June 11, 2014

CURRICULUM VITAE

Name: Peter Mitchell Blumberg, Ph.D.

Education:

1970 - B.A. *Summa Cum Laude* (Biochemical Sciences), Harvard University, Cambridge, MA
1970 - M.A. (Biochemistry and Molecular Biology), Harvard University, Cambridge, MA
1974 - Ph.D. (Biochemistry and Molecular Biology), Harvard University, Cambridge, MA

Brief Chronology of Employment:

1969-1973 - Graduate student, Department of Biochemistry and Molecular Biology, Harvard University, Laboratory of Dr. Jack L.Strominger, Cambridge, MA
1974-1975 - Postdoctoral fellow, Department of Biology, Massachusetts Institute of Technology, Laboratory of Dr. Phillip W. Robbins, Cambridge, MA
1975-1981 - Assistant Professor and Associate Professor, Department of Pharmacology, Harvard Medical School, Cambridge, MA
1981-Date - Chief, Molecular Mechanisms of Tumor Promotion Section, Laboratory of Cancer Biology and Genetics (formerly Laboratory of Cellular Carcinogenesis and Tumor Promotion), Center for Cancer Research, National Cancer Institute, National Institutes of Health, Bethesda, MD

Societies:

American Association for Cancer Research
American Association for the Advancement of Science
American Chemical Society
American Society for Pharmacology and Experimental Therapeutics
Society for Neuroscience

Honors and Special Scientific Recognition:

Detur Award given by Harvard for academic excellence, l967
Chemical Industries Council of New Jersey Scholarship, l966-l970
Honorary National Honor Society Scholarship, l966-l970
Honorary Harvard National Scholarship, l966-l970
National Merit Scholarship, l966-l970
Phi Beta Kappa Senior 24, l969
A.B. Summa Cum Laude, l970
Woodrow Wilson Fellow, l970-l97l
National Science Foundation Predoctoral Graduate Fellowship,
Harvard University Honorary Graduate National Scholarship, l970-l973.
Helen Hay Whitney Postdoctoral Fellowship, l973-l975
Medical Foundation Fellowship, Boston, l978-l979
Research Career Development Award, l979-l984
U.S.-Japan Cancer Research Exchange Scholar, University of Tokyo, October, 1985
Rhoads Memorial Award, American Assoc. Cancer Res., 1987
1989 Ronald R. Fisher Lecturer, University of South Carolina
1989 NIH Merit Award
1991 NIH Directors Award
1995 Public Health Service Superior Service Award

1995, 1997, 1999, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012 Federal Technology Transfer Act Award
2002 NIH Director's Award for Mentoring
2002 Leading Diversity Award, National Cancer Institute
2005 NIH Director's Award for Mentoring, National Cancer Institute
2007 National Public Service Award by the American Society for Public Administration and the National Academy of Public Administration
2013 ASBMB Ruth Kirschstein Diversity in Science Award

Research Interests:

My group seeks to understand the molecular basis for specificity of ligand interaction and for regulation of two classes of validated therapeutic targets for cancer. The primary therapeutic target is that of protein kinase C and the other families of signaling proteins, such as RasGRP, which possess the C1 domain recognition motif for the ubiquitous second messenger diacylglycerol. The second target, the capsaicin receptor TRPV1, is a critical element in nociception and a therapeutic target for cancer pain.

Research Experience:

1981- present - Chief, Molecular Mechanisms of Tumor Promotion Section, Laboratory of Cancer Biology and Genetics (formerly Laboratory of Cellular Carcinogenesis and Tumor Promotion), Center for Cancer Research, National Cancer Institute
1975-1981 - Assistant/Associate Professor, Department of Pharmacology, Harvard Medical School
1974-1975 - Postdoctoral fellow, Department of Biology, Massachusetts Institute of Technology, in the laboratory of Dr. Phillip W. Robbins
1969-1975 - Graduate student, Department of Biochemistry and Molecular Biology, Harvard University, in the laboratory of Dr. Jack L. Strominger;

Professional Activities:

Associate Editor, Cancer Research l98l-1992
Associate Editor, Journal of the National Cancer Institute, 1985-present
Regional Editor, Phytotherapy Research, 1986-1991
Associate Editor, Cancer Communications, 1988-1992
Associate Editor, Oncology Research (An International Journal) 1992-2002
Editorial Board, Carcinogenesis, 1989-1991
Program Committee, American Association for Cancer Research, 1981 -1982, 1985-1986, 1990-1991, 1995-1996
Membership Committee, American Association for Cancer Research, 1981-1982
Nominating Committee, American Association for Cancer Research, 1991-1993
Clowes Award Committee, American Association for Cancer Research, 1993
Nominee, Board of Directors, American Association for Cancer Research,1983
Biochemistry and Chemical Carcinogenesis Study Section, American Cancer Society, 1986-1989; Co-chairman, 1988, Chairman, 1989
Chemical Carcinogenesis and Nutrition Study Section, American Cancer Society, Ad hoc member, 1991
Consultant, Sterling Drug Inc., 1988-1992
National Cancer Assessors Panel, Australia, 1992
Assessors Panel, Anti-Cancer Council of Victoria, Australia, 1995 - 2002
NIH committee on Scientific Conduct and Ethics, 1995 - 2000
PRAT (Pharmacology Research Associate Training0 program, advisory committee, 1997 - present
Advisory Board, Center for Cancer Research, NCI 2007 - 2009
Chemists in Cancer Research Nominating Committee, American Association for Cancer Research, 2007
Chair, CCR Protein Chemistry Advisory Committee, 2012 -
Member, SMRF(Scientific and Medical Recruitment Forum) committee, NIH, 2013 -

PATENTS

1. Patent No. 4,939,149, Serial No. 7/261,627, filed 10/24/88 entitled: "Use of resiniferatoxin and analogs thereof to cause sensory afferent-C-fiber and thermoregulatory desensitization" by P. M. Blumberg, issued July 3, 1990. Exclusive license for restricted fields of use to Afferon Corporation.

2. Patent No. 5,021,450, Serial No. 07/358,073, filed 5/30/89 entitled "New class of compounds having a variable spectrum of activities for capsaicin-like responses, compositions, and uses thereof" by P. M. Blumberg, issued June 4, 1991. (European patent application No. 90907806.5, Patent No. 0 474 672, issued August 21,1996). Exclusive license for restricted fields of use to Afferon Corporation.

3. Patent No. 5,232,684, Serial No. 07/546,141, filed 5/29/90 entitled "Labeled resiniferatoxin, compositions thereof, and methods of using the same" by P. M. Blumberg, A. Szallasi, and Z. Szallasi, issued August 3, 1993. License to Perkin Elmer.

4. Patent No. 5,599,839, Serial No. 08/424,558 filed 5/30/90 entitled "An antiviral composition" by M. R. Boyd, P. A. Cox, G. M. Cragg, P. M. Blumberg, N. A. Sharkey, J. Ishitoya, J. B. McMahon, J. A. Beutler, O. S. Weislow, J. H. Cardellina II, and K. R. Gustafson, issued February 4, 1997. Licensed to AIDS Research Alliance.

5. Patent No. 5,290,816, Serial No. 07/515,721, filed 6/21/90 entitled "Composition of resiniferatoxin and analogues thereof to cause sensory afferent C-Fiber and Thermoregulatory Desensitization" by P. M. Blumberg, issued March 1, 1994. Exclusive license for restricted fields of use to Afferon Corporation.

6. Patent No. 5,821,269, Serial No. 07/892,484, filed June 3, 1992 entitled “Treated bird seen preferentially palatable to birds but not palatable to animals having capsaicin sensitive receptors, by P.M. Blumberg, issued Oct. 13, 1998. Exclusive license to Snyder Seed Corporation.

7. Patent No. 5,672,354, Serial No. 08/596,807, filed Feb. 5, 1996 entitled "Treated bird seed preferentially palatable to birds but not palatable to animals having capsaicin sensitive receptors" by P. M. Blumberg, issued September 30, 1997. Exclusive license to Snyder Seed Corporation.

8. Patent 5,879,696, Serial no. 08/874,082, filed June 12, 1997, entitled "Treated bird seed preferentially palatable to birds but not to animals", by Peter M. Blumberg, issued March 9, 1999. Exclusive license to Snyder Seed Corporation.

9. Patent No. 5,420,162, Serial No. 07/924,439, filed 4/8/91 entitled "Phorbol ester pharmaceutical compositions and their use for treating inflammation" by P. M. Blumberg and Z. Szallasi, issued May 30, 1995.

10. Patent No. 5,405,875, Serial No. 08/064,251, filed 5/21/93 entitled "Method of inhibiting neoplasia and tumor promotion" by P. M. Blumberg and Z. Szallasi, issued April 11, 1995.

11. Patent No. 5,874,464, Serial No. 08/372,602, filed Jan 13, 1995, entitled "Conformationally restricted diacylglycerol analogues as potent protein kinase C agonists" by V.E. Marquez, J. Lee, R. Sharma, S. Wang, G.W.A. Milne, M.C. Nicklaus, P.M. Blumberg, and N.E. Lewin, issued Feb. 23, 1999.

12. Patent 5,674,902, serial No. 08/452,392 (Divisional of U.S.S.N. 07/924,439) filed on May 26, 1995 entitled "Method of inhibiting hyperplasia to a mammal in need thereof" by P.M. Blumberg and Z. Szallasi, issued October 7, 1997.

13. Patent 6,060,505, Serial 09/142,945, filed on March 20, 1996, entitled "Method of treating cancer using 26-epi-bryostatin and analogues thereof" by P. M. Blumberg, Z. Szallasi, and G.R. Pettit, issued May 5, 2000.

14. International Patent Application No. PCT/US97/21723 (corresponding to U.S.S. N. 60/030,999, filed on November 15, 1996), entitled “Vanilloid agonists for desensitization of C-fiber sensory afferent neurons” by P. M. Blumberg, T. Biro, P. Acs, and G. Acs.

15. European Patent 0546078, application No. 91916656.1, filed on August 23, 1991, entitled “Birdfood containing capsaicin or its derivatives or analogues”, by Peter M. Blumberg, issued February 24, 1999.

16. Provisional patent 60/310,656 filed on August 6, 2001, entitled “Structurally novel constrained diacylglycerol (DAG) mimetics as potent protein kinase C alpha (PKC alpha) activators and potent inducers of apoptosis”, by J. Lee, V.E. Marquez, P.M. Blumberg, M.G. Kazanietz. Commercial evaluation license issued to Peplin under license agreement L-218-02/0 May, 2002.

17. Provisional patent 60/395,914, filed July 15, 2002 (PCT/US03/22038, filed July 14, 2003) entitled “Protein kinase modulators and methods of use thereof”, by P.M. Blumberg, H. Hennings, and A.P. Kozikowski.

18. Provisional patent 60/471,210 filed May 16, 2003 entitled “Vanilloid receptor antagonists, and methods of making and using them”, by A.P. Kozikowski, P.M. Blumberg, and A. Toth.

19. Provisional patent 60/558,003, filed March 26, 2004 entitled “Vanilloid receptor agonists”, by P.M. Blumberg and J. Lee

20. Provisional patent 60/572,126, filed May 19, 2004, entitled “Composition of matter and methods of use of fluorescent protein kinases”, by P.M. Blumberg and D. Braun

21. PCT/US2011/028132, filed March 11, 2011, entitled “Antagonist/agonist compositions and methods of use, by P.M. Blumberg and L.V. Pearce, filed as provisional patent 61/340,063, filed March 12. 2010.

BIBLIOGRAPHY

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2. Steiner, L. A. and Blumberg, P. M.: Mercury derivatives of the Fab and Fc fragments of a human myeloma protein. Biochemistry 10: 4727-4739, 1971.

3. Blumberg, P. M. and Strominger, J. L.: Inactivation of D-alanine carboxypeptidase by penicillins and cephalosporins is not lethal in Bacillus subtilis. Proc. Natl. Acad. Sci. USA 68: 28l4-28l7, l97l.

4. Strominger, J. L., Blumberg, P. M., Suginaka, H., Umbreit, J. and Wickus, G.: How penicillin kills bacteria - progress and problems. Proc. Roy. Soc. Lond. Ser. B l79: 369-383, l97l.

5. Suginaka, H., Blumberg, P. M. and Strominger, J. L.: Multiple penicillin binding components in Bacillus subtilis, Bacillus cereus, Staphylococcus aureus, and Escherichia coli. J. Biol. Chem. 247: 5279-5288, l972.

6. Blumberg, P. M. and Strominger, J. L.: Five penicillin binding components occur in membranes of Bacillus subtilis. J. Biol. Chem. 247: 8l07-8ll3, l972.

7. Blumberg, P. M. and Strominger, J. L.: Isolation by covalent affinity chromatography of the penicillin-binding components from membranes of Bacillus subtilis. Proc. Natl. Acad. Sci. USA 69: 375l-3755, l972.

8. Blumberg, P. M. and Strominger, J. L.: Covalent affinity chromatography as a means of purifying the penicillin binding components from bacterial membranes. Methods in Enzymology 34: 40l-405, l974.

9. Strominger, J. L., Willoughby, E., Kamiryo, T., Blumberg, P. M. and Yocum, R. R.: Penicillin sensitive enzymes and penicillin binding components in bacterial cells. Ann. NY Acad. Sci. 235: l0-224, l974.

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l2. Storm, D. R., Blumberg, P. M. and Strominger, J. L.: Inhibition of the Bacillus subtilis membrane-bound D-alanine carboxypeptidase by 6-amino- penicillanic acid covalently coupled to Sepharose. J. Bact. ll7: 783-785, l974.

l3. Anwar, R., Blumberg, P. M. and Strominger, J. L.: Penicillin binding components in Bacillus subtilis during sporulation. J. Bact. ll7: 924-925, l974.

l4. Sharpe, A., Blumberg, P. M. and Strominger, J. L.: D-alanine carboxy- peptidase and cell wall cross-linking in Bacillus subtilis. J. Bact. ll7: 926-927, l974.

l5. Yocum, R. R., Blumberg, P. M. and Strominger, J. L.: Purification and characterization of the thermophilic D-alanine carboxypeptidase from membranes of Bacillus stearothermophilus. J. Biol. Chem. 249: 4863-487l, l974.

l6. Blumberg, P. M., Yocum, R. R., Willoughby, E. and Strominger, J. L.: Binding of ^{14}C-penicillin G to the membrane-bound and the purified D-alanine carboxypeptidases from Bacillus subtilis and Bacillus stearothermophilus and its release. J. Biol. Chem. 249: 6829-6835, 1974.

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l8. Blumberg, P. M.: Penicillin binding components of Bacillus subtilis, Ph.D. Thesis, Harvard University, l974.

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22. Blumberg, P. M., Driedger, P. E. and Rossow, P. W.: Effect of a phorbol ester on a transformation-sensitive surface protein of chick fibroblasts. Nature 264: 446-447, l976.

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28. Driedger, P. E. and Blumberg, P. M.: Quantitative correlation between in vitro and in vivo activities of phorbol esters. Cancer Res. 9: 7l4-7l9, l979.

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