive Secretary)
1981 Gordon Research Conference on Energy Coupling Mechanisms (Co-Chairman - Elect)
1983 Gordon Research Conference on Energy Coupling Mechanisms (Chairman - Elect)
1985-1990 Member, U. S. National Committee for the International Union for Pure and Applied Biophysics (USNC/IUPAB)
1986-1992 IUB/IUPAB Bioenergetics Group (Chairman - Elect)
1986 Biophysical Society Council (elected)
1987 Biophysical Society Executive Committee (elected)
1990 Biophysical Society (Program Chairman, 1990 Meeting)
1992 American Society for Biochemistry and Molecular Biology (Co-Program Chairman, 1992 meeting)
1993-1996 FASEB Conference Committee (Chairman)
1997 Review Committee, NIH Heart, Blood, and Lung Institute
1998 Nominating Committee, Biophysical Society
1999 FASEB Meeting on Transport ATPases (Co-Chairman-Elect)

2001 FASEB Meeting on Transport ATPases (Chairman –Elect)
2001-present Mitochondrion (Editorial Board)

6. STUDY SECTIONS

1975-1977 National Institutes of Health (Biochemistry Study Section) (Ad Hoc Member)
1983-1987 National Institutes of Health (Physical Biochemistry Study Section)
1985-1987 Chairperson (Elect), Physical Biochemistry Study Section
1994-1998 National Institutes of Health (Physical Biochemistry Study Section)
2005 & 2007 National Institutes of Health (Special Emphasis Panels)

7. STUDENTS TRAINED OR HELPED TRAIN (54)

A. Ph.D (17)*/ MS** (1), (BIOLOGICAL CHEMISTRY)

Year Awarded

1972* Dr. William A. Catterall, Professor and Chairman, Dept. of Molecular Pharmacology, University of Washington, Seattle, Washington (Member, National Academy of Sciences)
1974* Dr. William A. Coty, Director, Array Platform Development, Motorola Life Sciences, Tempe, AZ
1977* Dr. Ernesto Bustamante, Scientific Director, BioGenomica, Lima, Peru; Also Political Analyst, Lima, Peru
1978* Dr. Nitza Cintron, Formerly Biochemistry Lab Chief, NASA Space Center, Houston, Texas; then Deputy Chief, Space Medicine and Health Care System, NASA Space Center, Houston, Texas. NASA Hall of Fame; **Present:** Associate Professor Internal Medicine, University of Texas Medical Branch, Galveston, Texas
1982* Dr. Naomi Geller-Lipsky, Research Biochemist, now Decorative Artist
1984* Dr. Maureen McEnery, Associate Professor, Department of Physiology and Biophysics, Case Western Reserve University
1989* Dr. David Garboczi, Investigator, Structural Biology Section, NIH (NIAID)
1991* Dr. John Barnard; Last Known Position: Research Associate, State University of New York at Buffalo
1992 (Visiting) Dr. A.R. LoPiero, Faculty, University of Catania, Sicily
1995* Dr. Michael Lebowitz, Director of Research, Biotech Co., Rockville, MD
1998* Dr. Weiying Pan, Biosafety, Johns Hopkins University, School of Medicine
1998* Dr. Tamara Golden, Research Scientist, Buck Institute for Research on Aging, Novato, CA
1998** Dr. Curt Heese, Received MS degree, entered medical school, now a Physcian
2000-2001 (Visiting) Marek Verbacky, Member, Institute of Physiology, Academy of Science of the Czech Republic, Prague
2004* Dr. Min Gyu Lee, Assistant Professor, MD Anderson Hospital and Tumor Institute, Houston, Texas
2006* Dr. Chen Chen, Research Associate, Center for Advanced Technology (CARB), Rockville, MD
2009* David Blum, in training
2009* Han Gil Lee, in training

B. Posdoctoral (32), Biological Chemistry

Drs. T. L. Chan, John Soper, Klaus Schwerzmann, Joseph Houstek, Ronald Kaplan, Richard Nakashima, Janna Wehrle, David Parry, Noreen Williams, Goffredo Petrone, Marco Paggi, Raymond Pratt, Krishan

Arora, Gloria Ferreira, Philip Thomas, Maurizio Fancuilli, Michael Bauman, Young Hee Ko, Harry Price, Saroj Mathupala, Julie Reeves, Annette Rempel, Natalie Lu, Sangjin Hong, Jean-Phillippe Annereau, Ashish Goel, Chris Jeffers, Min-Gyu Lee, Jiang Tao, Mohammad Abusedera, Qining Qin, Gang Shi

C. Art as Applied to Medicine (4)

2000 David Blum
2005 Alison Burke
2005 Karen Bucher
2008 Ammon Posey

8. CURRENT EDUCATIONAL RESPONSIBILITIES

Member, Educational Policy Committee at JHUSOM
Co-Director, Metabolism Section Medical Student "Scientific Foundations of Medicine" Course
Course; Lecturer, Metabolism Section, "Scientific Foundations of Medicine" Course
Participant; Special Topics in Biological Chemistry

9. GRADUATE PROGRAMS (MEMBER)

Biological Chemistry
Molecular and Cellular Medicine
Biochemistry, Cellular, and Molecular Biology (BCMB)
Intercampus Program in Biophysics

10. NIH TRAINING PROGRAMS (Previous)

Nephrology (member)
Cancer Pathology (member)

11. UNIVERSITY COMMITTEE RESPONSIBILITIES

A. Current
1978-present Director or Co-Director, Metabolism Section, Molecules and Cells Course
1986-present Director, Synthesis and Sequencing Core Facility
1986-present Chairman, Albert L. Lehninger Lectureship Committee
1993-present Educational Policy Committee
1998-present Member, Admission's Committee, Graduate Program in Biological Chemistry
1999-Present Member Chesapeake Biological Laboratories Lectureship Committee

B. Past
1972-1978 Chairman, Admissions Subcommittee, Graduate Program in Biochemistry, Cellular and Molecular Biology (BCMB)
1979-1996 Member, Admissions Subcommittee, BCMB Graduate Program
1975-1976 Member, Committee to Assess Indirect Cost
1976 Acting Director, Graduate Program in Biochemistry, Cellular and Molecular Biology (BCMB)
1976-1979 Member, Awards Committee
1977-1978 Member, Preclinical Teaching Building Committee
1978-1982 Member, Professorial Promotions Committee

1983-1989 Associate Professors' Review Committee
1986-1989 Clinician Scientists Awards Committee
1986-2009 Educational Policy Committee
1987-1996 Searle/Pew Scholars Program Selection Committee
1991 Chairman, LCME Committee for Review of Basic Sciences
1**994-1998** Molecular Medicine Curriculum Committee
1998 Chairman, LCME Committee for Review of Basic Sciences
2004 -2009 Oversight Committee for the Mass Spectrometry Core Facility

12. RESEARCH ACCOMPLISHMENTS (With Co-Workers and Collaborators)

A. Participated with Drs. Carl Schnaitman, Jack W. Greenawalt, and T.L. Chan in the development of procedures routinely used today for the ***separation of the 4 components of mitochondria (inner membrane, outer membrane, inter-membrane space, and matrix)*** **(Publications 8, 10, and 12)**. [*This procedure and modified versions thereof have been used to determine the submitochondrial location of almost every known mitochondrial enzyme.*]

B. Characterized ***mitochondrial nucleoside diphosphokinase*** with regard to enzymatic and hydrodynamic properties, submitochondrial location, and function **(Publications 5-10, and 22)**. [*Mutations in this enzyme are now known to cause developmental problems in Drosophila. This enzyme is also believed to be involved in the development of certain childhood tumors, e.g., neuroblastomas, and to be involved also in cancer metastasis*.]

C. Helped guide work of a number of predoctoral students and postdoctoral fellows that led to the ***purification from liver mitochondria of the complete ATP synthase complex and its associated F_1-ATPase, F_0 proton channel, and inhibitory peptide*** **regulator (Publications 15, 17,21, 39, 45, 62, and 92)**. [*The ATP synthase complex, present in all nucleated cells, provides ATP either directly to energize cellular processes or indirectly as NTPs through the action of the above nucleoside diphosphokinase.*]

D. Guided work of William Catterall that demonstrated concurrently with Drs. Alan Senior and Alex Tzagoloff (then at the U. of Wisconsin) that the catalytic ***F_1 moiety of ATP synthases is comprised of 5 non-identical subunits*** **(Publications 15 and 21)**. We were the first to observe both α and β subunits of F_1 in SDS-PAGE gels **(Publication 17)**, and to demonstrate the unusual ***$\alpha_3\beta_3\gamma\delta\varepsilon$ stoichiometry*** **(Publications 15 and 21)**. ***These finding have now been reproduced for all ATP synthases from bacteria to people.*** Finally, we were also able to demonstrate with an electron microscopist (Glenn Decker) that the F_1 moiety consists of a ***hexagonal array of subunits*** (α and β) with a central mass, predicted to be the small subunits (γδε). (**Publication 3 under "Review articles" etc**.). [*The F_1 moiety of the ATP synthase is now known from work of Yoshida and coworkers in Japan to be an ATP hydrolysis driven motor and the small central subunits* (γδε) *the rotor of this motor. In mitochondria the enzyme works in reverse being driven by an electrochemical gradient of protons to make ATP as proposed by Peter Mitchell's chemiosmotic hypothesis.*]

E. Obtained ***crystals of the catalytic F_1 moiety of the ATP synthase*** for the first time (1978) together with Mario Amzel, now Chair of Biophysics, JHUSOM, **(Publications 34 and 37)**, and then collaborated with Mario Amzel, Michael McKinney, and P. Narayanan to elucidate the ***3-dimensional structure of the enzyme complex at 9 Å*** resolution **(Publication 58)**. Finally, in a collaborative project with Mario Bianchet and Mario Amzel, the ***structure of F_1 was obtained first at 3.6 Å resolution*** **(Publication 105)** and finally ***at atomic resolution (2.8 Å)*** **(Publication 135**). The final structure represents the first of the active conformation. Most recently, a ***transition state structure*** **(Publication 157)** in the presence of

vanadate has been obtained with crystals prepared by Dr. Young Ko via a project led by her in collaboration with the NIH laboratory headed by David Garboczi. [*The importance of the latter work (157) is that it shows for the first time how ATP is made at the active site of the complex ATP synthase.*]

F. First to visualize with colleagues John Soper, Glenn Decker, Jack Greenawalt, Maureen McEnery, M., Buhle, Jr., and U. Aebi, the ***structure of a complete ATP synthase molecule*** under the electron microscope **(Publications 45, and 62)**. This has now led to the discovery by Young Ko that the ATP synthase in mitochondria exists as a larger complex consisting also of the adenine nucleotide carrier and the phosphate carrier.[*The complete ATP synthase/phosphate carrier/adenine nucleotide carrier complex isolated in pure form by Young Ko has been named the **"ATP synthasome"***] **(Publications 150,).** A 3-D structure of this large super complex has been obtained at 23 Å resolution by Young Ko and Chen Chen in collaboration with the laboratory of Wah Chiu at Baylor College of Medicine **(Publication 153).**

G. Prepared morphologically and functionally intact mitochondria from hepatoma tissue (**Publication 13)**. [*This was the first clear demonstration that tumor mitochondria have a normal capacity to make ATP.*]

H. Helped guide work of Ernesto Bustamante **(Publications 31 and 49**) that showed that ***hexokinase bound to mitochondria of cancer cells is essential for the "Warburg Effect"***, i.e., a high glycolytic activity even in the presence of oxygen. [*Hexokinase binding to mitochondria now forms the clinical basis of PET analysis for detecting many cancers.*] Guided work of Richard Nakashima in collaboration with Marco Colombini that showed that the ***outer mitochondrial membrane receptor for hexokinase* (Publications 77) is a** protein called ***VDAC***. [*It is now known from the work of others that hexokinase bound to VDAC helps immortalize cancer cells by preventing cell death by apoptosis*]. Later, together with Richard Nakashima and Marco Paggi, the hexokinase bound to tumor mitochondria was purified and categorized as ***hexokinase 2 (HK-2)*** **(Publication 86).**

I. Help guide work of Krishan Arora that demonstrated that the bound hexokinase has preferred access to ATP generated by the mitochondria **(Publication 88)**. **A** full length cDNA of the tumor enzyme was cloned, sequenced, and overexpressed in active form in *E. coli* **(Publication 99)**, **a**nd the first site directed mutations marking the catalytic site were completed **(Publication 104)**. Krishan Arora showed also that tumor hexokinase is a protein kinase **(Publication 114)**.
Significantly, the predominant form of tumor hexokinase has been confirmed in work by Annette Rempel and Saroj Mathupala as HK-2. The ***HK-2 promoter region*** has now been isolated and sequenced **(Publication 121).** Finally, the HK-2 gene has been shown to be amplified **(Publication 126)** and to be activated by the mutated tumor suppressor p53 (**Publication 131**) as well as glucose, hypoxic conditions, and a variety of known transcription factors **(Publications 144, 151, 152)**. In other work Ashish Goel presented evidence that the proximal promoter region of the HK-2 gene has several methylation sites that are demethylated in a highly malignant hepatoma cell line **(Publication 151)** and Min Gyu Lee has demonstrated that much of the strength of the the HK-2 promoter region lies near the transcription start site **(Publication 152)**.

J. Helped guide experiments of Young Ko and collaborators where she independently discovered that the simple alkylating agent 3-bromopyruvate (3BP) is a powerful anticancer agent in cells in culture. This agent was shown also to be a powerful inhibitor of cancers in animal models **(Publications 142, 146, 155).** A single injection of 3BP into liver implanted tumors kills 70-90 percent of the tumor cells **(Publication 146),** and systemic injection suppresses metastatic lung cancers (**Publication 146**). ***Significantly, in a project led by Young Ko, advanced hepatocellular carcinomas growing in a rodent model were eradicated in all tested cases without apparent toxicity and without recurrence (Publication***

155). More recent work by Young Ko has demonstrated that 3-bromopyruvate is far superior in killing human cancer cells in culture (derived from a wide variety of tissues) than a number of different chemotherapeutic agents widely used to treat human cancers.

K. Helped guide experiments of William Coty to label the mitochondrial phosphate transport system, and estimate its molecular size **(Publication 25)**; later via the involvement of several Postdoctoral Fellows (Ronald Kaplan, Gloria Ferreria, and Raymond Pratt) this transport system was purified, cloned and sequenced, and its import into mitochondria clearly demonstrated **(Publications 60, 78, 95, and 102).**

L. Helped guide work of Ronald Kaplan that resulted in the first method for obtaining a reconstitutively active dicarboxylate carrier from mitochondria **(Publication 74).**

M. Helped guide work of William Coty and Janna Wehrle that showed that calcium is transported from the mitochondrial matrix to the cytoplasm **(Publications 19 and 47)**. Later exit mechanisms for Ca^{++} from mitochondria became widely identified in many tissues.

N. Helped guide work of Naomi Geller that showed that the inner and outer mitochondrial membranes are subject to different rates of degradation and synthesis *in vivo*. This work led us to propose the first *in vivo* model for mitochondrial biogenesis **(Publications 50, and 55).**

O. Helped design and have synthesized with David Garboczi a peptide predicted from homology arguments to be at the catalytic site of the mitochondrial ATP synthase, and then demonstrated that this peptide does, in fact, interact with ATP **(See Publication 84)** [First, chemical synthesis of an ATP binding site]. The NMR structure of this peptide in the presence of ATP was later elucidated in a collaborative study with Albert Mildvan and W-J Chuang **(Publication 122)**.

P. Helped guide work of David Gaboczi that resulted in the overproduction of both α and β subunits of rat liver ATP synthase in *E. coli*, purified them to homogeneity, and showed they bind nucleotide **(Publications 87, and 98)**. Site directed, random, and deletion mutations were made to localize the nucleotide binding domain of the β "catalytic" subunits **(Publications 100 and 109)**.

Q. Helped guide work of John Barnard that led to the characterization of the terminal steps of glycolysis in African trypanosomes that cause ***African sleeping sickness*** **(Publications 89, 111, 118)**. Significantly, a single enzyme (pyruvate kinase) supplies all the ATP to energize trypanosomal division and replication in the infectious form of this parasite and is therefore a potential drug target.

R. Helped guide work of Philip Thomas to design and have P, Shenbagamurthi, synthesize a 67 amino acid peptide corresponding to the central region of the Cystic Fibrosis Transmembrane Conductance Regulator (CFTR), and showed it binds ATP. Postulated with these collaborators and others a simple structural model to explain the ***chemical basis of Cystic Fibrosis*** **(Publication 103)**. Helped guide additional work of Philip Thomas to have P. Shenbagamurthi synthesize the CFTR peptide lacking the phenyalanine (F508), the deletion responsible for 70% of CF cases, and demonstrated it is structurally different from the wild type peptide **(Publication 107)**. ***These studies were the first to obtain "in the test tube" a functional part of the CFTR protein and to implicate that most cases of the disease Cystic Fibrosis are the result of a protein folding problem*** **(Publication 110).** Later, helped guide work of Young Ko that demonstrated that the first nucleotide binding domain functions as a weak but active ATPase **(Publication 123)**. Help guide work initated by Young Ko that led Drs. Michael Massiah and Albert Mildvan to obtain by NMR the solution structures of folded and unfolded peptides representative of both the normal region and the diseased causing ΔF508 region of the CFTR protein **(Publication 138)**.

This is the first work to show at a 3-dimensional level the structural change caused by the ΔF508 disease causing mutation that is responsible for most cases of Cystic Fibrosis.

S. First to predict with Philip Thomas and Young Ko that many common genetic diseases may result because of problems in protein folding **(Publication 110, and Publication 56 under "Review Articles"**).

T. Helped design with Young Ko and have chemically synthesized a 51 amino acid segment of the second predicted nucleotide binding domain of CFTR and showed that it also binds ATP **(Publication 117)**.

U. Helped guide the original work of Young Ko who confirmed her hypothesis that tracheal epithelial cells *in vitro* have the capacity to kill bacteria (*P. aeruginosa*) that infect the lungs of most people, but not those of CF patients whose lungs have a defective CFTR protein. This work resulted in the discovery that human tracheal epithelial cells express one or more antimicrobial peptides (**Publication 129)** that protect most people against lung infections but not ΔF508 CF patients.

V. Designated together with Dr. Ernesto Carafoli the simple classification for Transport ATPases as P, V, and F types and later extended this to include the ABC-type Transport ATPases. This classification is now used in almost all publications on the subject (**Publication 32** under "Review Articles etc."). Also, see **Publications 47, 69, and 71 under "Review Articles" etc.**).

Meeting supported by FASEB to discuss recent progress on these transport ATPases have been held every 2-3 years since 1997

13. PUBLICATIONS (Total = 366 with Abstracts; 241 without Abstracts)

A. Refereed Papers Summarizing Original Work (159)

1. Pedersen, P.L., and Sacks, J. (1965) Formation of Fructose-Diphosphate in Muscular Contraction. **Arch. Biochem. Biophys.** 109, 197-199.

2. Pedersen, P.L., and Sacks, J. (1965) Hexosephosphate Formation and the Regulation of Glycolysis in Muscle. **Arch. Biochem. Biophys.** 112, 548-553.

3. Goffeau, A.G., Pedersen, P.L., and Lehninger, A.L. (1967) The Kinetics and Inhibition of the Adenosine Diphosphate-Adenosine Triphosphate Exchange Catalyzed by a Purified Mitochondrial Nucleoside Diphosphokinase. **J. Biol. Chem.** 242, 1845-1853.

4. Erwin, V.G., and Pedersen, P.L. (1968) A Sensitive Gel Filtration Method for Determination of Protein Sulfhydryl Groups with 14C-Chloromercuribenzoate. **Anal. Biochem.** 25, 477-485.

5. Goffeau, A.G., Pedersen, P.L., and Lehninger, A.L. (1968) Reactivity of Thiol Groups in Active and Inactive Forms of a Mitochondrial Nucleoside Diphosphokinase. **J. Biol. Chem.** 243, 1685-1691.

6. Goffeau, A.G., Pedersen, P.L., and Lehninger, A.L. (1968) Regulation de l'activite d'une nucleoside diphosphokinase mitochondriale. **Arch. Intern. de Physiol. et de Biochim.** 76, 179-181.

7. Pedersen, P.L. (1968) Molecular Weight, Sulfhydryl Content, and Phosphorylation of a Homogeneous Mitochondrial Nucleoside Diphosphokinase. **J. Biol. Chem.** 243, 4305-4311.

8. Schnaitman, C.A., and Pedersen, P.L. (1968) Localization of Oligomycin-sensitive ADP-ATP Exchange Activity in Rat Liver Mitochondria. **Biochem. Biophys. Res. Commun.** 30, 428-433.

9. Goffeau, A.G., and Pedersen, P.L. (1969) Inactivations et Protections d'une Nucleoside Diphosphokinase Mitochondriale Purifiee. **Arch. Intern. de Physiol. et de Biochim.** 77, 550-552.

10. Pedersen, P.L., and Schnaitman, C.A. (1969) The Oligomycin-sensitive Adenosine Diphosphate-Adenosine Triphosphate Exchange in an Inner Membrane Matrix Fraction of Rat Liver Mitochondria. **J. Biol. Chem.** 244, 5065-5073.

11. Catterall, W.A., and Pedersen, P.L. (1970) Effects of Phosphotungstic Acid and Silicotungstic Acid on Respiration and Integrity of Rat Liver Mitochondria. **Biochem. Biophys. Res. Commun.** 38, 400-405.

12. Chan, T.L., Greenawalt, J.W., and Pedersen, P.L. (1970) Biochemical and Ultrastructural Properties of a Mitochondrial Inner Membrane Fraction Deficient in Outer Membrane and Matrix Activities. **J. Cell Biol.** 45, 291-305.

13. Pedersen, P.L., Greenawalt, J.W., Chan, T.L., and Morris, H.P. (1970) A Comparison of Some Ultrastructural and Biochemical Properties of Mitochondria from Morris Hepatomas 9618A, 7800 and 3924A. **Cancer Res.** 30, 2620-2626.

14. Schreiber, J.R., Balcavage, W.X., Morris, H.P., and Pedersen, P.L. (1970) Enzymatic and Spectral Analysis of Cytochrome Oxidase in Adult and Fetal Rat Liver and Morris Hepatoma 3924A. **Cancer Res.** 30, 2497-2501.

15. Catterall, W.A., and Pedersen, P.L. (1971) Adenosine Triphosphatase from Rat Liver Mitochondria. I. Purification, Homogeneity, and Physical Properties. **J. Biol. Chem.** 246, 4987-4994.

16. Pedersen, P.L., and Catterall, W.A. (1971) Contribution of ATP Synthesis from Endogenous Substrates to the Oligomycin-sensitive ADP-ATP Exchange Activity of Rat Liver Mitoplasts. **Biochem. Biophys. Res. Commun.** 45, 809-815.

17. Pedersen, P.L., Eska, T., Morris, H.P., and Catterall, W.A. (1971) Deficiency of Uncoupler-stimulated Adenosine Triphosphatase Activity in Tightly Coupled Hepatoma Mitochondria. **Proc. Natl. Acad. Sci. (U.S.A.)** 68, 1079-1082.

18. Catterall, W.A., and Pedersen, P.L. (1972) Adenosine Triphosphatase from Rat Liver Mitochondria. II. Interaction with Adenosine Diphosphate. **J. Biol. Chem.** 247, 7969-7976.

19. Pedersen, P.L., and Coty, W.A. (1972) Energy-dependent Accumulation of Calcium and Phosphate by Purified Inner Membrane Vesicles of Rat Liver Mitochondria. **J. Biol. Chem.** 247, 3107-3113.

20. Bustamante, E., and Pedersen, P.L. (1973) Tetradifon: An Oligomycin-like Inhibitor of Energy-linked Activities of Rat Liver Mitochondria. **Biochem. Biophys. Res. Commun.** 51, 292-298.

21. Catterall, W.A., Coty, W.A., and Pedersen, P.L. (1973) Adenosine Triphosphatase from Rat Liver Mitochondria. III. Subunit Composition. **J. Biol. Chem.** 248, 7427-7431.

22. Pedersen, P.L. (1973) Coupling of Adenosine Triphosphate Formation in Mitochondria to the Formation of Nucleoside Triphosphates. Involvement of Nucleoside Diphosphokinase. **J. Biol. Chem.** 248, 3956-3962.

23. Coty, W.A., and Pedersen, P.L. (1974) Phosphate Transport in Rat Liver Mitochondria, Kinetics and Energy Requirements. **J. Biol. Chem.** 249, 2593-2598.

24. Pedersen, P.L., and Morris, H.P. (1974) Uncoupler-stimulated Adenosine Triphosphatase Activity. Deficiency in Intact Mitochondria from Morris Hepatomas and Ascites Tumor Cells. **J. Biol. Chem.** 249, 3327-3334.

25. Coty, W.A., and Pedersen, P.L. (1975) Phosphate Transport in Rat Liver Mitochondria - Membrane Components Labeled by N-ethylmaleimide During Inhibition of Transport. **J. Biol. Chem.** 250, 3515-3521.

26. Pedersen, P.L. (1975) Interaction of Homogeneous Mitochondrial ATPase from Rat Liver with Adenine Nucleotides and Inorganic Phosphate. **J. Supramolec. Struc.** 3, 222-230.

27. Pedersen, P.L. (1975) Adenosine Triphosphatase from Rat Liver Mitochondria: Separate Sites Involved in ATP Hydrolysis and in the Reversible, High Affinity Binding of ADP. **Biochem. Biophys. Res. Commun.** 64, 610-616.

28. Pedersen, P.L. (1976) Adenosine Triphosphatase from Rat Liver Mitochondria-Evidence for a Mercurial-sensitive Site for the Activating Anion Bicarbonate. **Biochem. Biophys. Res. Commun.** 71, 1182-1188.

29. Pedersen, P.L. (1976) ATP-dependent Reactions Catalyzed by Inner Membrane Vesicles of Rat Liver Mitochondria - Kinetics, Substrate Specificity, and Bicarbonate Sensitivity. **J. Biol. Chem.** 251, 934-940.

30. Soper, J.W., and Pedersen, P.L. (1976) Adenosine Triphosphatase of Rat Liver Mitochondria: Detergent Solubilization of an Oligomycin- and Dicyclohexylcarbodiimide-sensitive Form of the Enzyme. **Biochemistry** 15, 2682-2690.

31. Bustamante, E., and Pedersen, P.L. (1977) High Aerobic Glycolysis of Rat Hepatoma Cells in Culture: Role of Mitochondrial Hexokinase. **Proc. Natl. Acad. Sci. (U.S.A.)** 74, 3735-3739.

32. Bustamante, E., Soper, J.W., and Pedersen, P.L. (1977) A High-yield Preparative Method for Isolation of Rat Liver Mitochondria. **Anal. Biochem.** 80, 401-408.

33. Woods, T.A., Decker, G.L., and Pedersen, P.L. (1977) Anti-hyperlipidemic Drugs - In vitro Effect on the Function and Structure of Rat Liver Mitochondria. **J. Molec. and Cell. Card.** 9, 807-822.

34. Amzel, L.M., and Pedersen, P.L. (1978) Adenosine Triphosphatase from Rat Liver Mitochondria – Crystallization and X-ray Diffraction Studies of the F_1-component of the Enzyme. **J. Biol. Chem.** 253, 2067-2069.

35. Pedersen, P.L., and Hullihen, J. (1978) Adenosine Triphosphatase of Rat Liver Mitochondria - Capacity of the Homogeneous F_1 Component of the Enzyme to Restore ATP Synthesis in Urea-treated Membranes. **J. Biol. Chem.** 253, 2176-2183.

36. Wehrle, J.P., Cintron, N.M., and Pedersen, P.L. (1978) Phosphate Transport in Rat Liver Mitochondria: Energy-dependent Accumulation of Phosphate by Inverted Inner Membrane Vesicles. **J. Biol. Chem.** 253, 8598-8603.

37. Amzel, L.M., and Pedersen, P.L. (1979) Crystallization of F_1-ATPase from Rat Liver Mitochondria. **Methods in Enz.** 55, 333-337.

38. Catterall, W.A., Pedersen, P.L., Lambeth, D.O., and Lardy, H.A. (1979) Purification of F_1-ATPase from Rat Liver Mitochondria. **Methods in Enz.** 55, 320-328.

39. Cintron, N.M., and Pedersen, P.L. (1979) A Protein Inhibitor of the Mitochondrial Adenosine Triphosphatase Complex of Rat Liver. Purification and Characterization. **J. Biol. Chem.** 254, 3439-3443.

40. Cintron, N.M., and Pedersen, P.L. (1979) Purification of an ATPase Inhibitor Peptide Fraction from Rat Liver Mitochondria. **Methods in Enz.** 55, 408-414.

41. Coty, W.A., Wehrle, J.P., and Pedersen, P.L. (1979) Measurement of Phosphate Transport in Mitochondria and in Inverted Membrane Vesicles of Rat Liver. **Methods in Enz.** 56, 353-359.

42. Kaschnitz, R.M., Pedersen, P.L., Morris, H.P., and Hatefi, Y. (1979) Isolation of Mitochondria from Morris Hepatomas. **Methods in Enz.** 55, 79-88.

43. Pedersen, P.L. (1979) The Use of Thin Layer Chromatography on Poly-(ethyleneimine)-Cellulose to Facilitate Assays of ATP-ADP Exchange, Adenylate Kinase, and Nucleoside Diphosphokinase Activity. **Methods in Enz.**, 55, 283-289.

44. Pedersen, P.L., and Hullihen, J. (1979) Resolution and Reconstitution of ATP Synthesis and ATP-dependent Functions of Liver Mitochondria. **Methods in Enz.** 55, 736-741.

45. Soper, J.W., Decker, G.L., and Pedersen, P.L. (1979) Mitochondrial ATPase Complex - A Dispersed, Cytochrome-deficient, Oligomycin-sensitive Preparation from Rat Liver Containing Molecules with a Tripartite Structural Arrangement. **J. Biol. Chem. 254, 11170-11176.**

46. Soper, J.W., and Pedersen, P.L. (1979) Isolation of an Oligomycin-sensitive ATPase Complex from Rat Liver Mitochondria. **Methods in Enz.** 55, 328-333.

47. Wehrle, J.P., and Pedersen, P.L. (1979) Phosphate Transport in Rat Liver Mitochondria - Properties of a Ca^{2+}-activated Uptake Process in Inverted Inner Membrane Vesicles. **J. Biol. Chem**. 254, 7269-7275.

48. Bustamante, E., and Pedersen, P.L. (1980) Mitochondrial Hexokinase of Rat Hepatoma Cells in Culture: Solubilization and Kinetic Properties. **Biochemistry** 19, 4972-4977.

49. Bustamante, E., Morris, H.P., and Pedersen, P.L. (1981) Energy Metabolism of Tumor Cells - Requirement for a Form of Hexokinase with a Propensity for Mitochondrial Binding. **J. Biol. Chem.** 256, 8699-8704.

50. Geller Lipsky, N., and Pedersen, P.L. (1981) Mitochondrial Turnover in Animal Cells - Half-lives of Mitochondria and Mitochondrial Subfractions of Rat Liver Based on [14C]-Bicarbonate Incorporation. **J. Biol. Chem.** 256, 8652-8657.

51. Pedersen, P.L., Hullihen, J., and Wehrle, J.P. (1981) Proton Adenosine Triphosphatase Complex of Rat Liver - The Effect of Trypsin on the F_1 and F_0 Moieties of the Enzyme. **J. Biol. Chem.** 256, 1362-1369.

52. Schwerzmann, K., and Pedersen, P.L. (1981) Proton-Adenosine Triphosphatase Complex of Rat Liver Mitochondria: Effect of Energy State on Its Interaction with the Adenosine Triphosphatase Inhibitory Peptide. **Biochemistry** 20, 6305-6311.

53. Wehrle, J.P., and Pedersen, P.L. (1981) Phosphate Transport in Rat Liver Mitochondria - Location of Sulfhydryl Groups Essential for Transport Activities. **J. Bioenerg. Biomemb.** 13, 285-294.

54. Cintron, N.M., Hullihen, J., Schwerzmann, K., and Pedersen, P.L. (1982) Proton-Adenosine Triphosphatase Complex of Rat Liver Mitochondria: Effect of Its Inhibitory Peptide on Adenosine 5'-Triphosphate Hydrolytic and Functional Activities of the Enzyme. **Biochemistry 21,** 1878-1885.

55. Geller Lipsky, N., and Pedersen, P.L. (1982) Perturbation by Clofibrate of Mitochondrial Levels in Animal Cells - Implications for a Model of Mitochondrial Genesis. **J. Biol. Chem.** 257, 1473-1481.

56. Wehrle, J.P., and Pedersen, P.L. (1982) Characteristics of Phosphate Uptake by Ehrlich Ascites Tumor Cells. **J. Biol. Chem.** 257, 9698-9703.

57. Schwerzmann, K., Hullihen, J., and Pedersen, P.L. (1982) Proton Adenosine Triphosphatase Complex of Rat Liver Mitochondria - Interaction with the ATPase Inhibitor Peptide Covalently Labelled with N-Hydroxysuccinimidyl-p-Azidobenzoate. **J. Biol. Chem.** 257, 9555-9560.

58. Amzel, L.M., McKinney, M., Narayanan, P., and Pedersen, P.L. (1982) Structure of the Mitochondrial F_1 ATPase to 9Å Resolution. **Proc. Natl. Acad. Sci. (U.S.A)**. 79, 5852-5856.

59. Kaplan, R.S., and Pedersen, P.L. (1983) Characterization of Phosphate Efflux Pathways in Rat Liver Mitochondria. **Biochem. J.** 212, 279-288.

60. Wehrle, J.P., and Pedersen, P.L. (1983) Isolation and Reconstitution of an N-Ethylmaleimide-sensitive Phosphate Transport Protein from Rat Liver Mitochondria. **Arch. Biochem. Biophys.** 223, 477-483.

61. Parry, D.M., and Pedersen, P.L. (1983) Intracellular Localization and Properties of Particulate Hexokinase in the Novikoff Ascites Tumor - Evidence for an Outer Mitochondrial Membrane Location. **J. Biol. Chem.** 258, 10904-10912.

62. McEnery, M., Buhle, Jr., E.L., Aebi, U., and Pedersen, P.L. (1984) Proton ATPase of Rat Liver Mitochondria. Preparation and Visualization of a Functional Complex Using the Novel Zwitterionic Detergent 3-[(3-cholamidopropyl) dimethylammonio]-1-propanesulfonate. **J. Biol. Chem.** 259, 4642-4651.

63. Williams, N., Hullihen, J.M., and Pedersen, P.L. (1984) The Proton Adenosine Triphosphatase Complex of Rat Liver Mitochondria. Temperature-Dependent Dissociation-Reassociation of the F_1-ATPase Subunits. **Biochemistr**y 23, 780-785.

64. Parry, D.M., and Pedersen, P.L. (1984) Intracellular Localization of Rat Kidney Hexokinase - Evidence for an Association with Low Density Mitochondria. **J. Biol. Chem.** 259, 8917-8923.

65. Williams, N., Amzel, L.M., and Pedersen, P.L. (1984) Proton ATPase of Rat Liver Mitochondria: A Rapid Procedure for Purification of a Stable, Reconstitutively Active F_1 Preparation Using a Modified Chloroform Method. **Anal. Biochem.** 140, 581-588.

66. Nakashima, R.A., Paggi, M.G., and Pedersen, P.L. (1984) The Relative Contributions of Glycolysis and Oxidative Phosphorylation to ATP Production in the AS-30D Hepatoma Cell Line. **Cancer Res.** 44, 5702-5706.

67. Pedersen, P.L., and Hullihen, J. (1984) Inhibitor Peptide of Mitochondrial Proton Adenosine Triphosphatase. Neutralization of Its Inhibitory Action by Calmodulin. **J. Biol. Chem.** 259, 15148-15153.

68. McEnery, M.W., and Pedersen, P.L. (1986) Purification of the H^+-ATPase Complex from Rat Liver Mitochondria Using the Zwitterionic Detergent CHAPS. **Methods in Enz.** 126, 470-477.

69. Schwerzmann, K., and Pedersen, P.L. (1986) Synthesis and Use of an Azido-Labeled Form of the ATPase Inhibitor Peptide of Rat Liver Mitochondria. **Methods in Enz.** 126, 660-666.

70. Williams, N., and Pedersen, P.L. (1986) Purification of α and β Subunits and Subunit Pairs from Rat Liver Mitochondrial F1-ATPase. **Methods in Enz.** 126, 484-489.

71. Williams, N., and Pedersen, P.L. (1986) Rapid Purification of F_1-ATPase from Rat Liver Mitochondria Using a Modified Chloroform Extraction Procedure Coupled to HPLC Chromatography. **Methods in Enz.** 126, 477-484.

72. Houstek, J., and Pedersen, P.L. (1985) Adenine Nucleotide and Phosphate Transport Systems of Mitochondria: Relative Localization of Sulfhydryl Groups Based on the Use of the Novel Fluorescent Probe Eosin-5-Maleimide. **J. Biol. Chem. 260,** 6288-6295.

73. Anholt, R.H., Pedersen, P.L., DeSoeuza, E.B., and Snyder, S.H. (1986) The Peripheral-Type Benzodiazepine Receptor - Localization to the Mitochondrial Outer Membrane. **J. Biol. Chem.** 261, 576-583.

74. Kaplan, R.S., and Pedersen, P.L. (1985) Isolation and Reconstitution of the n-Butylmalonate-sensitive Dicarboxylate Transporter from Rat Liver Mitochondria. **J. Biol. Chem.** 260, 10293-10298.

75. Kaplan, R.S., and Pedersen, P.L. (1985) Determination of Microgram Quantities of Protein in the Presence of Milligram Levels of Lipid with Amido Black 10B. **Anal. Biochem.** 150, 97-104.

76. Hoffman-McEnery, M., and Pedersen, P.L. (1986) Diethylstilbestrol: A Novel F0-Directed Probe of the Mitochondrial Proton ATPase. **J. Biol. Chem.** 261, 1745-1752.

77. Nakashima, R.A., Mangan, P.S., Colombini, M., and Pedersen, P.L. (1986) Hexokinase Receptor Complex in Hepatoma Mitochondria: Evidence from N, N'-Dicyclohexylcarbodiimide-Labeling Studies for the Involvement of the Pore-Forming Protein "VDAC". **Biochemistry** 25, 1015-1021.

78. Kaplan, R.S., Pratt, R.D., and Pedersen, P.L. (1986) Purification and Characterization of the Reconstitutively Active Phosphate Transporter from Rat Liver Mitochondria. **J. Biol. Chem.** 61, 12767-12773.

79. Anholt, R.R., Aebi, U., Pedersen, P.L., and Snyder, S. (1986) Solubilization and Reassembly of the Mitochondrial Benzodiazepine Receptor. **Biochemistry** 25, 2120-2125.

80. Baker, J.K., Hullihen, J.M., and Pedersen, P.L. (1986) Selective Toxicity of the Antimalarial Primaquine - Evidence for Both Uncoupling and Inhibitory Effects of a Metabolite on the Energetics of Mitochondria and Its ATP Synthase Complex. **Pharm. Res.** 3, 290-293.

81. Williams, N., Hullihen, J.M., and Pedersen, P.L. (1987) Ligand Binding Studies of the F1 Moiety of Rat Liver ATP Synthase - Implications About Its Structure, Active Sites, and Mechanism of Action. **Biochemistry** 26, 162-169.

82. Petrone, G., Garboczi, D.N., and Pedersen, P.L. (1987) Mitochondrial ATP Synthase Complex - Interaction of Its F_1-ATPase Moiety With the Heavy Atom Iodine. **Biochemistry** 26, 4016-4021.

83. Pedersen, P.L., Williams, N., and Hullihen, J. (1987) Mitochondrial ATP Synthase: Dramatic Mg^{++} - Induced Alterations In the Structure and Function of the F1-ATPase Moiety. **Biochemistry** 26, 8631-8637.

84. Garboczi, D.N., Shenbagamurthi, P., Hullihen, J., and Pedersen, P.L. (1987) Mitochondrial ATP Synthase: Interaction of A Synthetic Fifty Amino Acid, Beta Subunit Peptide With ATP. **J. Biol. Chem.** 263, 812-816.

85. Garboczi, D., Gerring, S., Fox, A., and Pedersen, P.L. (1988) Beta Subunit of Rat Liver Mitochondrial ATP Synthase-cDNA Cloning, Amino Acid Sequence, Expression in *E. coli* and Structural Relationship to Adenylate Kinase. **Biochemistry** 27, 553-560.

86. Nakashima, R.A., Paggi, M.G., Scott, L.J., and Pedersen, P.L. (1988) Purification and Characterization of a Bindable Form of Mitochondrial Bound Hexokinase From the Highly Glycolytic AS-30D Rat Hepatoma Cell Line. **Cancer Res.** 48, 913-919.

87. Garboczi, D.N., Hullihen, J.H., and Pedersen, P.L. (1988) Mitochondrial ATP Synthase: Overexpression in *E. coli* of A Rat Liver β Subunit Peptide and Its Interaction With Adenine Nucleotides. **J. Biol. Chem**. 263, 15694-15698.

88. Arora, K., and Pedersen, P.L. (1988) Functional Significance of Mitochondrial-Bound Hexokinase In Tumor Cell Metabolism: Evidence for Preferential Phosphorylation of Glucose by Intramitochondrially Generated ATP. **J. Biol. Chem.** 263, 17422-17428.

89. Barnard, J.P., and Pedersen, P.L. (1988) Purification in A Single Step and Kinetic Characterization of the Pyruvate Kinase of *Trypanosoma Brucei*. **Mol. and Biochem. Parasitology** 31, 141-148.

90. Pratt, R.D., and Pedersen, P.L. (1989) Inhibition of Na+ Dependent Phosphate Transport by Group Specific Covalent Reagents in Rat Kidney Brush Border Membrane Vesicles. **Arch. Biochem. Biophys.** 268, 9-19.

91. Hanley-Trawick, S., Carpen, M.E., Dunaway-Mariano, D., Pedersen, P.L., and Hullihen, J. (1989) Investigation of the Substrate Structure and Metal Cofactor Requirements of the Rat Liver Mitochondrial ATP Synthase/ATPase Complex. **Arch. Biochem. Biophys.** 268, 116-123.

92. McEnery, M.W., Hullihen, J., and Pedersen, P.L. (1989) F0 "Proton Channel" of Rat Liver Mitochondria: Rapid Purification of a Functional Complex and a Study of its Interaction with the Unique Probe Diethylstilbestrol. **J. Biol. Chem.** 264, 12029-12036.

93. Kaplan, R.S., Pratt, R.D., and Pedersen, P.L. (1989) Purification and Reconstitution of the Phosphate Transporter from Rat Liver Mitochondria. **Methods in Enz.** 173, 732-745.

94. Kaplan, R.S., and Pedersen, P.L. (1989) Sensitive Protein Assay in the Presence of High Lipid. **Methods in Enz.** 172, 393-399.

95. Ferreira, G., Pratt, R., and Pedersen, P.L. (1989) Energy Linked Anion Transport: Cloning, Sequencing, and Characterization of a Full Length cDNA Encoding the Rat Liver Mitochondrial Proton/Phosphate Symporter. **J. Biol. Chem.** 264, 15628-15633.

96. Parry, D.M., and Pedersen, P.L. (1990) Glucose Catabolism in Brain: Intracellular Location of Hexokinase. **J. Biol. Chem.** 265, 1059-1066.

97. Arora, K.K., Shenbagamurthi, P., Fanciulli, M., and Pedersen, P.L. (1990) Glucose Phosphorylation: Interaction of a Fifty Amino Acid Peptide of Yeast Hexokinase with Trinitrophenyl ATP. **J. Biol. Chem.** 265, 5324-5328.

98. Lee, J., Garboczi, D.N., Thomas, P.J., and Pedersen, P.L. (1990) Mitochondrial ATP Synthase: cDNA Cloning, Amino Acid Sequence, Overexpression, and Properties of the Rat Liver α Subunit. **J. Biol. Chem.** 265, 4664-4669.

99. Arora, K.K., Fanciulli, M., and Pedersen, P.L. (1990) Glucose Phosphorylation in Tumor Cells: Cloning, Sequencing, and Overexpression in Active Form of a Full-Length cDNA Encoding a Mitochondrial Bindable Form of Hexokinase. **J. Biol. Chem**. 265, 6481-6488.

100. Garboczi, D.N., Thomas, P., Hullihen, J., and Pedersen, P.L. (1990) ATP Synthase: Effects of Mutations in a Rat Liver β-Subunit Peptide on its Interaction with Nucleotides. **J. Biol. Chem.** 265, 14632-14637.

101. Ferreira, G.C., Pratt, R.D., and Pedersen, P.L. (1990) Mitochondrial Proton/Phosphate Transporter: An Antibody Directed Against the C-Terminus and Proteolytic Cleavage Experiments Provide New Insights about its Membrane Topology. **J. Biol. Chem.** 265, 21202-21206.

102. Pratt, R.D., Ferreira, G.C., and Pedersen, P.L. (1990) Mitochondrial Phosphate Transport: Import of the H^+/P_i Symporter and Role of the Presequence. **J. Biol. Chem. 266**, 1276-1280.

103. Thomas, P.J., Shenbagamurthi, P., Ysern, X., and Pedersen, P.L. (1991) The Cystic Fibrosis Transmembrane Conductance Regulator: Nucleotide Binding to a Synthetic Peptide. **Science** 251, 555-557.

104. Arora, K., Filburn, C.R., and Pedersen, P.L. (1991) Glucose Phosphorylation: Site Directed Mutations which Impair the Catalytic Function of Hexokinase. **J. Biol. Chem. 266,** 5359-5362.

105. Bianchet, M., Ysern, X., Hullihen, J., Pedersen, P.L., and Amzel, L.M. (1991) Mitochondrial ATP synthase: Quaternary structure of the F1 Moiety at 3.6 Å determined by x-ray diffraction analysis. **J. Biol. Chem.** 266, 21197-21201.

106. Ferreira, G.C., and Pedersen, P.L. (1992) Overexpression of Eukaryotic Membrane Proteins in Bacteria – Novel Insights Obtained with the Liver Mitochondrial Proton/Phosphate Symporter. **J. Biol. Chem.**, 267, 5460-5466.

107. Thomas, P.J., Shenbagamurthi, P., Hullihen, J. and Pedersen, P.L. (1992) The Cystic Fibrosis Transmembrane Conductance Regulator-Effects of the Most Common Cystic Fibrosis-Causing Mutation on the Secondary Structure and Stability of A Synthetic Peptide. **J. Biol. Chem.,** 267, 5727-5730.

108. Chuang, W-J., Abeygunawardana, C., Pedersen, P.L., and Mildvan, A.S. (1992) Two-Dimensional NMR, Circular Dichroism, and Fluorescence Studies of PP-50, a Synthetic ATP-Binding Peptide From the β-Subunit of Mitochondrial ATP Synthase. **Biochem.** 31, 7915-7921.

109. Thomas, P.J., Garboczi, D.N. and Pedersen, P.L. (1992) Mutational Analysis of the Consensus Nucleotide Binding Sequences in the Rat Liver Mitochondrial ATP Synthase β-subunit. **J. Biol. Chem.** 267, 20331-20338.

110. Thomas, P.J., Ko, Y.H., and Pedersen, P.L. (1992) Altered Protein Folding May be the Molecular Basis of Most Cases of Cystic Fibrosis, **FEBS Lett.,**312, 7-9.

111. Barnard, J., and Pedersen, P.L. (1993) Glucose Catabolism in African Trypanosomes: Evidence that the Terminal Step is Catalyzed by a Pyruvate Transporter Capable of Facilitating Uptake of Toxic Analogs. **J. Biol. Chem.,** 268, 3654-3661.

112. Lebowitz, M.S. and Pedersen, P.L. (1993) Regulation of the Mitochondrial ATP Synthase/ATPase Complex: cDNA Cloning, Sequence, Overexpression and Secondary Structural Characterization of a Functional Protein Inhibitor, **Arch. Biochem. Biophys. 301, 64-70.**

113. Arora, K., Filburn, C.R., and Pedersen, P.L. (1993) Structure/Function Relationships in Hexokinase-Site Directed Mutational Analysis Implicates Different Functions for the N- and C- Terminal Halves of the Enzyme. **J. Biol. Chem.** 268, 18259-18266.

114. Arora, K. and Pedersen, P.L. (1993) Glucose Utilization by Tumor Cells: The Enzyme Hexokinase Autophosphorylates Both It's N- and C-Termninal Halves. **Arch. Biochem. Biophys.** 304, 515-518.

115. Ko, Y.H., Thomas, P.J., Delannoy, M.R., and Pedersen, P.L. (1993) The Cystic Fibrosis Transmembrane Conductance Regulator. Overexpression, Purification, and Characterization of Wild Type and ΔF508 Mutant Forms of the First Nucleotide Binding Fold in Fusion with the Maltose Binding Protein. **J. Biol. Chem.** 268, 24330-24338.

116. Jabs, M., Thomas, P.J., Ferreira, G.C., and Pedersen, P.L. (1994) Chromosomal Location of Genes Required for the Terminal Steps of Oxidative Metabolism: The α and γ Subunits of the ATP Synthase and the Phosphate Carrier. **Human Genetics** 93, 600-602.

117. Ko, Y.H., Thomas, P.J., and Pedersen, P.L. (1994) The Cystic Fibrosis Transmembrane Conductance Regulator: Nucleotide Binding to a Synthetic Peptide Segment From the Second Nucleotide Binding Fold. **J. Biol. Chem.**, 269, 14584-14688.

118. Barnard, J.P. and Pedersen, P.L. (1994) Alteration of Pyruvate Metabolism in African Trypanosomes During Differentiation From Bloodstream Into Insect Forms. **Arch. Biochem. Biophys.** 313, 77-82.

119. Pedersen, P.L. and Hullihen, J., Bianchet, M., Amzel, L.M., and Lebowitz, M.S. (1995) Rat Liver ATP Synthase: Relationship of the Unique Substructure of the F_1 Moiety to Its Nucleotide Binding Properties Enzymatic States, and Crystalline Form. **J. Biol. Chem.**, 270, 1775-1784.

120. Arora, K. K. and Pedersen P.L. (1995) Glucokinase of E. coli: Induction in Response to the Stress of Overexpressing Foreign Proteins **Arch. Biochem. Biophysics** 319, 574-578.

121. Mathupala, Rempel, A., and Pedersen, P.L. (1995) Glucose Catabolism in Cancer Cells: Isolation, Sequence, and Activity of the Promoter for Type II Hexokinase **J. Biol. Chem** 270, 16918-16925.

122. Chuang, W.-J., Abeygunawardana, C., Gittis, A.G., Pedersen P.L., and Mildvan, A.S. (1995) Solution Structure and Function in Trifluoroethanol of PP-50, an ATP-Binding Peptide From F_1-ATPase. **Arch. Biochem. Biophys.** 319, 110-122.

123. Ko, Y.H. and Pedersen, P.L. (1995) The First Nucleotide Binding Fold of the Cystic Fibrosis Transmembrane Conductance Regulator Can Function as an Active ATPase. **J. Biol. Chem.** 270, 22093-22096.

124. Lebowitz, M.S. and Pedersen, P.L. (1996) Protein Inhibitor of Mitochondrial ATP Synthase: Relationship of Inhibitor Structure to pH Dependent Regulation. **Arch. Biochem. Biophys.**, 230, 342-354.

125. Rempel, A., Mathupala, S.P., and Pedersen, P.L. (1996) Glucose Catabolism in Cancer Cells: Regulation of the Type II Hexokinase Promoter by Glucose and Cyclic AMP. **FEBS Letts.,** 385, 223-237.

126. Rempel, A., Mathupala, S.P., Griffin, C.G., Hawkins, A.L., and Pedersen, P.L. (1996) Glucose Catabolism in Cancer Cells: Amplification of the Gene Encoding Type II Hexokinase. **Cancer Research**, 56, 2468-2471.

127. Reynafarje, B.D. and Pedersen, P.L., (1996) ATP Synthase: Conditions Under Which All Catalytic Sites of the F1 Moiety are Kinetically Equivalent in Hydrolyzing ATP. **J. Biol. Chem.**, 271, 32546-32550.

128. Ko, Y.H., Delannoy, M., and Pedersen, P.L. (1997) Cystic Fibrosis Transmembrane Conductance Regulator: The First Nucleotide Binding Fold when Expressed in E. coli Targets the Membrane with Retention of Its ATP Binding Function. **Biochemistry**, 36, 5053-5064.

129. Ko, Y.H., Delannoy, M., and Pedersen, P.L. (1997) Cystic Fibrosis, Lung Infections, and A Human Tracheal Antimicrobial Peptide (hTAP). **FEBS Letts.,** 405, 200-208.

130. Ko, Y.H., Bianchet, M., Amzel, L.M., and Pedersen, P.L. (1997) Novel Insights into the Chemical Mechanism of ATP Synthase: Evidence that in the Transition State the γ-Phosphate of ATP is near the Conserved Alanine within the P-loop of the β-subunit. **J. Biol. Chem.** 272, 18875-18881.

131. Mathupala, S., Heese, C., and Pedersen, P.L. (1997) Glucose Catabolism in Cancer Cells: The Type II Hexokinase Contains Functionally Active Response Elements for the Tumor Suppressor p53. **J. Biol. Chem.** 272, 22776-22780.

132. Bianchet, Mario, A., Ko, Y.H., Amzel, L.M. and Pedersen, P.L. (1997) Modeling of Nucleotide Binding Domains of ABC Transporter Proteins Based on a F_1-ATPase/recA Topology: Structural Model of the Nucleotide Binding Domains of the Cystic Fibrosis Transmembrane Conductance Regulator (CFTR). **J. Bioenerg. Biomemb.** 29, 503-524.

133. Ko, Y.H. and Pedersen, P.L. (1998) Overexpression, Purification and Function. Of the First Nucleotide Binding Fold of CFTR. **Methods in Enz.** 292, 675-686.

134. Pan, W., Ko, Y.H., and Pedersen, P.L. (1998) The Delta Subunit of Rat Liver Mitochondrial ATP Synthase: Molecular Description and Novel Insights into the Nature of Its Association with the F1-Moiety. **Biochemistry**, 37, 6911-6923.

135. Bianchet, M., Amzel, L.M., Hullihen, J., and Pedersen, P.L. (1998) Structure of Rat Liver F_1-ATPase: Configuration of a Critical Intermediate in ATP Synthase/Hydrolysis. **Proc. Natl. Acad. Sci. (U.S.A.)** 95, 11065-11070.

136. Golden, T.R. and Pedersen, P.L. (1998) The Oligomycin Sensitivity Conferring Protein of Rat Liver Mitochondrial ATP Synthase: Arginine 94 is Important for Binding OSCP to F_1, **Biochemistry** 39, 13871-13881.

137. Ko, Y.H., Hong, S. and Pedersen, P.L. (1999) Chemical Mechanisms of ATP Synthase: Magnesium Plays a Pivotal Role in Formation of the Transition state where ATP is Synthesized from ADP and Inorganic Phosphate. **J. Biol. Chem.** 274, 28853-28856.

138. Massiah, M.A., Ko, Y.H., Pedersen, P.L. and Mildvan, A.S. (1999) Cystic Fibrosis Transmembrane Conductance Regulator: Solution Structures of Peptides Based on the phe 508 Region, the Most Common Site of Disease-Causing ΔF508 Mutation. **Biochemistry** 38, 7453-7461.

139. Lu, N.T. and Pedersen, P.L. (2000) Cystic Fibrosis Transmembrane Conductase Regulator: The Purified NBF1+R Protein Interacts with the Purified NBF2 Domain to Form a Stable NBF1+R/NBF2 Complex while Inducing a Conformational Change Transmitted to the C-Terminal Region. **Arch. Biochem. Biophys.** 375, 7-20.

140. Ko, Y.H., Hullihen, J., Hong, S. and Pedersen, P.L. (2000) Mitochondrial F_0F_1 ATP Synthase. Subunit Regions on the F_1 Motor Shielded by F_0, Functional Significance and Evidence for an Involvement of the Unique F_0 Subunit F_6. **J. Biol. Chem.** 20, 275, 32931-32939.

141. Hong, S., Ko, Y.H., and Pedersen, P.L. (2001) Rotary Catalysis within ATP Synthases: A Bioinformatic Approach Provides Novel Insights into How Large pH-Dependent Movements of the C-Terminal Helix of Subunit c May Be Accommodated. **Arch. Biochem. Biophys.** 394, 275-279.

142. Ko, Y. H., Pedersen, P.L., and Geschwind, J.F. (2001) Glucose Catabolism in the Rabbit VX2 Tumor Model for Liver Cancer: Characterization and Targeting Hexokinase. **Cancer Lett.** 173, 83-91.

143. Blum, D.J., Ko, Y. H., Rini, D.A., and Pedersen, P.L. (2001) ATP Synthase Motor Components: Proposal and Animation of Two Dynamic Models for Stator Function. **Biochem. Biophys. Res. Commun.** 287, 801-807.

144. Mathupala, S. P., Rempel, A., and Pedersen, P.L. (2001) Glucose Catabolism in Cancer Cells: Identification and Characterization of a Marked Activation Response of the Type II hexokinase Gene to Hypoxic Conditions. **J. Biol. Chem.** 276, 43407-43412.

145. Ko, Y.H., Pan, W., Inoue, C., and Pedersen, P.L. (2002) Signal Transduction to Mitochondrial ATP Synthase: Evidence that PDGF-Dependent Phosphorylation of the δ-Subunit Occurs in Several Cell Lines, Involves Tyrosine, and Is Modulated by Lysophosphatidic Acid. **Mitochondrion**, 1, 339-348.

146. Geschwind, J.F., Ko, Y.H., Torbenson, M.S., Magee, C., and Pedersen, P.L. (2002) Novel Therapy for Liver Cancer: Direct Intraarterial Injection of a Potent Inhibitor of ATP Production, **Cancer Res.**, 62, 3909-3913.

147. Hong, S., and Pedersen, P.L. (2003) ATP Synthase of Yeast: Structural Insight into the Different Inhibitory Potencies of Two Regulatory Peptides and Identification of a New Potential Regulator. **Arch. Biochem. Biopys**., 405, 38-43.

148. Hong, S. and Pedersen, P.L. (2003) Subunit E of Mitochondrial ATP Synthase: A Bioinformatic Analyses Reveals a Phosphopeptide Binding Motif Supporting a Multifunctional Regulatory Role and Identifies a Related Human Brain Protein with the Same Motif. **Proteins: Structure, Function, Genetics,** 51, 155-161.

149. Annereau, J.P., Ko, Y.H., and Pedersen, P.L. (2003) Cystic Fibrosis Transmembrane Conductance Regulator: The NBF1+R Segment Acting Alone Catalyzes a $Co^{2+}/Mn^{2+}/Mg^{2+}$ ATPase Activity Inhibited Both by Cd^{+2} and the Transition State Analog Orthovanadate. **Biochem. J.**, 371, 451-462.

150. Ko, Y.H., Delannoy, M., Hullihen, J., Chiu, W., and Pedersen, P.L. (2003) Mitochondrial ATP Synthasome: Cristae Enriched Membranes and A Multiwell Detergent Screening Assay Yield Dispersed Single Complexes Containing the ATP Synthase and Carriers for P_i and ADP/ATP. **J. Biol. Chem**. 278, 12305-12309.

151. Goel, A., Lee, M G., Mathupala, S.P., and Pedersen, P.L. (2003) Glucose Metabolism in Cancer: Evidence that Demethylation Events Play a Role in Activating Type II Hexokinase Gene Expression. **J. Biol. Chem.** 278, 15333-15340.

152. Lee, M.G., and Pedersen, P.L. (2003) Glucose Metabolism in Cancer: Importance of Transcription Factor-DNA Interactions within a Short Segment of the Proximal Region of Type II Hexokinase Promoter. **J. Biol. Chem.** 278, 41047-41058.

153. Chen, C., Ko, Y.H., Delannoy, M., Ludtke, S.J., Chiu, W., and Pedersen, P.L. (2004) Mitochondrial ATP Synthasome: Three Dimensional Structure by Electron Microscopy of the ATP Synthase in Complex Formation with Carriers for Pi and ADP/ATP. **J. Biol. Chem.** 279, 31761-31768.

154. Hong, S.J. and Pedersen, P.L. (2004) A Bioinformatic Approach Reveals New Insights About the Roles of Supernumerary Subunits g and A6L **J. Bioenerg. and Biomemb.** 36, 515-524.

155. Ko, Y.H., Smith, B.L., Wang, Y., Pomper, M.G., Rini, D.A., Torbenson, M.S., Hullihen, J., and Peter L. Pedersen (2004) Advanced Cancers: Eradication in All Cases Treated using 3-Bromopyruvate Therapy to Deplete ATP. **Biochem. Biophys. Res. Commun. 324**, 269-275.

156. Arrell, D. K., Elliott, S.T., Guo, Y., Kane, L.A., Ko, Y. H., Pedersen, P. L., Robinson, J., Murata, M., Murphy, A. M., Marban, E., and Van Eyk, J. F. (2006) Proteomic Analysis of Pharmacological Preconditioning: Novel Protein Targets Converge to Mitochondrial Metabolism Pathways. **Circ. Res. 29,** 706-714.

157. Chen, C., Saxena, A.J., Simcoke, W. N., Garboczi, D. N., Pedersen, P.L., and Ko, Y.H. (2006) Mitochondrial ATP Synthase: Crystal Structure of the Catalytic Unit in a Vanadate-Induced Transition-Like State and Implications for Mechanism, **J. Biol. Chem., 281**, 13777-13783.

158. Chen, C., Ko, Y.H., Pedersen, P.L. et al. (2010) Mitochondrial ATP Synthasome: Evidence for a Well Defined Stalk, The Capacity to Form 2-Dimensional Crystals, and the Presence of VDAC, Voltage Dependent Anion Channel. **To be submitted.**

159. Tao, J., Ko, Y.H., and Pedersen, P.L. (2010) Release of MBD2 and DNMT1 from the Hexokinase 2 Promoter Activates Gene Expression in Cancer Cells. **To be submitted.**

Year 2010 [5 Additional Papers, In Preparation]

B. Review Articles, Book Chapters & Short Reports (82)

1. Pedersen, P.L., and Schnaitman, C.A. (1971) The Oligomycin-sensitive ADP-ATP Exchange Catalyzed by a Mitoplast Fraction of Rat-Liver Mitochondria. **In: Energy Transduction in Respiration and Photosynthesis. (Quagliariello, E., Papa, S., and Rossi, C.S., eds.), Adriatic Editrice, Bari, Italy,** 831-838.

2. Pedersen, P.L. (1972) Enzymology, Ultrastructure, and Energetics of Mitochondria from Three Morris Hepatomas of Widely Different Growth Rate. In: Isozymes and Enzyme Regulation in Cancer. (Weinhouse, S., and Ohno, T., eds.), **GANN Monograph on Cancer Research** 13, 251-265.

3. Catterall, W.A., and Pedersen, P.L. (1974) Structural and Catalytic Properties of Mitochondrial Adenosine Triphosphatase. In: **Membrane ATPases and Transport Processes. (Bronk, R.J., ed.), Biochem. Soc. Spec. Publ**. 4, 63-88, London.

4. Pedersen, P.L., LeVine III, H., and Cintron, N. (1974) Activation and Inhibition of Mitochondrial ATPase of Rat Liver Mitochondria. In: **Membrane Proteins in Transport and Phosphorylation. (Azzone, G.F., Klingenberg, M.E., Quagliariello, E., and Siliprandi, N., eds.), American Elsevier Publ. Co., New York**, 43-54.

5. Coty, W.A., and Pedersen, P.L. (1975) Phosphate Transport in Rat Liver Mitochondria--Kinetics, Inhibitor Sensitivity, Energy Requirements, and Labelled Components. **Mol. & Cell. Biochem.** 9, 109-124.

6. Pedersen, P.L. (1975) Mitochondrial Adenosine Triphosphatase. **Bioenergetics 6**, 243-275.

7. Bustamante, E., and Pedersen, P.L. (1978) Hexokinase - The Direct Link Between Mitochondrial and Glycolytic Reactions in Rapidly Growing Cancer Cells. **In: Advances in Exp. Med. and Biol. Morris Hepatomas - Mechanism of Regulation. (Morris, H.P., and Criss, W.E., eds.), Plenum Publishing Corp.** 92, 363-380.

8. Pedersen, P.L. (1978) Tumor Mitochondria and the Bioenergetics of Cancer Cells. **Progress in Experimental Tumor Research,** 22, 190-274.

9. Pedersen, P.L., Amzel, L.M., Soper, J.W., Cintron, N., and Hullihen, J. (1978) **Structure, Function, and Regulation of the Mitochondrial Adenosine Triphosphatase Complex of Rat Liver - A Progress Report. In: Energy Conservation in Biological Membranes. (Schafer, G., and Klingenberg, M., eds.)**, 29 Colloquium - Mosbach, Germany, Springer-Verlag, Berlin, Heidelberg, New York, 159-194.

10. Pedersen, P.L., Greenawalt, J.W., Reynafarje, B., Hullihen, J., Decker, G.L., Soper, J.W., and Bustamante, E. (1978) Preparation and Characterization of Mitochondria and Submitochondrial Particles of Rat Liver and Liver-derived Tissues. **Methods in Cell Biol.** 20, 411-481.

11. Amzel, L.M., Narayanan, P., Pedersen, P.L., and Hullihen, J. (1980) **Structure of F_1-ATPases. First Europ. Bioenergs. Conf., Urbino, Italy, Short Reports, Patron Editore, Bologna**, #SII, 117.

12. Pedersen, P.L., Amzel, L.M., Cintron, N., Soper, J.W., Hullihen, J., and Wehrle, J. (1980) The ATP Synthesizing System of Liver Mitochondria. **Adv. Exp. Biol. Med.** 132, 317-344.

13. Pedersen, P.L., Hullihen, J., Wehrle, J., Schwerzmann, K., and Cintron, N. (1980) H+-ATPase of Rat Liver Mitochondria - Progress in Understanding How It Functions and How It May Be Regulated. **First Europ. Bioenergs. Conf.**, Urbino, Italy, Short Reports, Patron Editore, Bologna, #CII, 153-155.

14. Pedersen, P.L., and Bustamante, E. (1980) Hexokinase and the Abnormal Metabolism of Hepatoma Cells. In: Heart Creatine Kinase - **The Integration of Isozymes for Energy Distribution. (Jacobus, W.E. and Ingwall, J.S., eds.), Williams and Wilkins, Baltimore & London**, 147-154.

15. Pedersen, P.L., Schwerzmann, K., and Cintron, N.M. (1981) Regulation of the Synthesis and Hydrolysis of ATP in Biological Systems: Role of Peptide Inhibitors of H^+-ATPases. In: **Current Topics in Bioenergetics. (Sanadi, D.R., ed.), Academic Press** 11, 149-199.

16. Wehrle, J.P., and Pedersen, P.L. (1981) Isolation and Characterization of Mitochondria from Malignant Cells. In: **Methodological Surveys in Biochemistry. (Reid, E., Cook, G.M.W. and Morre', D.J., eds.), Ellis Horwood, Ltd., Chichester, England** 11, 215-225.

17. Amzel, L.M., Narayanan, P., Pedersen, P.L., and Sygusch, J. (1982) The Three-dimensional Structure of F_1-ATPases. **Annals N.Y. Acad. Sci.** 402, 21-27.

18. Pedersen, P.L. (1982) H^+-ATPases in Biological Systems: An Overview of Their Function, Structure, Mechanism, and Regulatory Properties. **Annals N.Y. Acad. Sci.** 402, 1-20.

19. Pedersen, P.L., Hullihen, J., and Wehrle, J.P. (1982) Mechanism of Proton ATPases - Apparent Separation of Coupling and Catalytic Events. **Second Europ. Bioenergs. Conf., Lyon, France, EBEC Reports, L.B.T.M.-C.N.R.S. Edition, Villeurbanne, France, #OPI**, 25-26.

20. Pedersen, P.L., and Wehrle, J.P. (1982) Phosphate Transport Processes of Animal Cells. In: **Membranes and Transport. (Martonosi, A.N., ed.), Plenum Press, N.Y. & London** 1, 645-663.

21. Amzel, L.M., and Pedersen, P.L. (1983) Proton ATPases: Structure and Mechanism. **Ann. Rev. Biochem.** 52, 801-824.

22. Amzel, L.M., Narayanan, P., and Pedersen, P.L. (1984) Quaternary Structure of F_1-ATPases. In: **H^+-ATPase (ATP Synthase): Structure, Function, Biogenesis. The F_0F_1 Complex of Coupling Membranes. (Papa, S., Altendorf, K., Ernster, L., and Packer, L., eds.), Adriatica Editrice, Bari, Italy**, 125-134.

23. Kaplan, R.S., Williams, N., Hullihen, J., McEnery, M., Nakashima, R.A., Paggi, M.G., and Pedersen, P.L. (1984) Anion Transport, ATP Synthesis, and ATP Export in Liver Mitochondria - Recent Progress on Molecular Components Catalyzing These Processes. In: **3rd EBEC Meeting Short Reports. (Schafer, G., ed.), Hannover, Germany**, p. 345.

24. Houstek, J., and Pedersen, P.L. (1984) The Use of Eosine-5-Maleimide to Establish the Locations of SH Groups of Phosphate and Adenine Nucleotide Carriers of Mitochondria. In: **3rd EBEC Meeting Short Reports. (Schafer, G., ed.), Hannover, Germany**, p. 435.

25. Nakashima, R.A., and Pedersen, P.L. (1985) The Role of the Outer Mitochondrial Membrane in Tumor Glycolysis. In: **Cell Membranes and Cancer. (Galeotto, T., et al., ed.), Elsevier Science Publishers**, 183-192.

26. Pedersen, P.L., and Amzel, L.M. (1985) Structure of ATPases of the F_0F_1 Type: Chemical Asymmetry and Implications for Mechanism. In: **International Symposium on Achievements and Perspectives of Mitochondrial Research. (Quagliariello, E., et al., eds.), Elsevier Science Publishers B.V. (Biomedical Division)**, Vol. I: Bioenergetics, pp. 169-189.

27. Schwerzmann, K., and Pedersen, P.L. (1986) Regulation of the Mitochondrial ATP Synthase/ATPase Complex. **Arch. Biochem. Biophys.** 250, 1-18.

28. Pedersen, P.L., Williams, N., and Hullihen, J. (1986) Relationship of Ligand Binding Properties of ATP Synthase (F_1) of Rat Liver to the Enzyme's Structure and Mechanism. In: **4th EBEC Meeting Short Reports. Prague, Czechoslovakia**, p. 418.

29. Nakashima, R.A., and Pedersen, P.L. (1986) Binding of Hexokinase to Its Mitochondrial Receptor in Tumor Cells: Inhibition By N,N'-Dicyclohexylcarbodiimide (DCCD). In: **4th EBEC Meeting Short Reports. Prague, Czechoslovakia**, p. 405.

30. Kaplan, R.S., Pratt, R.D., and Pedersen, P.L. (1986) Rat Liver Mitochondrial Phosphate Carrier: Purification and Reconstitution. In: **4th EBEC Meeting Short Reports. Prague, Czechoslovakia**, p. 298.

31. Nakashima, R.A., Scott, L.J., and Pedersen, P.L. (1987) The Role of Mitochondrial Hexokinase Binding In the Abnormal Energy Metabolism of Tumor Cell Lines. **Annals N.Y. Acad. Sci.** 488, 438-450.

32. Pedersen, P.L., and Carafoli, E. (1987) Ion Motive ATPases. I. Ubiquity, Properties and Significance to Cell Function. **Trends in Biochem. Sci.** 12, 146-150.

33. Pedersen, P.L., and Carafoli, E. (1987) Ion Motive ATPases. II. Energy Coupling and Work Output. **Trends in Biochem. Sci.** 12, 186-189.

34. Pedersen, P.L., Hullihen, J., Ysern, X., and Amzel, L.M. (1986) Structure and Ligand Binding Domains of Rat Liver F_1-ATPase. In: **Microbial Energy Transduction: Genetics, Structure and Function of Membrane Proteins. (Youvan, D.C. and Daldal, F., eds.), Cold Springs Harbor Conf., N.Y., N.Y.**, p. 121-122.

35. Garboczi, D.N., Shenbagamurthi, P., Kirk, W., Hullihen, J., and Pedersen, P.L. (1988) Nucleotide Binding Domains Within Rat Liver F_1 Based on Studies of the β Subunit and Synthetic Peptides. In: **Fifth European Bioenergetics Conference Short Reports**, Vol. 5, p. 258.

36. Garboczi, D.N., Hullihen, J., and Pedersen, P.L. (1988) Overexpression, Processing, and Rapid Purification from *E. coli* of A "Functional", Rat Liver, F_1-β Subunit Fragment. In: **Fifth European Bioenergetics Conference Short Reports**, Vol. 5, p. 274.

37. Arora, K.K., and Pedersen, P.L. (1988) The High Levels of Hexokinase Bound to Tumor Mitochondria Have Preferred Access to Mitochondrially Generated ATP. In: **Fifth European Bioenergetics Conference Short Reports,** Vol. 5, p. 298.

38. Ysern, X., Amzel, L.M., and Pedersen, P.L. (1988) ATP Synthases-Structure of the F_1-Moiety and Its Relationship to Function and Mechanism. **J. Bioenerg. Biomemb.** 20, 423-450.

39. Wehrle, J., and Pedersen, P.L. (1989) Phosphate Transport Processes in Eukaryotic Cells. **J. Memb. Biol.** 111, 199-213.

40. Pedersen, P.L. (1990) ATP Synthesis by Oxidative Phosphorylation in Mitochondria. **Encyclopedia of Human Biology (Dulbecco, R., ed.), Academic Press, Inc.** Vol. 1, 457-565.

41. Nakashima, R.A., Paggi, M.G., Arora, K.K., and Pedersen, P.L. (1990) Integration of Mitochondrial Function With High Aerobic Glycolysis in Tumors: Role of Hexokinase Binding to the Outer Mitochondrial Membrane. In: **Integration of Mitochondrial Function. Plenum Publishing Company, N.Y., N.Y., (Lemasters, John J., Hackenbrock, Charles R., Thurman, Ronald G., and Westerhoff, Hans V., eds.)**, pp. 405-411.

42. Thomas, P.J., Bianchet, M., Garboczi, D.N., Hullihen, J., Amzel, L.M. and Pedersen, P.L. (1992) ATP Synthase: Structure-Function Relationships. **Biochim. Biophys. Acta.** 1101, 228-231.

43. Arora, K.K., Parry, D.M., and Pedersen, P.L. (1992) Hexokinase Receptors: Preferential Enzyme Binding in Normal Cells to Nonmitochondrial Sites and In Transformed Cells to Mitochondrial Sites. **J. Bioenerg. Biomemb.** 24, 47-53.

44. Thomas, P.J., Garboczi, D.N., and Pedersen, P.L. (1992) Mitochondrial F-Type ATPases: The Glycine-Rich Loop of the β-subunit is a Pyrophosphate Binding Domain. **Acta. Physiol. Scand.** 146, 23-29.

45. Pedersen, P.L., Thomas, P.J., Garboczi, D.N., Bianchet, M., and Amzel, L.M. (1992) F-Type ATPases: Are Nucleotide Domains in Adenylate Kinase Appropriate Models For Nucleotide Domains in ATP Synthase/ATPase Complexes? **Ann. N.Y. Acad. Sci.**, 671, 359-365.

46. Amzel, L.M., Bianchet, M.A., and Pedersen, P.L. (1992) Quaternary Structure of ATP Synthases. Symmetry and Asymmetry in the F_1-Moiety. **J. Bioenerg. Biomemb.** 24, 429-433.

47. Pedersen, P.L. (1993) Structure, Reaction Center, Mechanism, and Regulation of One of Nature's Most Unique Machines. **J. Biol. Chem.** 268, 9937-9940.

48. Pedersen, P.L. (1993) An Introduction to the Mitochondrial Anion Carrier Family. **J. Bioenerg. Biomemb.** 25, 431-434.

49. Ferreira, G.C. and Pedersen, P.L. (1993) Phosphate Transport in Mitochondria: Past Accomplishments, Present Problems, and Future Challenges. **J. Bioenerg.Biomemb.** 25, 483-492.

50. Amzel, L.M., Bianchet, M.A. and Pedersen, P.L. (1992) The Structure of F0F1 ATPases Determined by Direct and Indirect Methods. In: **Membrane Protein Structure and Experimental Approaches (White, S., Ed.), Oxford University Press**, pp. 164-177.

51. Bianchet, M., Medjahed, D., Hullihen, J., Pedersen, P.L., and Amzel, L.M. (1994) The Three Dimensional Structure of Rat Liver Mitochondrial F1-ATPase: X-Ray Diffraction Studies. **Biochim. Biophys. Acta.** 1187, 163-164.

52. Pedersen, P.L. (1994) The Machine That Makes ATP. **Curr. Biol.** 4, 1138-1141.

53. Thomas, P.J., Ko, Y.H., Shenbagamurthi, P., and Pedersen, P.L. (1995) Nucleotide Domains in Transport ATPases. Structure-Function and Relationship to Disease. In: **Ion Channels and Genetic Diseases (The Rockefeller University Press),** 17-28.

54. Pedersen, P.L., Bianchet, M., Amzel, L.M., Garboczi, D.N. and Thomas, P.J. (1994) Mitochondrial ATP Synthase: Progress Toward Understanding The Relationship Between Its Unique Structure and Its Biological Function. In: **Biochemistry of Cell Membranes (Papa,S. and Tager J.H. eds) Birkhauser Verlag A.G. Publishers),** 179-189.

55. Pedersen, P.L. (1995) Multidrug Resistance: A Fascinating, Clinically Relevant Problem in Bioenergetics. **J. Bioenerg. Biomemb.** 27, 3-5.

56. Thomas, P.J., Qu, Bao-He, and Pedersen, P.L. (1995) Defective Protein Folding as a Basis of Human Disease. **Trends in Biochem. Sci.**, 20, 456-459.

57. Pedersen, P.L. (1996) Frontiers in ATP Synthase Research: Understanding the Relationship Between Subunit Movements and ATP Synthesis. **J. Bioenerg. Biomemb.** 28, 389-395.

58. Ko, Y.H. and Pedersen, P.L. (1997) Frontiers in Research on Cystic Fibrosis: Understanding Its Molecular and Chemical Basis and Relationship to the Pathogenesis of the Disease. **J. Bioenerg. Biomemb.** 29, 417-427.

59. Mathupala, S.P., Rempel, A., and Pedersen, P.L. (1997) Aberrant Glycolytic Metabolism of Cancer Cells: A Remarkable Coordination of Genetic, Transcriptional, Post-translational, and Mutational Events that Lead to a Critical Role for Type II Hexokinase. **J. Bioenerg. Biomemb.** 29, 339-343.

60. Pedersen, P.L. (1997) ATP Synthesis in Mitochondria. In: **Encyclopedia of Human Biology. Second Edition, Academic Press**, Vol. 1, 575-583.

61. Rempel, A., Mathupala, S.P., and Pedersen, P.L. (1998) Glucose catabolism in cancer cells: Role and Regulation of hexokinase Expression. In: **Cell Growth and Oncogenesis (P. Bannash, D. Kanduc, S. Papa, and J.M. Tager (eds), Birkhäuser Verlag Basel/Switzerland**, pages 3-14.

62. Bianchet, M.A., Pedersen, P.L., and Amzel, L.M. (1999) Structure of F_1-ATPase and the Mechanism of ATP Synthesis/Hydrolysis. In: **Frontiers of Cellular Bioenergetics (S. Papa, et al., eds) Plenum Publishers, New York**, pages 361-376.

63. Pedersen, P.L. (1999) Mitochondrial Events in the Life and Death of Animal Cells: A Brief Overview. **J. Bioenerg. Biomemb**. 31, 291-304.

64. Pedersen, P.L., Ko, Y.H., and Hong, S. (2000) ATP Synthases in the Year 2000: Defining the Different Levels of Mechanism and Getting a Grip on Each. **J. Bioenerg. Biomemb.** 32, 423-432.

65. Pedersen, P.L., Ko, Y.H., and Hong, S. (2000) ATP Synthases in the Year 2000: Evolving Views About the Structures of These Remarkable Enzyme Complexes. **J. Bioenerg. and Biomemb.** 32, 325-332.

66. Bianchet, M.A., Pedersen, P.L., and Amzel, L.M. (2000) Notes on the Mechanism of ATP Synthesis. **J. Bioenerg. Biomemb.** 32, 517-521.

67. Ko, Y. H., and Pedersen, P.L. (2001) Cystic Fibrosis: A Brief Look at Some Highlights of a Decade of Research Focused on Elucidating and Correcting the Molecular Basis of the Disease. **J. Bioenerg. Biomemb.** 33, 513-521.

68. Pedersen, P.L., Mathupala, S., Rempel, A., Geschwind, J.F., and Ko, Y.H. (2002) Mitochondrial Bound Type II Hexokinase: A Key Player in the Growth and Survival of Many Cancers and an Ideal Prospect for Therapeutic Intervention. **Biochem. Biophys. Acta**, 1555 (2002) 14-20.

69. Pedersen, P.L. (2002) Transport ATPases in Biological Systems and Relationship to Human Disease: A Brief Overview. **J. Bioenerg. Biomemb**. 34, 327-332.

70. Geschwind, J.F., Georgiades, C.S., Ko, Y. H., and Pedersen, P.L. (2004) Recently Elucidated Energy Catabolism Pathways Provide Opportunities for Novel Treatments in Hepatocellular Carcinoma. **Exp.Rev. Anticancer Ther.** 4, 449-457.

71. Pedersen, P.L. (2005) Transport ATPases: Structure, Motors, Mechanism and Medicine: A Brief Overview. **J. Bioenerg. Biomemb**. 37, 349-357.

72. Mathupala, S. P., Ko, Y.H., and Pedersen, P. L. (2006) Hexokinase II: Cancer's Double-Edged Sword Acting as Both Facilitator and Gatekeeper of Malignancy when Bound to Mitochondria. **Oncogene,** 25, 4777-4786.

73. Pedersen, P. L. (2007) The Cancer Cell's "Power Plants" as Promising Therapeutic Targets: An Overview. **J. Bioenerg. Biomemb.,** 39, 1-12.

74. Pedersen, P.L. (2007) Warburg, Me and Hexokinase 2: Multiple Discoveries of Key Molecular Events Underlying One of Cancers' Most Common Phenotypes, the "Warburg Effect", i.e., Elevated Glycolysis in the Presence of Oxygen. **J. Bioenerg. Biomemb.** 39, 211-222.

75. Pedersen, P.L. (2007) Transport ATPases into the Year 2008: A Brief Overview Related to Types, Structures Functions and Roles in Health and Disease. **J. Bioenerg. Biomemb.** 39, 349-355.

77. Pedersen, P. L. (2008) Voltage Dependent Anion Channels (VDACs): A Brief Introduction with a Focus on the Outer Mitochondrial Compartment's Role together with Hexokinase-2 in the "Warburg Effect" in Cancer. **J. Bioenerg. Biomembr**. 40, 123-126.

78. Hong S. and Pedersen P.L. (2008) ATP Synthase and the Actions of Inhibitors Utilized to Study Its Roles in Human Health, Disease, and Other Scientific Areas. **Microbiol. Mol. Biol. Rev.** 72, 590-641,

79. Mathupala, S.P., Ko, Y.H., and Pedersen, P.L. (2009) Hexokinase-2 Bound to Mitochondria: Cancer's Stygian Link to the "Warburg Effect". **Semin.Cancer Biol.** 19, 17-34.

80. Pedersen, P. L. (2009) Mitochondrial Matters of the Heart: A Plethora of Regulatory Modes to Maintain Function for a Long Lifetime. **J. Bioenerg. Biomembr**. 41, 95-98.

81. Pedersen, P. L. (2009) Mitochondrial Matters of Brain: Amyloid Formation and Alzheimer's Disease Introduction. **J. Bioenerg. Biomembr**. 41, 403-405.

82. Mathupala, S.P. Ko, Y.H., and Pedersen, P.L. (2010) The Pivotal Roles of Mitochondria in Cancer: Warburg and Beyond and Encouraging Prospects for Effective Therapies. ***Biochimica et Biophysica Acta, In Press***

C. Abstracts (125)

1. Sacks, J., and Pedersen, P.L. (1964) Glucose-6-Phosphate Formation in Muscle. **Fed. Proc.** 23, 419, Abs. #1907.

2. Pedersen, P.L. (1965) The Source of Phosphate for the Glycolytic Intermediates in Muscular Contraction and the Effect of Insulin on the Turnover Rates of Phosphate Compounds of Muscle. **Ph.D. Thesis. Univ. Microfilms, Inc.** 26, 2, #65-8468.

3. Sacks, J., and Pedersen, P.L. (1965) The Effects of Fasting and Glucose Administration on the ADP Content of Muscle. **Fed. Proc.** 24, 209, Abs. #449.

4. Pedersen, P.L., Goffeau, A.G., and Lehninger, A.L. (1967) Properties of a Purified Mitochondrial ADP-ATP Exchange Enzyme. **Fed. Proc.** 26, 609, Abs. #1973.

5. Pedersen, P.L., and Schnaitman, C. (1968) Localization and Properties of the Oligomycin-sensitive ADP-ATP Exchange Enzyme of Rat Liver Mitochondria. **Fed. Proc.** 27, 301, Abs. #462.

6. Pedersen, P.L., and Chan, T.L. (1970) Phosphorylation and Ca++ Binding Properties of a Highly Purified Inner Membrane Preparation of Rat Liver Mitochondria. **Fed. Proc.** 29, 733, Abs. #2755.

7. Pedersen, P.L., and Schnaitman, C.A. (1970) The Oligomycin-sensitive ADP-ATP Exchange Catalyzed by a Mitoplast Fraction of Rat Liver Mitochondria. **Colloquium in Bioenergetics, Energy Transduction in Respiration and Photosynthesis, Pugnochioso, Italy**, 69, Abstracts.

8. Catterall, W.A., Eska, T., and Pedersen, P.L. (1971) Deficiency of Uncoupler - and Mg^{++}-Activated ATPase Activity in Phosphorylating Mitochondria from a Minimal Deviation Hepatoma. **Fed. Proc.** 30, 1246, Abs. #1131.

9. Pedersen, P.L., and Coty, W.A. (1972) Active Uptake of Phosphate by Inner Membrane Vesicles of Rat Liver Mitochondria - Sensitivity to Ruthenium Red and Mercurials. **Fed. Proc.** 31, 431, Abs. #1204.

10. Catterall, W.A., and Pedersen, P.L. (1973) Interaction of ADP with Purified ATPase of Rat Liver Mitochondria. **Fed. Proc.** 32, 670, Abs. #2573.

11. Pedersen, P.L., and Catterall, W.A. (1973) Structural and Catalytic Properties of Mitochondrial ATPase from Rat Liver. **9th Intl. Cong. of Biochem., Symp. on Bioenergetics, Stockholm, Sweden**, 211, Abs. #4Sc 2.

12. Coty, W.A., and Pedersen, P.L. (1974) Phosphate Transport in Rat Liver Mitochondria: Kinetic Evidence for Two Transport Systems. **Fed. Proc.** 33, 1257, Abs. #184.

13. Pedersen, P.L. (1975) Interaction of Mitochondrial ATPase from Rat Liver with Adenine Nucleotides. **ICN-UCLA Winter Confs.on Molecular and Cellular Biology**, 15, Abstracts.

14. Bustamante, E., and Pedersen, P.L. (1976) Production of an Endogenous Oncornavirus by AS-30D Hepatoma Cells - On the Possible Role of Mitochondria. **Tenth Intl. Cong. of Biochem., Hamburg, Germany**, 527, Abs. #11-4-376.

15. Pedersen, P.L., Cintron, N., and Soper, J.W. (1976) The Mitochondrial ATPase Complex of Rat Liver - A Summary of Recent Studies. **Tenth Intl. Cong. of Biochem., Hamburg, Germany**, 318, Abs. #06-8-L 012.

16. Pedersen, P.L., Wehrle, J.P., and Coty, W.A. (1976) The Transport of Inorganic Phosphate Across a Functional Biological Membrane. **Fed. Biochem. Societies, Zurich, Switzerland**, 403, Abstracts.

17. Soper, J.W., and Pedersen, P.L. (1976) Oligomycin-sensitive ATPase of Rat Liver Mitochondria – Detergent Solubilization and Inhibitor Sensitivity. **Fed. Proc.**35, 1556, Abs. #1022.

18. Pedersen, P.L. (1978) Liver Mitochondrial F_1-ATPase - Binding to Purified Inner Membrane Vesicles, Coupling Activity, and Nucleotide Requirements. **Fed. Proc.** 37, 1325, Abs. #312.

19. Pedersen, P.L., Amzel, L.M., Soper, J.W., and Cintron, N. (1978) Structure and Function of the Mammalian Mitochondrial ATPase. **29th Mosbach Colloquium der Gesellschaft fur Biologische Chemie, Hoppe-Seyler's Z. Physiol. Chem.** 359, 454.

20. Cintron, N.M., and Pedersen, P.L. (1979) ATPase "Regulatory Peptide" from Rat Liver Mitochondria: Purification and Characterization. **Fed. Proc.** 38, 456, Abs. #1206.

21. Pedersen, P.L., and Amzel, L.M. (1979) New Structural and Chemical Information Relevant to the Eventual Formulation of a "Complete" Model for the Mechanism of Action of H+-Translocating ATPases. **11th Intl. Cong. of Biochem., Toronto**, 448, Abs. #06-6-R48.

22. Pedersen, P.L., Amzel, L.M., Narayanan, P., Wehrle, J., and Schwerzmann, K. (1980) Liver H^+-Translocating ATPase - Structure, Function, and Regulation (A Progress Report). **Amer. Chem. Soc. Abstracts, Las Vegas**.

23. Schwerzmann, K., and Pedersen, P.L. (1980) F_1-ATPase Peptide Inhibitor - Is It Also an Inhibitor of ATP Synthesis? **Fed. Proc.** 39, 1844, Abs. #1247.

24. Wehrle, J.P., and Pedersen, P.L. (1981) Phosphate Transport Protein from Rat Liver Mitochondria: Reconstitution and Orientation in Phospholipid Vesicles. **Fed. Proc.** 40, 1784, Abs. #1408.

25. Bearer, C.F., Mattes, P.M., Littlefield, J.W., and Pedersen, P.L. (1982) Respiratory Coupling, Ca^{++} and Mg^{++} Levels, and Aging in Cystic Fibrosis and Normal Fibroblasts. **Cystic Fibrosis Club, 23rd Annual Meeting, Washington, D.C.**, 25, Abstracts 23

26. McEnery, M.W., Buhle, Jr., E.L., Aebi, U., and Pedersen, P.L. (1983) Proton ATPase of Rat Liver Mitochondria - Preparation of a Highly Ordered, Functional Complex Using the Novel Zwitterionic Detergent 3-[(3-Cholamidopropyl)-Dimethyl-Ammonio]-1-Propanesulfonate (CHAPS). **Fed. Proc.** 42, No. 7, 2143, Abs. #2255.

27. Parry, D.M., and Pedersen, P.L. (1983) Evidence for an Outer Mitochondrial Membrane Location for Hexokinase in the Novikoff Ascites Tumor. **Fed. Proc.** 42, No. 7, 2165, Abs. #2381.

28. Williams, N., and Pedersen, P.L. (1983) Structure of the H^+-ATPase of Liver Mitochondria: Interaction of the γ Subunit with Both the α and β Subunits. **Biophys. J.** 41, 323a, Abs. #T-PM-Pos31.

29. Nakashima, R.A., Houstek, J., and Pedersen, P.L. (1984) Evidence for an Apparent Increase in Adenine Nucleotide Translocator Protein in Tumor Mitochondria. **Amer. Assoc. Cancer Res. Annual Meeting, Toronto**, Proc. 25, 16, Abs. #62.

30. Narayanan, P., Amzel, L.M., O'Toole, T.B., and Pedersen, P.L. (1984) Structure Analysis of F_1-Portion of Proton Translocating ATPase at 3.5Å resolution. **XIIIth Intl. Cong. and Gen. Assembly, Intl. Union of Crystallography, Hamburg, Germany**.

31. Parry, D.M., and Pedersen, P.L. (1984) Evidence for an Association of Hexokinase with Low Density Mitochondria in Rat Kidney. Can. **Fed. Proc.** 27, 143.

32. Buhle, Jr., E.L., McEnery, M.W., Pedersen, P.L., and Aebi, U. (1984) Towards Ordered Arrays of the Proton Transport F_1F_0-ATPase. **Electron Microscopy Soc. of Amer. Annual Meeting, Detroit**, Abstract.

33. Kaplan, R.S., and Pedersen, P.L. (1985) Purification of the Dicarboxylate Carrier From Rat Liver Mitochondria. **Biophys. J.** (Abs.) 47, 413a #W-Pos75.

34. Nakashima, R.A., Mangan, P.S., and Pedersen, P.L. (1985) Evidence For A Relationship Between Hexokinase-Binding and the Mitochondrial VDAC Protein In AS 30D Hepatoma Cells: DCCD Labels the Pore Protein and Inhibits Hexokinase Binding. **Biophys. J.** (Abs.) 47, 238a #T-Pos42.

35. Williams, N., and Pedersen, P.L. (1985) Magnesium Binding to the Purified F_1-ATPase of Rat Liver Mitochondria-Implications For Function. **Biophys. J.** (Abs.) 47, 487a #Th-AM-A12.

36. Amzel, L.M., Narayanan, P., O'Toole, T.B., Pedersen, P.L., and Ysern, X. (1985) Structural Studies of the F_1-Part of Proton Translocating ATPase at 3.5Å Resolution. **Biophys. J.** (Abs.) 47, 486a #Th-AM-A7.

37. Nakashima, R.A., and Pedersen, P.L. (1985) Binding of Hexokinase To Its Mitochondrial Receptor In Tumor Cells - Inhibition By N, N'-Dicyclohexyl-carbodiimide (DCCD). **Fed. Proc.** (Abs.) 44, Page 1081 #3932.

38. Hoffman-McEnery, M.W., and Pedersen, P.L. (1985) Diethylstilbestrol - A Novel Probe of the Mitochondrial Proton - Translocating ATPase. **FASEB, (Abs.), Anaheim, California.**

39. Pedersen, P.L., Parry, D.M., and Nakashima, R. (1985) The Outer Mitochondrial Membrane - Its Important Role In Supporting the High Glucose Catabolic Rates of Cancer Cells. In: **Second International Workshop On Membranes In Tumour Growth. (Cittadini, A., Galeotti, T., Neri, G., and Papa, S., eds.) Catholic University School of Medicine, Roma, Italy**, 45-46.

40. Paggi, M.G., De Santis, R., Floridi, A., Chersi, A., Tecce, R., Marcante, M.L., and Pedersen, P.L. (1985) Characterization of AS-30D Rat Hepatoma Mitochondrially-Bound Hexokinase Isozymes. In: **Second International Workshop On Membranes In Tumour Growth. (Cittadini, A., Galeotti, T., Neri, G., and Papa, S., eds.) Catholic University School of Medicine, Roma, Italy**, 49-50.

41. Nakashima, R.A., and Pedersen, P.L. (1985) Binding of Hexokinase to Its Mitochondrial Receptor in Tumor Cells - Inhibition by N, N'-Dicyclohexyl-carbodiimide. **Fed. Proc.** 44, 1083.

42. Kaplan, R.S., Pratt, R.D., and Pedersen, P.L. (1986) Purification and Characterization of the Reconstitutively Active P_i/H^+ Symporter from Rat Liver Mitochondria. **Fed. Proc.** 45(30), 1486.

43. Nakashima, R.A., Mangan, P.S., and Pedersen, P.L. (1985) Evidence for A Relationship Between Hexokinase-Binding and the Mitochondrial VDAC Protein in As-30D Hepatoma Cells: DCCD Labels the Pore Protein and Inhibits Hexokinase Binding. **Biophys. J.** (Abs.) 47, 238a #T-Pos41.

44. Williams, N., and Pedersen, P.L. (1985) Magnesium Binding to the Purified F_1-ATPase of Rat Liver Mitochondria - Implications for Function. **Biophys. J.** 47, 487a #Th-AM-A12.

45. Kaplan, R.S., and Pedersen, P.L. (1985) Purification of the Dicarboxylate Carrer from Rat Liver Mitochondria. **Biophys. J.** 47, 413a #W-Pos75.

46. Garboczi, D.N., Gerring, S.L., Fox, A.H., Pedersen, P.L., Churchill, P., and Churchill, S. (1987) Molecular Cloning of the β-Subunit of Rat Liver F_1-ATPase. **Biophys. J.** 51, 243a #Tu-PM-F8.

47. Pedersen, P.L., and Hullihen, J. (1987) Mitochondrial ATP Synthase - Mg++ Induced Alterations In the Structure and Function of the F_1 Moiety. **Fed. Proc.** 46(6), 1967 #243.

48. Nakashima, R.A., Paggi, M.G., Scott, L.J., and Pedersen, P.L. (1987) Properties of A Mitochondrial Bound Form of Hexokinase Characteristic of Cancer Cells Exhibiting A High Glucose Catabolic Rate. **Fed. Proc.** 46(6), 2293 #2139.

49. Arora, K., and Pedersen, P.L. (1988) Metabolic Significance of Mitochondrial Bound Hexokinase in Tumor Cell Metabolism: Evidence for Preferential Phosphorylation of Glucose by Intramitochondrially Generated ATP. **FASEB J.** 2(5), A1121 #4796.

50. Garboczi, D., Hullihen, J., Shenbagamurthi, P., Kirk, W., and Pedersen, P.L. (1988) Rat Liver Mitochondrial ATP Synthase - Subunit and Peptide Characterization of Distinct ATP and ADP Binding Domains on the F_1-Moiety. **FASEB J.** (Abs.) 2(5), A1121 #4791.

51. Pedersen, P.L. (1988) Molecular Basis of the High Glucose Catabolic Rate of Cancer Cells. **Proc.CliniChem** 88 3, 20.

52. Garboczi, D.N., Hullihen, J.H., and Pedersen, P.L. (1988) ATP Synthase: Overexpression in *E. coli* of A Rat Liver β Subunit Peptide and Its Interaction with Adenine Nucleotides. **J. Cell Biol.** 107(6), 628a #3560.

53. Ferreira, G.C., Pratt, R.D., and Pedersen, P.L. (1988) Rat Liver Mitochondrial Phosphate Transporter: Cloning and Sequencing of A Full-Length cDNA Clone. **J. Cell Biol.** 107(6), 363a #2065.

54. McEnery, M.W., and Pedersen, P.L. (1988) Diethystilbestrol-Interaction with the Proton Channel of Rat Liver Mitochondrial ATP-Synthase. **J. Cell Biol.** 107(6), 628a #3561.

55. Ysern, X., Pedersen, P.L., and Amzel, L.M. (1989) The F_1-Sector of ATP-Synthase: Model from a 3.8Å Density Map. **Biophys. J.** 55, 31a #M-AM-G7.

56. Garboczi, D.N., and Pedersen, P.L. (1989) Expression of Rat Liver ATP Synthase Beta Subunit and Beta Subunit Peptides in an *E. coli* Secretion System. **Biophys. J.** 55, 31a #M-AM-G8.

57. Pedersen, P.L., Garboczi, D.N., Amzel, M., and Ysern, X. (1990) Mitochondrial ATP Synthase: Structure, Nucleotide Domains, and Genetic Modification. **Biophys. J.** 57(2), 5a #M-PM-Sym-1.

58. Arora, K.K., Fanciulli, M., and Pedersen, P.L. (1990) Tumor Mitochondrial Hexokinase: cDNA Cloning, Amino Acid Sequence and Overexpression in *E. coli* of an Active, Bindable Form. **Biophys. J.** 57(2), 37a #M-Pos21.

59. Ferreira, G.C., and Pedersen, P.L. (1990) Mitochondrial Phosphate Transporter: Amino Acid Sequence and Expression of a Fusion Protein in *E. coli*. **Biophys. J.** 57(2), 180a #M-Pos568.

60. Ysern, X., Boyington, J., Pedersen, P.L., and Amzel, L.M. (1990) Mitochondrial ATP Synthase: Progress on the Structure of the F1 Sector by X-Ray Diffraction. **Biophys. J.** 57(2), 201a #Tu-PM-A1.

61. Garboczi, D.N., Thomas, P.J., and Pedersen, P.L. (1990) Mutations in a Rat Liver ATP Synthase Beta Subunit Peptide. **Biophys. J.** 57(2), 563a #W-Pos577.

62. Lee, J.H., Garboczi, D.N., Thomas, P.J., and Pedersen, P.L. (1990) Mitochondrial ATP Synthase: cDNA Cloning, Amino Acid Sequence, Overexpression, and Properties of the Rat Liver α-Subunit. **Biophys. J.** 57(2), 563a #W-Pos578.

63. Pedersen, P.L., and Thomas, P.J. (1990) ATP Binding Domains/Motifs: Facts and Fantasies. **Institute for Biophysical Research on Macromolecular Assemblies. Lancaster, PA.**

64. Garboczi, D.N., Thomas, P.J., and Pedersen, P.L. (1990) Mutations in a Rat Liver ATP Synthase Beta Subunit Peptide. **Biophys. J.** 57, 563a.

65. Lee J.H., Garboczi, D.N., Thomas, P.J., and Pedersen, P.L. (1990) Mitochondrial ATP Synthase: cDNA Cloning, Amino Acid Sequence, Overexpression, and Properties of the Rat Liver α Subunit. **Biophys. J.** 57, 563a.

66. Thomas, P.J., Shenbagamurthi, P., Ysern, X., and Pedersen, P.L. (1991) The Cystic Fibrosis Transmembrane Conductance Regulator: Synthetic Peptides Corresponding to a Crucial Functional Region of the Protein. **Biophys. J.** 59 (2), 514a.

67. Thomas, P.J., Garboczi, D.N., and Pedersen, P.L. (1991) The Mitochondrial ATP Synthase: Mutational Analysis of the Consensus Nucleotide Binding Sequences in the β-Subunit. **Biophys. J.** 59 (2), 514a.

68. Thomas, P.J., Shenbagamurthi, P., Ysern, X., and Pedersen, P.L. (1991) Synthetic Peptides Corresponding to CFTR Wild Type and ΔF508 Nucleotide Binding Folds. **Ped. Pulmon**. **Suppl.** 7.

69. Pedersen, P.L., Thomas, P.J., Garboczi, D.N., Ysern, X., and Amzel, L.M. (1991) Relationship Between Structure and Function in F-type ATPases (ATP Synthases). **Ion Pumps: Structure and Mechanism, Gothenburg, Sweden.**

70. Pedersen, P.L., Ferreira, G.C., Pratt, R.D., Garboczi, D.N., Thomas, P.J., Ysern, X., Amzel, L.M. (1991) Phosphate: A Molecular View of the Pump that Moves It and the Pump that Traps It. **15th International Congress of Biochemistry, Jerusalem, Israel**.

71. Thomas, P.J., Ko, Y.H., Garboczi, D.N., and Pedersen, P.L. (1991) Mutational Analysis of the Consensus Nucleotide Binding Sequences in the Mitochondrial ATP Synthase β Subunit. **Protein Society, Baltimore, Maryland.**

72. Thomas, P.J., Shenbagamurthi, P., Hullihen, J., Ysern, X., and Pedersen, P.L. (1991) Synthetic Peptides Corresponding to a Crucial Functional Region of the Cystic Fibrosis Transmembrane Conductance Regulator Protein. **Protein Society, Baltimore, Maryland.**

73. Thomas, P.J., Ko, Y.H., and Pedersen, P.L. (1991) Nucleotide Binding Sites and Their Alteration in Disease: Nucleotide Binding Sites on the Mitochondrial ATP Synthase. **Institute for Biophysical Research on Macromolecular Assemblies, Coolfont, WV.**

74. Thomas, P.J., Ko, Y.H., and Pedersen, P.L. (1991) Nucleotide Binding Sites and Their Alteration in Disease: Nucleotide Binding Sites on the Cystic Fibrosis Transmembrane Conductance Regulator. **Institute for Biophysical Research on Macromolecular Assemblies, Coolfont, WV.**

75. Thomas, P.J., Garboczi, D.N., and Pedersen, P.L. (1991) The Mitochondrial ATP Synthase: Mutational Analysis of the Consensus Nucleotide Binding Sequences in the β Subunit. **Biophys. J.** 59, 514a.

76. Thomas, P.J., Shenbagamurthi, P., Ysern, X., and Pedersen, P.L. (1991) The Cystic Fibrosis Transmembrane Conductance Regulator: Synthetic Peptides Corresponding to a Crucial Functional Domain of the Protein. **Biophys. J.** 59, 514a.

77. Pedersen, P.L., Thomas, P.J., and Shenbagamurthi, P. (1992) The Mitochondrial ATP Synthase and the Cystic Fibrosis Transmembrane Conductance Regulator: Structure Function Relationships. **First IUBMB Conf., Biochem. Diseases, Nagoya, Japan.**

78. Ko, Y.H., Thomas, P.J., and Pedersen, P.L. (1992) Overexpression and Purification of the Nucleotide Binding Fold-1 of CFTR. **Ped. Pulmon Suppl.** 8, 261.

79. LoPiero, A.R., Thomas, P.J., and Pedersen, P.L. (1992) The Rat Liver F_1-ATPase: Cloning and Sequencing of the Epsilon Subunit. **N.Y. Acad. Sci., Cleveland, OH.**

80. Lebowitz, M.L., Thomas, P.J., and Pedersen, P.L. (1992) Cloning, Sequencing, and Functional Overexpression of the Inhibitor of the Mitochondrial F_1-ATP Synthase. **N.Y. Acad. Sci., Cleveland, OH.**

81. Pedersen, P.L., Amzel, L.M., Bianchet, M., Thomas, P.J., Reynafarje, B., and Lebowitz, M. (1992) Mitochondrial ATP Synthase: Relationships Among Structure, Function, and Regulation in the F_1 Moiety. **N.Y. Acad. Sci. Cleveland, Ohio.**

82. Pedersen, P.L., Bianchet, M., Thomas, P.J., Amzel, L.M. (1992) ATP Synthase: Location, Structure, and Function of Nucleotide Domains. **EBEC, Helsinki, Finland.**

83. Thomas, P.J. Sondek, J., Ko, Y.H., and Pedersen, P.L. (1992) Protein Destabilization and Cystic Fibrosis. **Biophys. J.** 61, A62.

84. Pedersen, P.L., Amzel, L.M., Bianchet, M., Shenbagamurthi, P., Garboczi, D.N., and Thomas, P.J. (1992) ATP Domains, ATPase Structure, Biological Work, and Disease. **Biophys. J.** 61, A127.

85. Pedersen, P.L., Bianchet, M., Thomas, P.J. and Amzel, L.M. (1992) ATP Synthase: Location, Structure and Function of Nucleotide Domains. **EMBO Workshop. Phosphate Binding and Phosphoryl Transfer in Proteins, Schwangau, Bavaria (Germany)**.

86. Arora, K.K., Filburn, C.R., and Pedersen, P.L. (1992) Structure/Function Relationships In Hexokinase: Site Directed Mutational Analysis Implicate Different Functions For The N- and C-terminal Halves of The Enzyme, **FASEB J.,** #356, A62.

87. Lebowitz, M.S., Liu, W-S., and Pedersen, P.L. (1993) Peptide Analysis of the Inhibitor Protein of the Mitochondrial F_0F_1 ATP-Synthase (IF1) **FASEB J.**, 1 #312, A1105.

88. Thomas, P.J., Lebowitz, M.S., Choi, S., and Pedersen, P.L. (1993) Characterization of A Peptide Corresponding to the P-Loop of the Mitochondrial ATP Synthase α-subunit **FASEB J.** 1, #314, A1106.

89. Chuang, W-J., Liu, W.-S., Pedersen, P.L., and Mildvan, A.S. (1993) Effects of Trifluoroethanol (TFE) on the Structure and Function of PP-50, An ATP-Binding Peptide From F_1- ATPase. **FASEB J.** 1, #1323, A1279.

90. Thomas, P.J., Choi, S., Hullihen, J., and Pedersen, P.L. (1993) F-Type ATP Synthase: Characterization of a Synthetic Peptide Corresponding to the A Consensus Region of the α-subunit. **Biophys. J.** 64, (W-Pos 493), A335.

91. Pedersen, P.L., Thomas, P.J., and Ko, Y.H. (1993) Nucleotide Binding, Domain Stability, Protein Folding and Cystic Fibrosis. **Ped. Pulmon.**, Suppl. 9, 171-172.

92. Ko, Y., Thomas, P., and Pedersen, P. (1993) Nucleotide Binding To a Synthetic Peptide Segment (P-51) From NBF2 of CFTR. **Ped. Pulmon.** 50, 216.

93. Lebowitz, M.S., Golden, T., Price, H.L., and Pedersen, P.L. (1994) Fluorescence Studies of the Inhibitor Protein of the Mitochondrial F_1F_o ATP-Synthase (IF_1). **FASEB J.** 8, A1296.

94. Pedersen, P.L., Hullihen, J., Bianchet, M., Amzel, L.M. and Lebowitz, M.S. (1994) ATP Synthase: Evidence for Multiple Forms Dependent on Ligand Content and Relationship to Enzyme Symmetry. **European Bioenergetics Conference (EBEC), Madrid, Spain.**

95. Ko, Y.H. and Pedersen, P.L. (1994) Phosphorylation of NBF1 of CFTR by its Interaction with Protein Kinase A and ATP. **Late Breaking Science Session, Eighth Annual North American Cystic Fibrosis Conference, Orlando, Florida.**

96. Mathupala, A., Rempel, A., and Pedersen, P.L. (1995) Tumor Mitochondrial Hexokinase: Isolation Sequence and Assay of the Proximal Promoter. **FASEB J.** 9, A1332.

97. Rempel, A., Mathupala, S.P., and Pedersen, P.L. (1995) Tumor Mitochondrial Hexokinase: Promoter Activity in Normal and Transformed Cells. **FASEB J.**, 9, A1420.

98. Bianchet, M., Ko, Y.H., and Pedersen, P.L. (1995) Predicted 3-Dimensional Structures of the Two Nucleotide Domains of CFTR. **Ped. Pulmon. Suppl.** 12, 187.

99. Ko, Y.H. and Pedersen, P.L. (1995) The First Nucleotide Binding Fold of CFTR Can Function as an Active ATPase. **Ped. Pulmon. Suppl.** 12, 183.

100. Rempel, A., Mathupala, S.P., Griffin, C.G., Hawkins, A.L., and Pedersen, P.L. (1996) **Amer. Assoc. Cancer Res. (Proceeding)**, 37, #3682, 538.

101. Mathupala, S.P., Rempel, A., and Pedersen, P.L. (1996) Tumor Type II Hexokinase Promoter: Effect of Hypoxia on Regulation of Transcription. **FASEB J**., 10, A1514.

102. Ko, Y.H., and Pedersen, P.L. (1996) ATP: Its Relevance to CFTR and to ΔF508 Cystic Fibrosis. **Ped. Pulmon. Suppl.** 13, Abstract 48, 222.

103. Lu, T. and Pedersen, P.L. (1997) Biochemical Studies Demonstrate that the NBF1 + R Combined Domains of CFTR Interact with the NBF2. **Ped. Pulmon., Suppl.** 14, 225.

104. Ko, Y.H., and Pedersen, P.L. (1997) Cystic Fibrosis, Lung Infections, and Human Tracheal Antimicrobial Peptides. **Ped. Pulmon. Suppl.** 14, 324.

105. Ko, Y.H., and Pedersen, P.L. (1998) Role of Mg^{++} in the Chemical Mechanism of ATP Synthase: Evidence that in the Transition State the Interaction of Mg^{++} with ATP is Preferentially via the γ-Phosphate. **FASEB J.**, 12, A786.

106. Lu, N.T. and Pedersen, P.L. (1998) Cystic Fibrosis Transmembrane Conductance Regulator: Evidence for Interaction of Its Soluble Domains. **FASEB J.**, 12, A751.

107. Pan, W., Ko, Y.H., and Pedersen, P.L. (1998) The Delta Subunit of Rat Liver Mitochondrial ATP Synthase. **FASEB J.**, 12, A750.

108. Golden, T.R. and Pedersen, P.L. (1998) Mutagenic Analysis of the OSCP Subunit of the Mitochondrial ATP Synthase. **FASEB J.**, 12, A752.

109. Ko, Y.H., Bianchet, M., and Pedersen, P.L. (1998) Chemical Mechanism of Mitochondrial ATP Synthase Involving the Conserved alanine 158 in the Transition State. **Tenth European Bioenergetics Conference, Göteborg, Sweden,** Abs. T25.

110. Ko, Y.H. and Pedersen, P.L. (1998) Chemical Mechanism of ATP synthase Involving the Role of Mg^{++} in the Transition State. **Tenth European Bioenergetics Conference, Göteborg, Sweden**, Abs. T26.

111. Ko, Y.H. and Pedersen, P.L. (1998) Role of Mg^{++} in the Chemical Mechanism of ATP Synthase: Evidence that in the Transition State the Interaction of Mg^{++} with ATP is Preferentially via the γ-Phosphate. **Second International Workshop on ATP synthase and V-ATPase, Osnabrück, Germany.** Abs. FC 10.

112. Pan, W., Ko, Y.H., and Pedersen, P.L. (1998) Location of the Structurally Elusive Delta Subunit within the F_1 Moiety of an Animal ATP Synthase. **Second International Workshop on ATP Synthase and V-ATPase, Osnabrück, Germany.** Abs. FM 9.

113. Ko, Y.H., Hong, S. and Pedersen, P.L. (1999) Chemical Mechanism of ATP Synthesis Catalyzed by F-Type ATPases. **FASEB Summer Research Conference on Transport ATPases, Snowmass, Colorado**, Abs., 13.

114. Ko, Y.H., Massiah, M., Mildvan, A.S., and Pedersen, P.L. (1999) CFTR and Cystic Fibrosis: Folding up a Folding disease. **FASEB Summer Research Conference on Transport ATPases, Snowmass, Colorado**, Abs., 17.

115. Mathupala, S.P. and Pedersen, P.L. (1999) Arrest of Proliferation of Highly Glycolytic Tumors upon Type II Hexokinase: Down Regulation via an Antisense RNA Approach. **Proc. of the Amer. Assoc. Cancer Res. (Annual Meeting) Philadelphia**, P**A**, Abs. #145, 22.

116. Ko, Y.H. and Pedersen, P.L. 91999) Structure Based Selection of Chemical Chaperones for Correcting the Misfolded Region of Delta F508 CFTR. **Ped. Pulmon. Suppl.** 19, 167.

117. Pedersen, P.L. (1999) Folding Diseases: Structural Basis and Correction. **The third International Congress of the Genetics, Biochemistry and Physiology of nm23/Nucleoside Diphosphate Kinase, Bordeaux, France.** T17.

118. Ko, Y.H. and Pedersen, P.L. (1999) The CFTR Folding Problem: Identification and Correction. In: **Workshop on ABC Transporters, NIH (NCI), Bethesda, Maryland.**

119. Ko, Y.H., Hong, S., Hullihen, J., and Pedersen, P.L. (2000) Mitochondrial ATP Synthase: Molecular Insights into Coupling Between F_0 and F_1. **Biochim. Biophys. Acta, EBEC Short Reports**, 11, Abs. #I-21, 199.

120. Ko, Y.H., Pedersen, P.L., and Geschwind, J.F. (2001) Metabolic Properties of the Rabbit VX2 Tumor Model Following Liver Implantation: Role for Hexokinase. **Cancer Res.** 42, Abs. #2796, 519.

121. Pedersen, P.L., Ko, Y., Delannoy, M., Hullihen, J., Geschwind, J.F., and Torbenson, M. Mitochondrial ATP Synthase: From Mechanism to Cancer Medicine, **29th FEBS Congress, June 26-July 1, 2004**. Abstract.

122-126. Pedersen, P. L. Abstracts of invited talks related to ATP synthases' structure, function, and relationship to disease (2001, 2003, 2005, & 2010) **FASEB Summer Research Conference on Transport ATPases.**

D. Inventions

1. Project Title: Method for Identifying an Agent that Corrects Defective Protein Folding, September, 2000: Office of Technology Licensing, The Johns Hopkins University, School of Medicine U.S. Patent and Trademark Office (Application 09/668,415) [Now in Public Domain]
Inventors: Ko, Y.H. and **Pedersen, P.L.**

2. Project Title: Therapeutics for Cancer using 3-Bromopyruvate and Other Selective Inhibitors of ATP Production. US Patent and Trademark Office (Application No. 10/243,550, Patent No. 7,547,673)
Ko, Y.H., Geschwind, J.F., and **Pedersen, P.L.)**

3. Therapeutics for Cancer related to 3-Bromopyruvate (Ko, Y.H. has several pending technologies related to 3-bromopyruvate's highly potent anti-cancer properties and use as a therapy for cancer)

14. HOBBIES

Gardening (Specialty in Strawberries), Picking the Guitar, Walking

15. CONTACT INFORMATION

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