

Glen R. Nemerow, Ph.D.
Curriculum Vitae

Citizenship: USA

Work Address: The Scripps Research Institute
Department of Immunology
10550 North Torrey Pines Road
Maildrop IMM19
La Jolla, CA 92037

Education: B.S., Biology
Syracuse University, Syracuse, New York
June 1973

Ph.D., Microbiology and Immunology
University of Illinois, Chicago, IL
March 1979

Teaching Assistant, Department of Microbiology
University of Illinois, Chicago, IL
1975-1979

Postdoctoral Training, Department of Immunology
Scripps Clinic and Research Foundation
La Jolla, CA
1979-1983

Professional Record:

1983-1984	Senior Research Fellow, Department of Immunology Scripps Clinic and Research Foundation La Jolla, CA
1984-1990	Assistant Professor, Department of Immunology Scripps Clinic and Research Foundation La Jolla, CA
1991-1997	Associate Professor, Department of Immunology The Scripps Research Institute La Jolla, CA
1997-2006	Associate Professor (Tenured), Department of Immunology The Scripps Research Institute La Jolla, CA
2006-Present	Professor, Department of Immunology The Scripps Research Institute La Jolla, CA

Honors and Awards:

1975-1978 Graduate Student Teaching Assistantship, University of Illinois
1981-1983 Leukemia Society of America Fellowship
1983-1985 Leukemia Society of America Special Fellowship
1986-1990 Pew Scholars Award in the Biomedical Sciences

Recent Invited Lectures and Meetings:

ASM Foundation Lecturer, 1997-1999
2nd International Conference on Gene Therapy, Crete, Greece, 1998
Symposium on “Signaling and the Cytoskeleton”, Amgen Institute, Toronto, Canada, 1998
Gordon Conference (Viruses and Cells), Il Ciocco, Italy, 1999
ASV Symposium (19th annual meeting), Fort Collins, Colorado, 2000
FASEB Summer Conference “Microbial Pathogenesis”, Snowmass Village, Colorado, 2000
Seminar, University of Southern California, School of Medicine, Los Angeles, California, 2001
FASEB Summer Conference “Virus Assembly”, Saxtons River, Vermont, 2002
Gene Vectors Eurolab Course, Invited Speaker, Paris, France, 2002
Seminar, University of Virginia, School of Medicine, Charlottesville, Virginia, 2002
ASV Conference (Session Chair), University of California, Davis, California, 2003
50 Years of Adenoviridae (Session Chair), Montpellier, France, 2003
Seminar, McArdle Cancer Biology Series, Univ of Wisconsin, School of Medicine, Madison, Wisconsin 2003
Seminar, Harvard Medical School, Boston, Massachusetts, 2004
ASM Conference “Signal Transduction in Viral Systems” (Co-organizer), Savannah, Georgia, 2004
FASEB Summer Conference “Virus Assembly” (Session Chair), Saxtons River, Vermont, 2004
Seminar, Stanford University (SSRL laboratory), Stanford, California, 2004
Seminar, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania, 2005
EMBO Workshop “The Structural Basis of Papovavirus Biology”, Invited Speaker, Siena, Italy, 2005
Invited Symposium Speaker, American Society for Gene Therapy, St. Louis, Missouri, 2005
Seminar, Baylor College of Medicine, Houston, Texas, 2005
Seminar, University of Michigan Medical School, Ann Arbor, Michigan, 2006
International Adenovirus Meeting (Program Committee Member), Zurich, Switzerland, 2006
Invited Symposium Speaker, NIH Salzman Symposium, Bethesda, Maryland, 2006
Gordon Research Conference, Ventura, California, 2008
Seminar, University of California, Irvine, School of Medicine, Irvine, California 2009
International Adenovirus Meeting, Dobogókő, Hungary, 2009
Gene Therapy Seminar Series, Gene Therapy Center at University of Alabama, Birmingham, Alabama, 2009
Session Chair, Keystone Symposia on Molecular and Cellular Biology, Taos, New Mexico, 2010
Division Lecturer, ASM 110th General Meeting, San Diego, California, 2010

External Advisory:

Special Reviewer, NIH, Experimental Virology Study Section, 1991
Ad hoc Reviewer, NIH, Oral Biology and Medicine Study Section, 1995
Editorial Board, Trends in Microbiology, 1992-
Editorial Board, Immunopharmacology, 1995-
Editorial Board, Journal of Virology, 2004-2012
Editorial Board, Virology, 2010-2013
Ad hoc Reviewer, NIH, Recombinant DNA Advisory Committee (RAC), 1999, 2000, 2001
Ad hoc Reviewer, NSERC (Natural Sciences and Engineering Council of Canada), 2001-2002
Swedish Research Council (Receptor Biology), 2002
Ad hoc Reviewer, NIH, Visual Sciences “C” Study Section, 2002
Review Panel for NCI SPORE applications for Pancreatic Cancer, NIH, 2003
Recombinant DNA Advisory Committee (RAC), NIH, January 2004 – August 2007
Ad hoc Reviewer, NIH, Visual Sciences “A” Study Section, 2005
Editorial Board, Molecular Therapy, 2005-2008
Ad hoc Reviewer, NIH, Special Emphasis Panel, 2009

Institutional Administration:

Co-organizer Pathogenesis Affinity Group seminar series, 1993-1995, 2005-2007
Member of Immunology Appointments and Promotions Committee, 2001-2004, 2006-
TSRI Graduate Student Recruitment Committee 2000-
TSRI Fellowship Selection Committee, 2002-
TSRI Institutional Biosafety Committee (IBC), 2007- ; Chairman, 2009-

Professional Activities:

Charter Member, American Society for Virology (ASV), 1981-
Member, American Association of Immunologists (AAI), 1985-1991
Member, American Association for the Advancement of Science (AAAS), 1990-2009
Member, American Society for Cell Biology (ASCB), 1997-2005
Member, American Society for Microbiology (ASM), 1997-

Teaching Activities:

TSRI Kellogg School of Science & Technology, Course Director, Virology Elective Course, Spring 2007
TSRI Kellogg School of Science & Technology, Course Director, Virology Elective Course, Spring 2009

Publications:

1. **Nemerow, G.R.** Ph.D. Dissertation: Internal control mechanisms of the complement attack sequence. University of Illinois Medical Center, Chicago, Illinois, degree awarded March, 1979.
2. **Nemerow, G.R.**, Gewurz, H., Osofsky, S.G., and Lint, T.F. Inherited deficiency of the seventh component of complement: Propensity to formation of C5b and related C7-consuming activity. *J. Clin. Invest.* 61:1602-1610, 1978.
3. Lint, T.F., Osofsky, S.G., Gewurz, A., **Nemerow, G.R.**, and Gewurz, H. Recent experiences with patients having inborn deficiencies of the terminal complement components. *In: Clinical aspects of the complement system*. W. Opferkuch and K. Rother, eds. Georg Thieme, publisher, Stuttgart, pp. 206- 211, 1978.
4. **Nemerow, G.R.**, Yamamoto, K. and Lint, T.F. Restriction of complement mediated membrane damage by the eighth component of complement: A dual role for C8 in the complement attack sequence, *J. Immunol.* 123:1245-1252, 1979.
5. **Nemerow, G.R.** and Cooper, N.R. Isolation of Epstein-Barr virus and studies of its neutralization by human IgG and complement. *J. Immunol.* 127:272-278, 1981.
6. Cooper, N.R., Beebe, D.P., and **Nemerow, G.R.** Mechanisms of complement-dependent viral neutralization. *Immunopathol. VII Int. Symposium.* pp. 529-551, 1981.
7. **Nemerow, G.R.**, Jensen, F.C. and Cooper, N.R. Neutralization of Epstein-Barr virus (EBV) by nonimmune human serum: Role of cross-reacting antibody to herpes simplex virus (HSV-1) and complement (C). *J. Clin. Invest.* 70:1081-1091, 1982.
8. Cooper, N.R., **Nemerow, G.R.**, and Mayes, J.T. Methods to detect and quantitate complement activation. *Springer Sem. in Immunopathol.* 6:195-212, 1983.
9. Cooper, N.R. and **Nemerow, G.R.** Complement, viruses and virus infected cells. *Springer Seminars in Immunopathol.* 6:327-347, 1983.
10. **Nemerow, G.R.** and Cooper, N.R. Early events in infection of human B lymphocytes by Epstein-Barr virus: The internalization process. *Virology* 132:186-198, 1984.
11. Cooper, N.R. and **Nemerow, G.R.** The role of antibody in the control of viral infections. *J. Investig. Dermatology* 83:121s-127s, 1984.
12. **Nemerow, G.R.** and Cooper, N.R. Infection of human B lymphocytes by Epstein-Barr virus is blocked by calmodulin antagonists. *Proc. Nat'l Acad. Sci.* 81:4955- 4959, 1984.
13. **Nemerow, G.R.** and Cooper, N.R. The role of calmodulin in the infection of human B lymphocytes by Epstein-Barr virus. *Trans. of the Assoc. of Amer. Physicians* 97:232-241, 1984.
14. Cooper, N.R., and **Nemerow, G.R.** Complement effector mechanisms in health and disease. *J. Investig. Derm.* 85:39s-46s, 1985.
15. **Nemerow, G.R.**, Wolfert, R., McNaughton, M.E. and Cooper, N.R. Identification and characterization of the Epstein-Barr virus (EBV) receptor on human B lymphocytes and its relationship to the C3d complement receptor (CR2). *J. Virology* 55:347-351, 1985.
16. **Nemerow, G.R.**, McNaughton, M.E. and Cooper, N.R. Binding of monoclonal antibody to the Epstein-Barr virus (EBV)/CR2 receptor induced activation and differentiation of human B lymphocytes. *J. Immunol.* 135:3068-3073, 1985.
17. **Nemerow, G.R.**, McNaughton, M.E. and Cooper, N.R. Monoclonal antibody to the Epstein-Barr virus receptor induces human B lymphocyte activation and differentiation. *Trans. Assoc. Amer. Phys.* 98:290-300, 1985.

18. **Nemerow, G.R.**, Siaw, M.F.E. and Cooper, N.R. Purification of the Epstein-Barr virus/C3d receptor of human B lymphocytes: Antigenic and functional properties of the purified protein. *J. Virology* 58:709-712, 1986.
19. Mold, C., Cooper, N.R., and **Nemerow, G.R.** Incorporation of the purified Epstein- Barr virus/C3d receptor (CR2) into liposomes and demonstration of its dual ligand binding functions. *J. Immunol.* 136:4140-4145, 1986.
20. Siaw, M.F.E., **Nemerow, G.R.**, and Cooper, N.R. Biochemical and antigenic analysis of the Epstein-Barr virus/C3d receptor (CR2). *J. Immunol.* 136:4146-4151, 1986.
21. **Nemerow, G.R.**, Siaw, M.F.E. and Cooper, N.R. Biological significance of the EBV receptor on B lymphocytes. *In: Virus Attachment and Entry Into Cells* (R.L. Crowell and K. Lonberg-Holm, eds.) American Society of Microbiology Press, Washington, D.C. pp. 160-167, 1986.
22. Cooper, N.R. and **Nemerow, G.R.** Complement dependent mechanisms of virus neutralization. *In: Immunobiology of the Complement System*, (G. Ross, ed.), Academic Press, Inc., N.Y., pp. 139-162, 1986.
23. **Nemerow, G.R.**, Mold, C., Keivens Schwend, V., Tollefson, V. and Cooper, N.R. Identification of gp350 as the viral glycoprotein mediating attachment of Epstein-Barr virus (EBV) to the EBV/C3d receptor of B cells: Sequence homology of gp350 and the C3 complement fragment C3d. *J. Virology* 61:1416-1420, 1987.
24. **Nemerow, G.R.** and Cooper, N.R. Virus receptors on lymphoid cells. *In: Methods in Enzymology*. (G. DiSabato, J.J. Langone and H. vanVunakis, eds.), Academic Press, Inc., Orlando, FL. 84:9194-9198, 1987.
25. Moore, M.D., Cooper, N.R., Tack, B.F. and **Nemerow, G.R.** Molecular cloning of the cDNA encoding the Epstein-Barr virus/C3d receptor (CR2) of human B lymphocytes. *Proc. Natl Acad. Sci. U.S.A.* 84:9194-9198, 1987.
26. Cooper, N.R., Moore, M.D. and **Nemerow, G.R.** Immunobiology of CR2, the B lymphocyte receptor for Epstein-Barr virus and the C3d complement fragment. *Ann. Rev. Immunol.* 6:85-113, 1988.
27. Mold, C., **Nemerow, G.R.**, Bradt, B.M. and Cooper, N.R. CR2 is a complement activator and the covalent binding site for C3 during alternative pathway activation by Raji cells. *J. Immunol.* 140:1923-1929, 1988.
28. Mold, C., Bradt, B.M., **Nemerow, G.R.** and Cooper, N.R. Activation of the alternative complement pathway by Epstein-Barr virus and the viral envelope glycoprotein, gp350. *J. Immunol.* 140:3867-3874, 1988.
29. Mold, C., Bradt, B.M., **Nemerow, G.R.** and Cooper, N.R. Epstein-Barr virus regulates activation and processing of the third component of complement. *J. Exp. Med.* 68:949-969, 1988.
30. **Nemerow, G.R.**, Houghten, R.A., Moore, M.D. and Cooper, N.R. Identification of the epitope in the major envelope protein of Epstein-Barr virus that mediates viral binding to the B lymphocyte EBV receptor (CR2). *Cell* 56:369-377, 1989.
31. Cooper, N.R. and **Nemerow, G.R.** Complement and infectious agents: A tale of disguise and deception. *Complement and Inflammation* 6:249-258, 1989.
32. **Nemerow, G.R.**, Moore, M.D. and Cooper, N.R. Structure and function of the B lymphocyte Epstein-Barr virus/C3d receptor. *Adv. Cancer Res.* 54:273-300, 1990.
33. Moore, M.D., DiScipio, R.G., Cooper, N.R., and **Nemerow, G.R.** Hydrodynamic, electron microscopic and ligand binding studies of the Epstein-Barr virus/C3dg receptor (CR2). *J. Biol. Chem.* 264:20576-20582, 1989.
34. **Nemerow, G.R.**, Mullen, III, J.J., Dickson, P.W. and Cooper, N.R. Soluble recombinant CR2 (CD21) inhibits Epstein-Barr virus infection. *J. Virol.* 64:1348-1352, 1990.

35. Cooper, N.R., Bradt, B.M., Rhim, J.S. and **Nemerow, G.R.** The CR2 complement receptor. *J. Investig. Derm.* 64:2484-2490, 1990.
36. Moore, M.D., Cannon, M.J., Sewall, A., Finlayson, M., Okimoto, M. and **Nemerow, G.R.** Inhibition of Epstein-Barr virus infection in vitro and in vivo by soluble CR2 (CD21) containing two short consensus repeats. *J. Virology* 65:3559-3565, 1991.
37. Cooper, N.R., **Nemerow, G.R.** and Compton, T. Human herpesvirus receptors. *In: Biotechnology of Cell Regulation*, (R. Verna & Y. Nishizuka, eds.) Raven Press, New York, pp.135-152, 1991.
38. **Nemerow, G.R.** and Cooper, N.R. CR2 (CD21) mediated infection of B lymphocytes by Epstein-Barr virus. *Seminars in Virology* 3:117-124, 1992.
39. Stura, E.A., **Nemerow, G.R.**, and Wilson, I.A. Strategies in protein crystallization. *J. Crystal Growth* 122:273-285, 1992.
40. Wickham, T. and **Nemerow, G.R.** Optimization of growth methods and recombinant protein production in BTI-Tn-5B1-4 insect cells using the baculovirus expression system. *Biotechnol. Prog.* 9:25-30, 1993.
41. Wickham, T.J., Mathias, P., Cheresch, D.A. and **Nemerow, G.R.** Integrins $\alpha\beta 3$ and $\alpha\beta 5$ promote adenovirus internalization but not virus attachment. *Cell* 73:309-319, 1993.
42. **Nemerow, G.R.**, Wickham, T.J. and Cheresch, D.A. The role of $\alpha\nu$ integrins in adenovirus infection. *In: Biology of Vitronectins and Their Receptors*, (K.T.Preissner, S. Rosenblatt, C. Kost, J. Wegerhoff, D.F. Mosher, eds.), Amsterdam, The Netherlands, Elsevier Science Publishers, pp 177-184, 1993.
43. **Nemerow, G.R.**, Cheresch, D.A. and Wickham, T.J. Adenovirus entry into host cells: A role for $\alpha\nu$ integrins. *Trends in Cell Biology* 4:52-55, 1994.
44. **Nemerow, G.R.**, Luxembourg, A. and Cooper, N.R. CD21/CD2: Its role in EBV infection and immune function. *Epstein-Barr Virus Report* 1:59-64, 1994.
45. Mathias, P., Wickham, T., Moore, M. and **Nemerow, G.R.** Multiple adenovirus serotypes use $\alpha\nu$ integrins for infection. *J. Virol.* 68:6811-6814, 1994.
46. Wickham, T. J., Filardo, E.J., Cheresch, D.A. and **Nemerow, G.R.** Integrin $\alpha\beta 5$ selectively promotes adenovirus-mediated cell membrane permeabilization. *J. Cell Biol.* 127:257-264, 1994.
47. Huang, S., Endo, R.I. and **Nemerow, G.R.** Upregulation of integrins $\alpha\beta 3$ and $\alpha\beta 5$ on human monocytes and T lymphocytes promotes adenovirus-mediated gene delivery. *J. Virol.* 69:2257-2263, 1995.
48. Huang, S., Kamata, T., Takada, Y., Ruggeri, Z. and **Nemerow, G.R.** Adenovirus interaction with distinct integrins mediates separate events in cell entry and gene delivery to hematopoietic cells. *J. Virol.* 70: 4502-4508, 1996.
49. Stewart, P., Chiu, C., Huang, S., Muir, T., Zhao, Y., Chait, B., Mathias, P. and **Nemerow, G.R.** Cryo-EM visualization of an exposed RGD epitope on adenovirus that escapes antibody neutralization. *EMBO J.* 16:1189-1198, 1997.
50. Stewart, P.L and **Nemerow, G.R.** Recent structural solutions for antibody neutralization of viruses. *Trends in Microbiology* 5:229-233, 1997.
51. Huang, S., Jiang, Y., Li, Z., Mathias, P., Lin, S., Ulevitch, R.J., **Nemerow, G.R.** and Han, J. Apoptosis signaling pathways in T cells is composed of ICE/Ced-3 family proteases and MAP kinase 6b. *Immunity* 6:739-749, 1997.
52. Huang, S., Stupack, D., Mathias, P., Wang, Y. and **Nemerow, G.R.** Growth arrest of Epstein-Barr virus immortalized B lymphocytes by adenovirus delivered ribozymes. *Proc. Natl. Acad. Sci.* 94:8156-8161, 1997.

53. Li, E., Stupack, D., Cheresh, D., Klemke, R. and **Nemerow, G.R.** Adenovirus endocytosis via α v integrins requires phosphoinositide-3-OH kinase. *J. Virol.* 72:2055-2061, 1998.
54. Von Seggern, D. J., Kehler, J., Endo, R. and **Nemerow, G.R.** Complementation of a fibre mutant adenovirus by packaging cell lines stably expressing the Ad5 fibre protein. *J. Gen. Virol.* 79:1461-1468, 1998.
55. Wang, K., Huang, S., Kapoor-Munshi, A. and **Nemerow, G.R.** Adenovirus internalization and infection require dynamin. *J. Virol.* 72:3455-3458, 1998.
56. Li, E., Stupack, D., Bokoch, G. and **Nemerow, G.R.** Adenovirus endocytosis requires actin cytoskeleton reorganization mediated by Rho family GTPases. *J. Virol.* 72:8806-8812, 1998.
57. Mathias, P., Galleno, M. and **Nemerow, G.R.** Interactions of soluble recombinant integrin α v β 5 with human adenoviruses. *J. Virol.* 72:8669-8675, 1998.
58. Von Seggern, D.J., Chiu, C.Y., Fleck, S.K., Stewart, P.L. and **Nemerow, G.R.** A helper-independent adenovirus vector with E1, E3, and Fiber deleted: Structure and infectivity of fiberless particles. *J. Virol.* 73:1601-1608, 1999.
59. Huang, S., Reddy, V., Dasgupta, N. and **Nemerow, G.R.** A single amino acid in the adenovirus type 37 fiber confers binding to human conjunctival cells. *J. Virol.* 73:2798-2802, 1999.
60. Stupack, D.G., Li, E., Kehler, J.A., Geahlen, R.L., Hahn, K., **Nemerow, G.R.** and Cheresh, D.A. Matrix valency regulates integrin-mediated lymphoid adhesion via Syk-kinase. *J. Cell Biol.* 144:777-787, 1999.
61. Chiu, C.Y., Mathias, P., **Nemerow, G.R.** and Stewart, P.L. Structure of adenovirus complexed with its internalization receptor, α v β 5 integrin. *J. Virol.* 73:6759-6768, 1999.
62. Pampori, N., Hato, T., Stupack, D.R., Aidoudi, S., Cheresh, D.A., **Nemerow, G.R.** and Shattil, S.J. Mechanisms and consequences of affinity modulation of integrin α v β 3 detected with a novel patch-engineered monovalent ligand. *J. Biol. Chem.* 274: 21609-21616, 1999.
63. Von Seggern, D.J., Huang, S., Fleck, S.K., Stevenson, S.C. and **Nemerow, G.R.** Adenovirus vector pseudotyping in fiber-expressing cell lines: Improved transduction of EBV-transformed B cells. *J. Virol.* 74:354-362, 2000.
64. Saphire, A., Guan, T., Schirmer, E., **Nemerow, G.R.** and Gerace, L. Nuclear import of adenovirus DNA in vitro involves the nuclear protein import pathway and Hsc70. *J. Biol. Chem.* 275:4298-4304, 2000.
65. Wang, K., Guan, T., Cheresh, D. and **Nemerow, G.R.** Regulation of adenovirus membrane penetration by the cytoplasmic tail of integrin β 5. *J. Virol.* 74:2731-2739, 2000.
66. Li, E., Stupack, D.G., Brown, S.L., Klemke, R., Schlaepfer, D.D. and **Nemerow, G.R.** Association of p130cas with phosphatidylinositol 3-OH-kinase mediates adenovirus cell entry. *J. Biol. Chem.* 275:14729-14735, 2000.
67. Huang, S., Stupack, D.G., Liu, A., Cheresh, D. and **Nemerow, G.R.** Cell growth and matrix invasion of EBV-immortalized human B lymphocytes is regulated by expression of α v integrins. *Oncogene* 19:1915-1923, 2000.
68. Xia, Y., Makris, C., Su, B., Li, E., Yang, J., **Nemerow, G.R.** and Karin, M. MEK kinase 1 is critically required for JNK activation by proinflammatory stimuli and in growth factor induced cell migration. *Proc. Natl. Acad. Sci. U.S.A.* 97:5243-5248, 2000.
69. Li, E., Brown, S.L., Von Seggern, D.J., Brown, G.B. and **Nemerow, G.R.** Signaling antibodies complexed with adenovirus circumvent CAR and integrin interactions and improve gene delivery. *Gene Therapy* 7:1593-1599, 2000.

70. Huang, S., New, L., Pan, Z., Han, J., and **Nemerow, G.R.** Urokinase Plasminogen Activator/Urokinase-specific Surface Receptor Expression and Matrix Invasion by Breast Cancer Cells Requires Constitutive p38 Mitogen-activated Protein Kinase Activity. *J Biol Chem* 275(16):12266-12272, 2000.
71. Wu, E., Fernandez, J., Fleck, S.K., Von Seggern, D.J., Huang, S. and **Nemerow, G.R.** A 50 kDa membrane protein mediates sialic acid-independent binding and infection of conjunctival cells by adenovirus type 37. *Virology* 279:78-89, 2001.
72. Jakubczak, J.L., Rollence, M.L., Stewart, D.A., Jafari, J.D., Von Seggern, D.J., **Nemerow, G.R.**, Stevenson, S.C. and Hallenbeck, P.L. Adenovirus type 5 particles pseudotyped with mutagenized fiber proteins show diminished infectivity of Coxsackie B-adenovirus receptor-bearing cells. *J. Virol.* 75:2972-2981, 2001.
73. Li, E., Brown, S.L., Brown, G.B. and **Nemerow, G.R.** Production of functional antibodies generated in a nonlytic insect cell expression system. *Protein Expression and Purification* 21:121-128, 2001.
74. Chiu, C.Y., Wu, E., Von Seggern, D.J., **Nemerow, G.R.** and Stewart, P.L. Structural analyses of a fiber-Pseudotyped adenovirus with ocular tropism suggests differential modes of cell receptor interaction. *J. Virol.* 75:5375-5380, 2001.
75. Li, E., Brown, S.L., Stupack, D.G., Puente, X.S. Cheresh, D.A. and **Nemerow, G.R.** Integrin $\alpha v \beta 1$ is a co-receptor for adenovirus infection. *J. Virol.* 75:5405-5409, 2001.
76. Nicklin, S.A., Von Seggern, D.J., Wok, L.M., Pek, D.C.K., Dominicak, A.F., **Nemerow, G.R.** and Baker, A.H. Ablating adenovirus type 5 fiber-CAR and HI loop insertion of the SIGYPIP peptide generates an endothelial cell-selective adenovirus. *Molecular Therapy* 4:534-542, 2001.
77. Wodrich, H., Guan, T., Cingolani, G., Von Seggern, D.J., **Nemerow, G.R.** and Gerace, L. Switch from capsid protein to adenovirus assembly by cleavage of nuclear transport signals. *EMBO J.* 22:6245-6255, 2003.
78. Smith, T.A.G., Idamakanti, N., Rollance, M.L., Marshall-Neff, J., Kim, J., Mulgrew, K., **Nemerow, G.R.**, Kaleko, M. and Stevenson, S.C. Adenovirus serotype 5 fiber shaft influences in vivo gene transfer in mice. *Human Gene Therapy* 14:777-787, 2003.
79. Hsia, D.A., Hauck, C.R., Mitra, S.K., Strebblow, D.N., Nelson, J.A., Ilic, D., Li, E., **Nemerow, G.R.**, Leng, J., Cheresh, D.A. and Schlaepfer, D.D. Differential regulation of cell motility and invasion by FAK. *J. Cell Biol.* 160:753-767, 2003.
80. Wu, E., Pache, L., Von Seggern, D.J., Mullen, T., Mikyas, Y., Stewart, P.L., and **Nemerow, G.R.** Flexibility of the adenovirus fiber protein is required for efficient receptor interaction. *J. Virology* 77:7225-7235, 2003.
81. Nicklin, S.A., Dishart, K.L., Buening, H., Reynolds, P.N., Hallek, M., **Nemerow, G.R.**, Von Seggern, D.J. and Baker, A.H. Transductional and transcriptional targeting of cancer cells using genetically engineered viral vectors. *Cancer Letters* 201:165-173, 2003.
82. Von Seggern, D.J., Aguilar, E. H., Kinder, K., Fleck, S.K., Summers, R., Arams, J.C., Stevenson, S.C., **Nemerow, G.R.**, and Friedlander, M. In Vivo Transduction of Photoreceptors or Ciliary body by Intravitreal Injection of Pseudotyped Adenoviral Vectors. *Molecular Therapy*, 7:27-34, 2003.
83. Wu, E., Pache, L., Mullen, T., Trauger, S.A, Bark, S.B., Siuzdak, G. and **Nemerow, G.R.** Membrane cofactor protein is a receptor for adenoviruses associated with epidemic keratoconjunctivitis. *J. Virology* 78:3897-3905, 2004.
84. Trauger, S.A., Wu, E., Bark, S.J., **Nemerow, G.R.**, and Siuzdak, G. The identification of an adenovirus receptor by using affinity capture and mass spectrometry. *Chembiochem* 5:1095-1099, 2004.
85. Wiethoff, C.M., Wodrich, H., Gerace, L. and **Nemerow, G.R.** Adenovirus protein VI mediates membrane disruption following capsid disassembly. *J. Virology* 79:1992-2000, 2005.

86. Hsu, C., Boysen, M., Gritton, L.D., Frosst, P.D., **Nemerow, G.R.** and Von Seggern, D.J. In vitro dendritic cell infection by pseudotyped adenoviral vectors does not correlate with their in vivo immunogenicity. *Virology* 332:1-7, 2005.
87. Saban, S.D., Nepomuceno, R.R., Gritton, L.D., **Nemerow, G.R.**, and Stewart, P.L. (Co-Corresponding author). CryoEM structure at 9Å resolution of an adenovirus vector targeted to hematopoietic cells. *J. Mol. Biol.* 349:526-537, 2005.
88. Horne, W.S, Wiethoff, C.M., Cui, C., Wilcoxon, K.M., Amorin, M., Ghadiri, M.R. and **Nemerow, G.R.** Antiviral cyclic D,L- α -peptides: Targeting a general biochemical pathway in virus infections. *J. Bioorganic and Medicinal Chemistry* 13:5145-5153, 2005.
89. Martinez, M., Nepomuceno, R., Connolly, J. and **Nemerow, G.R.** CD46-utilizing adenoviruses inhibit C/EBP β -dependent expression of proinflammatory cytokines. *Journal Of Virology* 17:11259–11268, 2005. (*highlighted in the Editor's Spotlight*)
90. Maginnis, M.S., Forrest, J.C., Kopecky-Bromberg, S.A., Dickeson, S.K., Santoro, S.A., Zutter, M.M., **Nemerow, G.R.**, Bergelson, J.M. and Dermody, T.S. β 1 integrin mediates internalization of mammalian reovirus. *Journal of Virology* (80)6:2760-2770, 2006.
91. Wodrich, H., Cassany, A., d'Angelo, M., Guan, T., **Nemerow, G.R.**, and Gerace, L. Adenovirus core protein pVII is translocated into the nucleus by multiple import receptor pathways. *J. Virol.* 80: 9608-9618, 2006.
92. Saban, S.D., Silvestry, M., **Nemerow, G.R.**, and Stewart, P.L. Visualization of α -helices in a 6Å resolution cryoEM structure of adenovirus allows refinement of capsid protein assignments. *J. Virol.* 80: 12049-12059, 2006.
93. Martinez, M. and **Nemerow, G.R.** Preferential activation of toll-like receptor nine (TLR9) by CD46-utilizing adenoviruses. *J. Virology*, 81:1305-1312, 2007.
94. Nepomuceno, R., Pache, L. and **Nemerow, G.R.** Enhancement of gene transfer to human myeloid cells by adenovirus-fiber complexes. *Molecular Therapy* 15:571–578, 2007.
95. Smith J.G., and **Nemerow G.R.** Mechanism of adenovirus neutralization by human α -defensins. *Cell Host Microbe*, 3(1):11-19, 2008.
96. Pache L., Venkataraman S., **Nemerow G.R.**, and Reddy V.S. Conservation of fiber structure and CD46 usage by subgroup B2 adenoviruses. *Virology*. 2008 Jun 5;375(2):573-9.
97. Smith J.G., Cassany A., Gerace L., Ralston R., and **Nemerow G.R.** Neutralizing antibody blocks adenovirus infection by arresting microtubule-dependent cytoplasmic transport. *J Virol.* 2008 Jul;82(13):6492-500. PMID: PMC2447115
98. Pache L., Venkataraman, S., Reddy, V.S., and **Nemerow, G.R.** Structural variations in species B adenovirus fibers impact CD46 association. *J Virol.* 2008 Aug;82(16):7923-31. PMID: PMC2519554
99. Lai, C-Y, Wiethoff, C.M., Kickhoefer, V., Rome, L.H, and **Nemerow, G.R.** Vault nanoparticles containing an adenovirus-derived membrane lytic protein facilitate toxin and gene transfer. *ACS Nano.* 2009 Mar 24;3(3):691-9.
100. Silvestry M., Lindert S., Smith J.G., Maier O., Wiethoff C.M., **Nemerow G.R.**, Stewart PL. Cryoelectron microscopy structure of the adenovirus type 2 temperature-sensitive mutant 1 reveals insight into the cell entry defect. *J Virol.* 2009 Aug;83(15):7375-83.
101. Lindert S., Silvestry M., Mullen T.M., Nemerow G.R., Stewart P.L. CryoEM structure of an adenovirus-integrin complex indicates conformational changes in both penton base and integrin. *J Virol.* 2009 Nov;83(22):11491-501.

102. Nguyen E.K., **Nemerow G.R.**, Smith J.G. Direct evidence from single-cell analysis that human alpha-defensins block adenovirus uncoating to neutralize infection. *J Virol.* 2010 Feb 3.

Recent Reviews, Commentary and Book Chapters:

103. Von Seggern, D.J. and **Nemerow, G.R.** Adenoviral vectors for protein expression. *In: Gene Expression Systems: Using Nature for the Art of Expression*. Academic Press Publications pp 111-156, 1998.
104. **Nemerow, G.R.** and Stewart, P.L. The role of α v integrins in adenovirus cell entry and gene delivery. *Microbiology and Molecular Biology Reviews* 63:725-734, 1999.
105. **Nemerow, G.R.** Adenoviral vectors-new insights. *Trends in Microbiology* 8:391-393, 2000.
106. **Nemerow, G.R.** Cell receptors involved in adenovirus cell entry. *Virology* 274:1-4, 2000.
107. **Nemerow, G.R.** Biology of adenovirus cell entry. *In Adenoviral Vectors for Gene Therapy*. (D. Curiel J. Douglas Eds.) Academic Press, Publishers, San Diego, CA, pgs 19-38, 2002.
108. Stewart, P.L., Dermody, T., and **Nemerow, G.R.** Structural basis of nonenveloped virus cell entry: Virus structure. (W. Chiu and J.E. Johnson Eds.). Academic Press Publishers, San Diego, CA Vol. 64: pp 455-484, 2003.
109. **Nemerow, G.R.** and Stewart, P.L. Antibody neutralization epitopes and integrin binding sites on non-enveloped viruses. *Virology* 288:189-191, 2001.
110. **Nemerow G.R.** and Cheresch, D.A. Herpesvirus hijacks an integrin. *Nature Cell Biology* 4:69-71, 2002.
111. Bloomer, L.S. and **Nemerow, G.R.** Control of communicable and certain non-infectious diseases: *In Environmental Engineering and Sanitation*. John Wiley and Sons.
112. Goosney, D.L., and **Nemerow, G.R.** Adenovirus infection: Taking the back roads to viral entry. *Current Biology* 13:R99-R100, 2004.
113. Wu, E., and **Nemerow, G.R.** Virus Yoga: The role of flexibility in virus host cell recognition. *Trends in Microbiology* 12:162-169, 2004.
114. Nicklin, S.A., Wu, E., **Nemerow, G.R.**, and Baker, A.H. The influence of adenovirus fiber structure and function on vector development for gene therapy. *Molecular Therapy* 12: 384-393, 2005.
115. Stewart, P.L. and **Nemerow, G.R.** Cell Integrins: commonly used receptors of diverse viral pathogens. *Trends in Microbiology* 15:500-7, 2007.
116. **Nemerow, G.R.**, Pache, L., Reddy, V.S., and Stewart, P.L. Insights into adenovirus host cell interactions from structural studies. *Virology* 384:380-388, 2009.
117. **Nemerow, G.R.** A new link between virus cell entry and inflammation: Adenovirus interaction with integrins induces specific proinflammatory responses. *Molecular Therapy* 17(9):1490-1, 2009.

Patents

1. "Targeting And Delivery Of Genes And Antiviral Agents Into Cells By The Adenovirus Penton." Nemerow, Wickham. Serial Number 94/01263/Patent Number WO 94/17832/Issue Date 8/18/94.
2. "Packaging Cell Lines, Adenovirus Vectors, and Methods of Using Same." Von Seggern, Nemerow. Serial Number EP 97/05251/Patent Number WO 98/13499/Issue Date 4/2/98.
3. "Vectors For Ocular Transduction And Use Thereof For Genetic Therapy" Nemerow, Von Seggern, Friedlander. Serial Number EP01/04863/Patent Number WO 01/083729/Issue Date 11/8/01.
4. "Bifunctional Molecules and Vectors Complexed Therewith For Targeted Gene Delivery." Nemerow, Li. Serial Number EP01/07878/Patent Number WO 02/004522/Issue Date 1/17/02.
5. "Modified Fiber Proteins for Efficient Receptor Binding" Nemerow, Wu, Stewart. Serial Number 04/018623/Patent Number WO 04/111251/Issue Date 12/23/04.
6. "Fiber Shaft Modifications for Efficient Targeting" Kaleko, Nemerow, Smith, Stevenson. Serial Number 03732097.5/Patent Number 1516055/Issue Date 3/23/05.
7. "Adenovirus Vectors, Packaging Cell Lines, Compositions, and Methods for Preparation and Use". Von Seggern, Nemerow, Hallenback, Stevenson, Skripchenko. Serial Number 09/482,682/Patent Number 7,232,899/Issue Date 6/19/07.