

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
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NAME Geoffrey L. Greene	POSITION TITLE Professor		
eRA COMMONS USER NAME (credential, e.g., agency login) GGREENE			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
The College of Wooster, Wooster, OH	B.A.	1969	Chemistry
Northwestern University, Evanston, IL	Ph.D.	1974	Chemistry
University of Chicago, Chicago, IL	Postdoctoral Trainee	1974-1977	Biochemical Endocrinology

A. Positions and Honors**Positions and Employment**

1974-77 Postdoctoral Trainee, Ben May Laboratory for Cancer Research, University of Chicago
 1977-80 Research Associate (Assistant Prof.), Ben May Laboratory for Cancer Research
 1980-84 Assistant Professor, Ben May Laboratory for Cancer Research
 1984-86 Assistant Professor, Ben May Laboratory for Cancer Research and the Department of Biochemistry and Molecular Biology
 1986-91 Associate Professor, Ben May Institute and the Department of Biochemistry and Molecular Biology
 1991- Professor, Ben May Institute and the Department of Biochemistry and Molecular Biology
 2004- Chair, Committee on Cancer Biology

Other Experience and Professional Memberships

1978 Exchange Scientist; US/France Cooperative Science Program (NCI/INSERM)
 1982 Exchange Scientist; US/France Cooperative Science Program (NCI/INSERM)
 1984 Exchange Scientist; US/France Cooperative Science Program (NSF/CNRS)
 1991 Visiting Professor, University of Modena, Modena, Italy
 2004 Visiting Professor, University of Parma, Parma, Italy

Honors and Awards

1988 Ernst Oppenheimer Award; The Endocrine Society
 1992 John Brewer Distinguished Alumni Lectureship, Northwestern University Medical School
 1997 Tartikoff-Semel Award, Revlon/UCLA Women's Cancer Research Program
 1998 Distinguished Visiting Scientist, UCLA Brain Research Institute, Los Angeles
 1998 Inaugural Lecturer, Olof Pearson Lectureship, Case Western Reserve University
 2003 Virginia and D. K. Ludwig Professor for Cancer Research
 2006 NAMS/Wyeth Pharmaceutical SERMs award from the North American Menopausal Society

B. Selected peer reviewed publications (in chronological order)

1. Shiao AK, Barstad D, Loria PM, Cheng L, Kushner PJ, Agard DA, Greene GL 1998 The structural basis of estrogen receptor/coactivator recognition and the antagonism of this interaction by tamoxifen. Cell 95:927-937
2. Wood JR, Greene GL, Nardulli AM 1998 Estrogen response elements function as allosteric modulators of estrogen receptor conformation. Mol Cell Biol 18:1927-1934
3. Kushner PJ, Agard DA, Greene GL, Scanlan TS, Shiao AK, Uht RM, Webb P 2000 Estrogen receptor pathways to AP-1. J Steroid Biochem Mol Biol 74:311-317
4. Griffin C, Flouriot G, Sharp P, Greene G, Gannon F 2001 Distribution analysis of the two chicken estrogen receptor-alpha isoforms and their transcripts in the hypothalamus and anterior pituitary gland. Biol Reprod 65:1156-1163
5. Janulis M, Trakul N, Greene G, Schaefer EM, Lee JD, Rosner MR 2001 A novel mitogen-activated protein

- kinase is responsive to Raf and mediates growth factor specificity. Mol Cell Biol 21:2235-2247
6. Shiao AK, Barstad D, Radek JT, Meyers MJ, Nettles KW, Katzenellenbogen BS, Katzenellenbogen JA, Agard DA, Greene GL 2002 Structural characterization of a subtype-selective ligand reveals a novel mode of estrogen receptor antagonism. Nat Struct Biol 9:359-364
 7. Nettles KW, Greene GL 2003 Nuclear receptor ligands and cofactor recruitment: is there a coactivator "on deck"? Mol Cell 11:850-851
 8. Greene GL, Shiao AK, Nettles KW 2004 A structural explanation for ERalpha/ERbeta SERM discrimination. Ernst Schering Res Found Workshop:33-45
 9. Nettles KW, Sun J, Radek JT, Sheng S, Rodriguez AL, Katzenellenbogen JA, Katzenellenbogen BS, Greene GL 2004 Allosteric control of ligand selectivity between estrogen receptors alpha and beta: implications for other nuclear receptors. Mol Cell 13:317-327
 10. Razandi M, Pedram A, Merchenthaler I, Greene GL, Levin ER 2004 Plasma membrane estrogen receptors exist and functions as dimers. Mol Endocrinol 18:2854-2865
 11. Leong H, Sloan JR, Nash PD, Greene GL 2005 Recruitment of histone deacetylase 4 to the N-terminal region of estrogen receptor alpha. Mol Endocrinol 19:2930-2942
 12. Nettles KW, Greene GL 2005 Ligand control of coregulator recruitment to nuclear receptors. Annu Rev Physiol 67:309-333
 13. Wu YL, Yang X, Ren Z, McDonnell DP, Norris JD, Willson TM, Greene GL 2005 Structural basis for an unexpected mode of SERM-mediated ER antagonism. Mol Cell 18:413-424
 14. Yeo WS, Min DH, Hsieh RW, Greene GL, Mrksich M 2005 Label-free detection of protein-protein interactions on biochips. Angew Chem Int Ed Engl 44:5480-5483
 15. Hsieh RW, Rajan SS, Sharma SK, Guo Y, DeSombre ER, Mrksich M, Greene GL 2006 Identification of ligands with bicyclic scaffolds provides insights into mechanisms of estrogen receptor subtype selectivity. J Biol Chem 281:17909-17919
 16. Huang J, Koide A, Nettles KW, Greene GL, Koide S 2006 Conformation-specific affinity purification of proteins using engineered binding proteins: application to the estrogen receptor. Protein Expr Purif 47:348-354
 17. Nettles KW, Bruning JB, Gil G, O'Neill EE, Nowak J, Hughs A, Kim Y, DeSombre ER, Dilis R, Hanson RN, Joachimiak A, Greene GL 2007 Structural plasticity in the oestrogen receptor ligand-binding domain. EMBO Rep 8:563-568
 18. Zhou HB, Nettles KW, Bruning JB, Kim Y, Joachimiak A, Sharma S, Carlson KE, Stossi F, Katzenellenbogen BS, Greene GL, Katzenellenbogen JA 2007 Elemental isomerism: a boron-nitrogen surrogate for a carbon-carbon double bond increases the chemical diversity of estrogen receptor ligands. Chemistry & Biology 14:659-669
 19. Zhou HB, Sheng S, Compton DR, Kim Y, Joachimiak A, Sharma S, Carlson KE, Katzenellenbogen BS, Nettles KW, Greene GL, Katzenellenbogen JA 2007 Structure-guided optimization of estrogen receptor binding affinity and antagonist potency of pyrazolopyrimidines with basic side chains. J Med Chem 50:399-403
 20. Hsieh RW, Rajan SS, Sharma SK, Greene GL 2008 Molecular characterization of a B-ring unsaturated estrogen: Implications for conjugated equine estrogen components of Premarin. Steroids 73:59-68
 21. Leong H, Mathur PS, Greene GL 2008 Inhibition of mammary tumorigenesis in the C3(1)/SV40 mouse model by green tea. Breast cancer research and treatment 107:359-369
 22. Nettles KW, Bruning JB, Gil G, Nowak J, Sharma SK, Hahm JB, Kulp K, Hochberg RB, Zhou H, Katzenellenbogen JA, Katzenellenbogen BS, Kim Y, Joachimiak A, Greene GL 2008 NFkappaB selectivity of estrogen receptor ligands revealed by comparative crystallographic analyses. Nature chemical biology 4:241-247
 23. Nettles KW, Gil G, Nowak J, Metivier R, Sharma VB, Greene GL 2008 CBP Is a dosage-dependent regulator of nuclear factor-kappaB suppression by the estrogen receptor. Molecular endocrinology 22:263-272
 24. Sinkevicius KW, Burdette JE, Woloszyn K, Hewitt SC, Hamilton K, Sugg SL, Temple KA, Wondisford FE, Korach KS, Woodruff TK, Greene GL 2008 An estrogen receptor {alpha} knock-in mutation provides evidence of ligand-independent signaling and allows modulation of ligand-induced pathways in vivo. Endocrinology 149:2970-2979

C. Research Support

Ongoing Research Support

W81XWH-04-0791 Press (PI)
DOD/BCCOE

9/1/04 – 8/31/09

A Genetic, Molecular, and Structural Analysis of Hormonal Carcinogenesis
Project 2. Structural analysis of hormone receptors and cofactors. We will determine the three-dimensional structures of important ER α , ER β and PR regulatory domains in association with proteins implicated in hormonal responsiveness and breast cancer.
Role: Co-Investigator; PI, Project 2.

G. Greene (P.I.)
Ludwig Fund for Cancer Research

7/1/05 - 6/30/09

Hormone Receptors as targets for enhanced radiotherapy/chemotherapy sensitivity in cancers of the Breast and Prostate.

The focus of this grant is to characterize and exploit steroid hormone receptors as targets for enhancing the killing effects of ionizing radiation in the treatment of breast and prostate cancers. We will also carry out a small molecule screen for receptor independent radiotherapy/chemotherapy sensitizers in cancers of the breast, lung, ovary and prostate.

Role: PI

Segal Gift Greene (PI)

7/1/05 – 6/30/09

Green Tea Chemoprevention of Human Breast and Prostate Cancer

The objective of this research is to determine if green tea catechins reduce the incidence or delay the onset/progression of mammary or prostate cancers in transgenic mice predisposed to these cancers.

Role: PI

1 P50 CA125183 (Olapade)

9/27/06 - 7/31/11

PHSN/NCI

SPORE in Breast Cancer

The goal of the SPORE in breast cancer is to bring together world-renowned investigators at the University of Chicago to design innovative research that will translate advances in genome science to solve a largely neglected global problem of early onset breast cancer.

Role: Co-Investigator

7410-07 (Thirman)

10/1/06 - 9/30/11

The Leukemia and Lymphoma Society

Peptide and Small Molecule Therapeutics for Hematologic Malignancies

The major goal of this grant is to develop peptide and small molecule therapeutics in leukemia and lymphoma using defined targets including MLL fusion proteins in AML and ALL, cell cycle regulatory proteins in ALL and MCL, BCR-ABL in Ph+ leukemia, and BCL6 in non-Hodgkin's lymphoma.

Role: Leader - Core B - Small Molecule Therapeutics

W81XWH-07-1-0582 (Kron, PI; Kristjansdottir, Fellow)

7/30/07 - 8/29/09

Department of Defense

Differential Phosphoproteome Profiling of Tamoxifen Response

The specific aim of this proposal is to examine response to tamoxifen in breast tumor cell lines, to compare the phosphoprotein profile of tamoxifen resistant and sensitive breast cancer cell lines to identify potential biomarkers for tamoxifen resistance to test the biomarkers identified in an array of breast cancer cell lines.

Role: Mentor

2 RO1 CA089489-06A1(Greene)

7/1/07 – 4/30/12

NIH
Development and Characterization of Novel SERMs
The objective of this investigation is to determine the molecular and structural distinctions between estrogen agonism and antagonism in hormone dependent tissues and cancers and to identify, develop and characterize novel compounds that have desired tissue-selective estrogenic or antiestrogenic properties.
Role: PI

3115A1-1127-US (Greene)

1/1/2008 – 12/31/08

Wyeth Pharmaceuticals, Inc.
Structure-function analysis of ER alpha/beta bound to Bazedoxifene/CE mixture
Role: PI

5P30CA14599-30 LeBeau (PI)

4/1/02 – 3/31/09

NIH/NCI
Cancer Center Support Grant
As Associate Director of Basic Science, Dr. Greene will oversee the Basic Science Research Programs and the shared Basic Science Core Facilities of the Cancer Research Center and Associate Director of Education.
Role: Co-Investigator

Completed Research Support

PDF0503835

5/1/05 - 4/30/08

Susan G. Komen Breast Cancer Foundation (H. Leong, Fellow)
Estrogen Receptor AF-1 Interacting Proteins and Peptides
Identification of novel proteins and short peptides that bind to the AF-1 region of the ER. Characterization of identified peptides and proteins for therapeutic potential.
Role: PI and Postdoctoral Supervisor

BC044382

1/1/05 – 12/31/07

DOD/BCRP Predoctoral Traineeship Award (E. O'Neill, Fellow)
Extranuclear Signaling Effects Mediated by the Estrogen Receptor
Task 1: To determine the extent of Src/Ras/Erk MAPK activation by ER in an animal model and define the molecular mechanism by which ER modulates this cascade.
Task 2: To determine and compare the downstream target genes that are regulated by ER extranuclear signaling versus classical ER transactivation.
Role: PI and Predoctoral Supervisor

W81XW H-04-1-0347

2/23/04 – 2/22/07

DOD Predoctoral Traineeship Award (K. Wolf)
Estrogen Receptor Alpha G525L Knock-in Mice
To define the contribution of classical ER α activation in murine mammary gland development and to determine the role of classical ER α activation in mammary tumorigenesis via genetic induction of breast cancer in the G525L ER α knock-in mice
Role: PI and Predoctoral Supervisor

1-R01 CA89489 Greene (PI)

8/15/01 - 7/31/06

NIH/NCI
Development and Characterization of Novel SERMs
The focus of this grant is to determine the crystallographic structures of ER α and ER β complexed with several novel nonsteroidal and steroidal SERMs with ER subtype-selective affinity or behavior.
Role: PI