

6. References

- Alberts, B, Johnson, A, Lewis, J., Raff, M., Roberts, K., Walter, P. *Molecular Biology of the Cell*. 4th ed. New York: Garland Publishing; 2002.
- Alkhatib G, Combadiere C, Broder CC, Feng Y, Kennedy PE, Murphy PM, Berger EA. CC CKR5: a RANTES, MIP-1alpha, MIP-1beta receptor as a fusion cofactor for macrophage-tropic HIV-1. *Science* 1996, 272 (5270):1955-8.
- Anderson MM, Lauring AS, Robertson S, Dirks C, Overbaugh J. Feline Pit2 functions as a receptor for subgroup B feline leukemia viruses. *J. Virol.* 2001, 75 (22):10563-72.
- Arita I. Farewell to smallpox vaccination. *Dev. Biol. Stand.* 1979, 43:283-296.
- Armbruster C, Stiegler GM, Vcelar BA, Jager W, Koller U, Jilch R, Ammann CG, Pruenster M, Stoiber H, Katinger HW. Passive immunization with the anti-HIV-1 human monoclonal antibody (hMAb) 4E10 and the hMAb combination 4E10/2F5/2G12. *J. Antimicrob. Chemother.* 2004, 54(5):915-20.
- Armbruster C, Stiegler GM, Vcelar BA, Jager W, Michael NL, Vetter N, Katinger HW. A phase I trial with two human monoclonal antibodies (hMAb 2F5, 2G12) against HIV-1. *AIDS* 2002, 16(2):227-33.
- Baba TW, Jeong YS, Pennick D, Bronson R, Greene MF, Ruprecht RM. Pathogenicity of live, attenuated SIV after mucosal infection of neonatal macaques. *Science* 1995, 267(5205):1820-5.
- Baba TW, Liska V, Hofmann-Lehmann R, Vlasak J, Xu W, Ayehunie S, Cavacini LA, Posner MR, Katinger H, Stiegler G, Bernacky BJ, Rizvi TA, Schmidt R, Hill LR, Keeling ME, Lu Y, Wright, JE, Chou TC, Ruprecht RM. Human neutralizing monoclonal antibodies of the IgG1 subtype protect against mucosal simian-human immunodeficiency virus infection. *Nat Med.* 2000, 6: 200-206.
- Bechtel MK, Mathes LE, Hayes KA, Phipps AJ, Roy-Burman P. In vivo evolution and selection of recombinant feline leukemia virus species, *Virus Res.* 1998, 54: 71-86.
- Benit L, Dessen P, Heidmann T. Identification, phylogeny, and evolution of retroviral elements based on their envelope genes. *J. Virol.* 2001, 75(23):11709-19.
- Buchacher A, Predl R, Strutzenberger K, Steinfellner W, Trkola A, Purtscher M, Gruber G, Tauer C, Steindl F, Jungbauer A, et al. Generation of human monoclonal antibodies against HIV-1 proteins; electrofusion and Epstein-Barr virus transformation for peripheral blood lymphocyte immortalization. *AIDS Res Hum Retroviruses.* 1994, 10(4):359-69.

Büscher K, Trefzer U, Hofmann M, Sterry S, Kurth R, Denner J. Expression of the human endogenous retrovirus HERV-K in melanomas and melanoma cell lines. *Cancer Res.* 2005, 65:4172-80.

Carmichael A, Jin X, Sissons P, and Borysiewicz L. Quantitative analysis of the human immunodeficiency virus type 1 (HIV-1)-specific cytotoxic T lymphocyte (CTL) response at different stages of HIV-1 infection: differential CTL responses to HIV-1 and Epstein-Barr virus in late disease. *J. Exp. Med.* 1993, 177:249–256.

Chan DC, Fass D, Berger JM, Kim PS. Core structure of gp41 from the HIV envelope glycoprotein. *Cell* 1997, 89(2):263-73.

Chang TL, Vargas J Jr, DelPortillo A, Klotman ME. Dual role of alpha-defensin-1 in anti-HIV-1 innate immunity. *J. Clin. Invest.* 2005, 115(3):765-73.

Cianciolo GJ, Copeland TD, Oroszlan S, Snyderman R. Inhibition of lymphocyte proliferation by a synthetic peptide homologous to retroviral envelope proteins. *Science* 1985, 230:453-5.

Cohen J. Weakened SIV vaccine still kills. *Science* 1997,278(5335):24-5.

Conley AJ, Kessler JA 2nd, Boots LJ, Tung JS, Arnold BA, Keller PM, Shaw AR, Emini EA. Neutralization of divergent human immunodeficiency virus type 1 variants and primary isolates by IAM-41-2F5, an anti-gp41 human monoclonal antibody. *Proc Natl. Acad. Sci. U S A.* 1994, 91(8):3348-52.

Copeland KF, McKay PJ, Rosenthal KL. Suppression of activation of the human immunodeficiency virus long terminal repeat by CD8+ T cells is not lentivirus specific. *AIDS Res Hum Retroviruses.* 1995, 11(11):1321-6.

De Rocquigny H, Gabus C, Vincent A, Fournie-Zaluski MC, Roques B, Darlix JL. Viral RNA annealing activities of human immunodeficiency virus type 1 nucleocapsid protein require only peptide domains outside the zinc fingers. *Proc. Natl. Acad. Sci. U S A.* 1992, 89(14):6472-6.

de Rosny E, Vassell R, Jiang S, Kunert R. and Weiss CD. Binding of the 2F5 monoclonal antibody to native and fusion-intermediate forms of human immunodeficiency virus type 1 gp41: implications for fusion-inducing conformational changes. *J. Virol.* 2004, 78:2627-2631.

Denner J, Norley S, Kurth R. The immunosuppressive peptide of HIV-1: functional domains and immune response in AIDS patients. *AIDS* 1994, 8(8):1063-72.

Denner J. Immunosuppression by oncogenic retroviridae. In: Zschiesche, W., editor, *Modulation of the Immune Responsiveness by Infectious Agents*, Fischer Verlag, Jena 1987, 140–201.

Denner J. Immunosuppression by retroviruses: implications for xenotransplantation. *Ann. N. Y. Acad. Sci.* 1998, 862:75-86.

- Dianzani F, Antonelli G, Riva E, Turriziani O, Antonelli L, Tyring S, Carrasco DA, Lee H, Nguyen D, Pan J, Poast J, Cloyd M, Baron S. Is human immunodeficiency virus RNA load composed of neutralized immune complexes? *J. Infect. Dis.* 2002, 185 (8):1051-4.
- Dubay JW, Roberts SJ, Hahn BH, Hunter E. Truncation of the human immunodeficiency virus type 1 transmembrane glycoprotein cytoplasmic domain blocks virus infectivity. *J. Virol.* 1992, 66(11):6616-25.
- Eckert DM, Kim PS. Mechanisms of viral membrane fusion and its inhibition. *Annu. Rev. Biochem.* 2001, 70:777-810.
- Elder JH, McGee JS, Munson M, Houghten RA, Kloetzer W, Bittle JL and Grant CK.. Localization of neutralizing regions of the envelope gene of feline leukemia virus by using anti-synthetic peptide antibodies. *J. Virol.* 1987, 61:8-15.
- Evans DT, Desrosiers RC. Immune evasion strategies of the primate lentiviruses. *Immunol Rev.* 200, 183:141-58.
- Feng Y, Broder CC, Kennedy PE, Berger EA. HIV-1 entry cofactor: functional cDNA cloning of a seven-transmembrane, G protein-coupled receptor. *Science* 1996, 272(5263):872-7.
- Ferrantelli F, Hofmann-Lehmann R, Rasmussen RA, Wang T, Xu W, Li PL, Montefiori DC, Cavacini LA, Katinger H, Stiegler G, Anderson DC, McClure HM, Ruprecht RM. Post-exposure prophylaxis with human monoclonal antibodies prevented SHIV89.6P infection or disease in neonatal macaques. *AIDS* 2003,17(3):301-9.
- Fiebig U, Stephan O, Kurth R, and Denner J. Neutralizing antibodies against conserved domains of p15E of porcine endogenous retroviruses: basis for a vaccine for xeno-transplantation? *Virology* 2003, 307:406-413.
- Flynn JN, Dunham SP, Watson V, Jarrett O. Longitudinal analysis of feline leukemia virus-specific cytotoxic T lymphocytes: correlation with recovery from infection. *J. Virol.* 2002, 76(5):2306-15.
- Flynn JN, Hanlon L, Jarrett O. Feline leukaemia virus: protective immunity is mediated by virus-specific cytotoxic T lymphocytes. *Immunology*, 2000, 101:120-5
- Follis KE, Larson SJ, Lu M, Nunberg JH. Genetic evidence that interhelical packing interactions in the gp41 core are critical for transition of the human immunodeficiency virus type 1 envelope glycoprotein to the fusion-active state. *J. Virol.* 2002, 76:7356-62.
- Freed EO, Martin MA. The role of human immunodeficiency virus type 1 envelope glycoproteins in virus infection. *J. Biol. Chem.* 1995, 270(41):23883-6.

- Gallaher WR, Ball JM, Garry RF, Griffin MC, Montelaro RC. A general model for the transmembrane proteins of HIV and other retroviruses. *AIDS Res. Hum. Retroviruses* 1989, 5(4):431-40.
- Gallo SA, Finnegan CM, Viard M, Raviv Y, Dimitrov A, Rawat SS, Puri A, Durell S, Blumenthal R. The HIV Env-mediated fusion reaction. *Biochim. Biophys. Acta* 2003, 1614:36-50.
- Goh WC, Rogel ME, Kinsey CM, Michael SF, Fultz PN, Nowak MA, Hahn BH, Emerman M. HIV-1 Vpr increases viral expression by manipulation of the cell cycle: a mechanism for selection of Vpr in vivo. *Nat. Med.* 1998, 4(1):65-71.
- Golding H, Zaitseva M, de Rosny E, King LR, Manischewitz J, Sidorov I, Gorny MK, Zolla-Pazner S, Dimitrov DS, Weiss CD. Dissection of human immunodeficiency virus type 1 entry with neutralizing antibodies to gp41 fusion intermediates. *J. Virol.* 2002, 76:6780-90.
- Grant CK, de Noronha F, Tusch C, Michalek MT, McLane MF. Protection of cats against progressive fibrosarcomas and persistent leukemia virus infection by vaccination with feline leukemia cells. *J. Natl. Cancer Inst.* 1980, 65:1285-92.
- Greenough TC, Brettler DB, Somasundaran M, Panicali DL, Sullivan JL. Human immunodeficiency virus type 1-specific cytotoxic T lymphocytes (CTL), virus load, and CD4 T cell loss: evidence supporting a protective role for CTL in vivo. *J Infect Dis.* 1997, 176(1):118-25.
- Haley PJ, Hoover EA, Quackenbush SL, Gasper PW, Macy DW. Influence of antibody infusion on pathogenesis of experimental feline leukemia virus infection. *J. Natl. Cancer Inst* 1985, 74:821-7.
- Hanlon L, Argyle D, Bain D, Nicolson L, Dunham S, Golder MC, McDonald M, McGillivray C, Jarrett O, Neil JC, Onions DE. Feline leukemia virus DNA vaccine efficacy is enhanced by coadministration with interleukin-12 (IL-12) and IL-18 expression vectors. *J. Virol.* 2001, 75(18):8424-33.
- Harbour DA, Gunn-Moore DA, Gruffydd-Jones TJ, Caney SM, Bradshaw J, Jarrett O, Wiseman A. Protection against oronasal challenge with virulent feline leukaemia virus lasts for at least 12 months following a primary course of immunisation with Leukocell 2 vaccine. *Vaccine* 2002, 20: 2866-2872.
- Hardy WD Jr, McClelland AJ, Zuckerman EE, Snyder HW Jr, MacEwen EG, Francis D, Essex M. Development of virus non-producer lymphosarcomas in pet cats exposed to FeLV. *Nature* 1980, 288:90-2.
- Hardy WD. (1993) Feline oncoretroviruses. In : Levy JA (editor) *The retroviridae*, vol.2, Plenum Press, New York, 109-180.

- Harrer T, Harrer E, Kalams SA, Elbeik T, Staprans SI, Feinberg MB, Cao Y, Ho DD, Yilma T, Caliendo AM, Johnson RP, Buchbinder SP, Walker BD. Strong cytotoxic T cell and weak neutralizing antibody responses in a subset of persons with stable nonprogressing HIV type 1 infection. *AIDS Res. Hum. Retroviruses*. 1996, 12(7):585-92.
- Haynes BF, Fleming J, St Clair EW, Katinger H, Stiegler G, Kunert R, Robinson J, Searce RM, Plonk K, Staats HF, Ortel TL, Liao HX, Alam SM. Cardioplipin polyspecific autoreactivity in two broadly neutralizing HIV-1 antibodies. *Science* 2005, 308(5730):1906-8. Epub 2005 Apr 28.
- Hebebrand LC, Olsen RG, Mathes LE, Nichols WS. Inhibition of human lymphocyte mitogen and antigen response by a 15,000-dalton protein from feline leukemia virus. *Cancer Res*. 1979, 39:443-7.
- Hines DL, Cutting JA, Dietrich D, Walsh JA Evaluation of efficacy and safety of an inactivated virus vaccine against feline leukemia virus infection. *J. Am. Vet. Med. Ass.* 1991, 199:1428-30.
- Ho J, Uger RA, Zwick MB, Luscher MA, Barber BH, MacDonald KS. Conformational constraints imposed on a pan-neutralizing HIV-1 antibody epitope result in increased antigenicity but not neutralizing response. *Vaccine* 2005 18; 23(13):1559-73.
- Hofmann-Lehmann R, Holznagel E, Ossent P, Lutz H. Parameters of disease progression in long-term experimental feline retrovirus (feline immunodeficiency virus and feline leukaemia virus) infections: hematology, clinical chemistry, and lymphocyte subsets. *Clin. Diagn. Lab. Immunol.* 1997, 4:33-42.
- Hofmann-Lehmann R, Vlasak J, Rasmussen RA, Jiang S, Li PL, Baba TW, Montefiori DC, Bernacky BJ, Rizvi TA, Schmidt R, Hill LR, Keeling ME, Katinger H, Stiegler G, Cavacini LA, Posner MR, Ruprecht RM. Postnatal pre- and postexposure passive immunization strategies: protection of neonatal macaques against oral simian-human immunodeficiency virus challenge. *J. Med. Primatol.* 2002, 31(3):109-19.
- Hofmann-Lehmann R, Huder JB, Gruber S, Boretti F, Sigrist B, Lutz H. Feline leukaemia provirus load during the course of experimental infection and in naturally infected cats. *J Gen Virol.* 2001, 82(Pt 7):1589-96.
- Hofmann-Lehmann R, Tandon R, Boretti FS, Meli ML, Willi B, Cattori V, Gomes-Keller MA, Ossent P, Golder MC, Flynn JN, Lutz H. Reassessment of feline leukaemia virus (FeLV) vaccines with novel sensitive molecular assays. *Vaccine*, 2005. [Epub ahead of print]
- Hoover EA, Mullins JI, Chu H-J, Wasmoen TL. Efficacy of an inactivated feline leukaemia virus vaccine. *AIDS Res. Hum. Retroviruses* 1996, 12:379-83.
- Hoover EA, Olsen RG, Hardy WD Jr, Schaller JP, and Mathes LE Feline leukemia virus infection: Age-related variation in response of cats to experimental fractions. *Int. J. Cancer* 1978, 22:351-357.

- Hoover EA, Olsen RG, Hardy WD Jr, Schaller JP. Horizontal transmission of feline leukemia virus under experimental conditions. *J. Natl. Cancer Inst.* 1977, 58:443-4.
- Hoover EA, Schaller JP, Mathes LE, Olsen RG. Passive immunity to feline leukemia: evaluation of immunity from dams naturally infected and experimentally vaccinated. *Infect Immun.* 1977, 16:54-9
- Jarrett O, Ganière JP Comparative studies of the efficacy of a recombinant feline leukaemia virus vaccine. *Vet. Rec.* 1996, 138:7-11.
- Jarrett O, Hardy WD, Golder MC, and Hay D: The frequency of occurrence of feline leukemia virus subgroups in cats. *Int. J. Cancer* 1978, 21:334-337.
- Jarrett O, Russell PH, Stewart MF. Protection of kittens from feline leukaemia virus infection by maternally-derived antibody. *Vet. Rec.* 1977, 101:304-5.
- Jarrett O. Feline leukaemia virus neutralising antibodies. *Vet. Rec.* 2001, 149(20):632.
- Joyce JG, Hurni WM, Bogusky MJ, Garsky VM, Liang X, Citron MP, Danzeisen RC, Miller MD, Shiver JW, Keller PM. Enhancement of alpha -helicity in the HIV-1 inhibitory peptide DP178 leads to an increased affinity for human monoclonal antibody 2F5 but does not elicit neutralizing responses in vitro. Implications for vaccine design. *J. Biol. Chem.* 2002, 277(48):45811-20. Erratum in: *J. Biol. Chem.* 2003, 278(7):5492.
- Karpas A. Human retroviruses in leukaemia and AIDS: reflections on their discovery, biology and epidemiology. *Biol. Rev. Camb. Philos. Soc.* 2004, (4):911-33. Review.
- Kijak GH, Simon V, Balfe P, Vanderhoeven J, Pampuro SE, Zala C, Ochoa C, Cahn P, Markowitz M, Salomon H. Origin of human immunodeficiency virus type 1 quasispecies emerging after antiretroviral treatment interruption in patients with therapeutic failure. *J. Virol.* 2002, 76(14):7000-9.
- Kitabwalla M, Ferrantelli F, Wang T, Chalmers A, Katinger H, Stiegler G, Cavacini LA, Chou TC, Ruprecht RM. Primary African HIV clade A and D isolates: effective cross-clade neutralization with a quadruple combination of human monoclonal antibodies raised against clade B. *AIDS Res Hum Retroviruses.* 2003, 19(2):125-31.
- Kleiser C., Schneider J., Bayer H., Hunsmann G., Immunoprevention of Friend leukaemia virus-induced erythroleukaemia by vaccination with aggregated gp70, *J. Gen. Virol.* 1986, 67:1901-1907.
- Kottlilil S, et al.. Innate immunity in human immunodeficiency virus infection: effect of viremia on natural killer cell function. *J. Infect. Dis.* 2003, 187:1038–1045.

- Kramer B, Pelchen-Matthews A, Deneka M, Garcia E, Piguet V, Marsh M. HIV interaction with endosomes in macrophages and dendritic cells. *Blood Cells Mol. Dis.* 2005, (2):136-42.
- Kunert R, Ruker F, Katinger H. Molecular characterization of five neutralizing anti-HIV type 1 antibodies: identification of nonconventional D segments in the human monoclonal antibodies 2G12 and 2F5. *AIDS Res. Hum. Retroviruses.* 1998, 14(13):1115-28.
- Kunert R, Ruker F, Katinger H. Molecular characterization of five neutralizing anti-HIV type 1 antibodies: identification of nonconventional D segments in the human monoclonal antibodies 2G12 and 2F5. *AIDS Res. Hum. Retroviruses.* 1998, 14 (13):1115-28.
- Kunert R, Steinfeldner W, Purtscher M, Assadian A, Katinger H. Stable recombinant expression of the anti HIV-1 monoclonal antibody 2F5 after IgG3/IgG1 subclass switch in CHO cells. *Biotechnol. Bioeng.* 2000, 67(1):97-103.
- Kunert RE, Weik R, Ferko B, Stiegler G, Katinger H. Anti-idiotypic antibody Ab2/3H6 mimics the epitope of the neutralizing anti-HIV-1 monoclonal antibody 2F5. *AIDS* 2002, 16(4):667-8.
- Kwong PD, Doyle ML, Casper DJ, Cicala C, Leavitt SA, Majeed S, Steenbeke TD, Venturi M, Chaiken I, Fung M, Katinger H, Parren PW, Robinson J, Van Ryk D, Wang L, Burton DR, Freire E, Wyatt R, Sodroski J, Hendrickson WA, Arthos J. HIV-1 evades antibody-mediated neutralization through conformational masking of receptor-binding sites. *Nature.* 2002, 420(6916):678-82.
- Kwong PD, Wyatt R, Robinson J, Sweet RW, Sodroski J, Hendrickson WA. Structure of an HIV gp120 envelope glycoprotein in complex with the CD4 receptor and a neutralizing human antibody. *Nature.* 1998, 393(6686):648-59.
- Lehner T. Innate and adaptive mucosal immunity in protection against HIV infection. *Vaccine* 2003, 21(Suppl. 2):68-76.
- Lemieux P. Technological advances to increase immunogenicity of DNA vaccines. *Expert. Rev. Vaccines.* 2002, 1(1):85-93.
- Levy JA, Mackewicz CE, Barker E. Controlling HIV pathogenesis: the role of the noncytotoxic anti-HIV response of CD8+ T cells. *Immunol. Today.* 1996 , 17(5):217-24.
- Levy JA, Scott I, Mackewicz C. Protection from HIV/AIDS: the importance of innate immunity. *Clin. Immunol.* 2003a, 108(3):167-74.
- Levy JA. The search for the CD8+ cell anti-HIV factor (CAF). *Trends Immunol.* 2003b, 24(12):628-32.

- Li A, Baba TW, Sodroski J, Zolla-Pazner S, Gorny MK, Robinson J, Posner MR, Katinger H, Barbas CF 3rd, Burton DR, Chou TC, Ruprecht RM. Synergistic neutralization of a chimeric SIV/HIV type 1 virus with combinations of human anti-HIV type 1 envelope monoclonal antibodies or hyperimmune globulins. *AIDS Res. Hum. Retroviruses* 1997, 13(8):647-56.
- Liao M, Lu Y, Xiao Y, Dierich M P, and Chen Y. Induction of high level of specific antibody response to the neutralizing epitope ELDKWA on HIV-1 gp41 by peptide-vaccine. *Peptides* 2000, 21:463-8.
- Lopez C, Fitzgerald PA, Siegal FP. Severe acquired immune deficiency syndrome in male homosexuals: diminished capacity to make interferonalpha in vitro associated with severe opportunistic infections. *J. Infect. Dis.* 1983, 148(6):962-6.
- Löwer R, Löwer, J., Kurth, R. The viruses in all of us: characteristics and biological significance of human endogenous retrovirus sequences. *PNAS* 1996, 93:5177-84.
- Lu Y, Xiao Y, Ding J, Dierich M P, and Chen YH. Multiepitope vaccines intensively increased levels of antibodies recognizing three neutralizing epitopes on human immunodeficiency virus-1 envelope protein. *Scand. J. Immunol.* 2000, 51:497-501.
- Luo M, Yuan F, Liu Y, Jiang S, Song X, Jiang P, Yin X, Ding M, Deng H. Induction of neutralizing antibody against human immunodeficiency virus type 1 (HIV-1) by immunization with gp41 membrane-proximal external region (MPER) fused with porcine endogenous retrovirus (PERV) p15E fragment. *Vaccine*. 2005 [Epub ahead of print]
- Mackewicz CE, Ortega HW, and Levy JA. CD8+ cell anti-HIV activity correlates with the clinical state of the infected individual. *J. Clin. Invest.* 1991, 87:1462–1466.
- Mackewicz CE, Yang LC, Lifson JD, and Levy JA. Non-cytolytic CD8 T-cell anti-HIV responses in primary HIV-1 infection. *Lancet* 1994, 344:1671–1673.
- Madewell BR, Jarrett O. Recovery of feline leukaemia virus from non-viraemic cats. *Vet. Rec.* 1983, 112:339-42.
- Markovic I, Clouse KA. Recent advances in understanding the molecular mechanisms of HIV-1 entry and fusion: revisiting current targets and considering new options for therapeutic intervention. *Curr. HIV Res.* 2004, 2(3):223-34. Review.
- Mascola JR, Louder MK, VanCott TC, Sapan CV, Lambert JS, Muenz LR, Bunow B, Birx DL, Robb ML. Potent and synergistic neutralization of human immunodeficiency virus (HIV) type 1 primary isolates by hyperimmune anti-HIV immunoglobulin combined with monoclonal antibodies 2F5 and 2G12. *J. Virol.* 1997, 71(10):7198-206.

Mascola JR, Stiegler G, VanCott TC, Katinger H, Carpenter CB, Hanson CE, Beary H, Hayes D, Frankel SS, Birx DL, Lewis MG. Protection of macaques against vaginal transmission of a pathogenic HIV-1/SIV chimeric virus by passive infusion of neutralizing antibodies. *Nat. Med.* 2000, 6(2):207-10.

Mathes LE, Olsen RG, Hebebrand LC, Hoover EA, Schaller JP, Adams PW, Nichols WS. Immunosuppressive properties of a virion polypeptide, a 15,000-dalton protein, from feline leukemia virus. *Cancer Res.* 1979, 39:950-5.

McCann CM, Song RJ, Ruprecht RM. Antibodies: can they protect against HIV infection? *Curr. Drug Targets Infect. Disord.* 2005, 5(2):95-111.

McDougal JS, Maddon PJ, Dalgleish AG, Clapham PR, Littman DR, Godfrey M, Maddon DE, Chess L, Weiss RA, Axel R. The T4 glycoprotein is a cell-surface receptor for the AIDS virus. *Cold Spring Harb. Symp. Quant. Biol.* 1986, 51 Pt 2:703-11.

McGaughey GB, Citron M, Danzeisen RC, Freidinger RM, Garsky VM, Hurni WM, Joyce JG, Liang X, Miller M, Shiver J, Bogusky MJ. HIV-1 vaccine development: constrained peptide immunogens show improved binding to the anti-HIV-1 gp41 MAbs. *Biochemistry* 2003, 42(11):3214-23.

McMichael AJ, Hanke T. HIV vaccines 1983-2003. *Nat. Med.* 2003, 9(7):874-80.

Medzhitov R, Janeway CA Jr. Innate immune induction of the adaptive immune response. *Cold Spring Harb. Symp. Quant. Biol.* 1999, 64:429-35.

Mehle A, Strack B, Ancuta P, Zhang C, McPike M, Gabuzda D. Vif overcomes the innate antiviral activity of APOBEC3G by promoting its degradation in the ubiquitin-proteasome pathway. *J. Biol. Chem.* 2003.

Muster T, Guinea R, Trkola A, Purtscher M, Klima A, Steindl F, Palese P, Katinger H. Cross-neutralizing activity against divergent human immunodeficiency virus type 1 isolates induced by the gp41 sequence ELDKWAS. *J. Virol.* 1994, 68(6):4031-4.

Muster T, Steindl F, Purtscher M, Trkola A, Klima A, Himmler G, Rucker F, Katinger H. A conserved neutralizing epitope on gp41 of human immunodeficiency virus type 1. *J. Virol.* 1993, 67(11):6642-7.

Muster T, Waltenberger A, Grassauer A et al. An endogenous retrovirus derived from human melanoma cells. *Cancer Res.* 2003, 63:8735-41.

Nara PL, Smit L, Dunlop N, Hatch W, Merges M, Waters D, Kelliher J, Gallo RC, Fischinger PJ, Goudsmit J. Emergence of viruses resistant to neutralization by V3-specific antibodies in experimental human immunodeficiency virus type 1 IIIB infection of chimpanzees. *J. Virol.* 1990, 64(8):3779-91.

- Nick S, Klawns J, Friebe K, Birr C, Hunsmann G, Bayer H. Virus neutralizing and enhancing epitopes characterized by synthetic oligopeptides derived from the feline leukaemia virus glycoprotein sequence. *J. Gen. Virol.* 1990, 71, 77-83.
- O'Donovan LH, McMonagle EL, Taylor S, Bain D, Pacitti AM, Golder MC, McDonald M, Hanlon L, Onions DE, Argyle DJ, Jarrett O, Nicolson L. A vector expressing feline mature IL-18 fused to IL-1beta antagonist protein signal sequence is an effective adjuvant to a DNA vaccine for feline leukaemia virus. *Vaccine* 2005, 23:3814-23.
- Osterhaus A, Weijer K, Uytdehaag F, Jarrett O, Sundquist B, Morein B. Induction of protective immune response in cats by vaccination with feline leukemia virus iscom. *J. Immunol.* 1985, 135(1):591-6.
- Osterhaus A, Weijer K, UytdeHaag F, Knell P, Jarrett O, Akerblom L, Morein B. Serological responses in cats vaccinated with FeLV ISCOM and an inactivated FeLV vaccine. *Vaccine* 1989, 7:137-41.
- Overbaugh J, Miller AD, Eiden MV. Receptors and entry cofactors for retroviruses include single and multiple transmembrane-spanning proteins as well as newly described glycoposphatidylinositol-anchored and secreted proteins. *Microbiol. Mol.Biol. Rev.* 2001, 65(3):371-89.Review.
- Pacitti AM, Jarrett O. Duration of the latent state in feline leukaemia virus infections. *Vet. Rec.* 1985, 117:472-4.
- Parren PW, Moore JP, Burton DR, Sattentau QJ. The neutralizing antibody response to HIV-1: viral evasion and escape from humoral immunity. *AIDS.* 1999, 13 Suppl A:137-62.
- Peeters M, Sharp PM. Genetic diversity of HIV-1: the moving target. *AIDS.* 2000, 14 Suppl 3:129-40.
- Peterlin BM, Trono D. Hide, shield and strike back: how HIV-infected cells avoid immune eradication. *Nat. Rev. Immunol.* 2003, 3(2):97-107. Review.
- Pollock RVH, Haffer KN Review of the first feline leukaemia virus vaccine. *J. Am .Vet.Med. Ass.* 1991, 199:1406-9.
- Preston BD, Poiesz BJ, Loeb LA. Fidelity of HIV-1 reverse transcriptase. *Science* 1988, 242(4882):1168-71.
- Pu R, Coleman J, Coisman J, Sato E, Tanabe T, Arai M, Yamamoto JK. Dual-subtype FIV vaccine (Fel-O-Vax FIV) protection against a heterologous subtype B FIV isolate. *J Feline Med Surg.* 2005, 7:65-70
- Purtscher M, Trkola A, Grassauer A, Schulz PM, Klima A, Dopfer S, Gruber G, Buchacher A, Muster T, Katinger H. Restricted antigenic variability of the epitope recognized by the neutralizing gp41 antibody 2F5. *AIDS* 1996, 10(6):587-93.

Purtscher M, Trkola A, Gruber G, Buchacher A, Predl R, Steindl F, Tauer C, Berger R, Barrett N, Jungbauer A, et al. A broadly neutralizing human monoclonal antibody against gp41 of human immunodeficiency virus type 1. *AIDS Res. Hum. Retroviruses*. 1994, 10(12):1651-8.

Ratner L, Haseltine W, Patarca R, Livak KJ, Starcich B, Josephs SF, Doran ER, Rafalski JA, Whitehorn EA, Baumeister K, Ivanoff L, Petteway SR Jr, Pearson ML, Lautenberger JA, Papas TS, Ghayeb J, Chang NT, Gallo RC and Wong-Staal F. Complete nucleotide sequence of the AIDS virus, HTLV-III. *Nature* 1985, 313(6000): 277-284.

Reitz MS Jr, Wilson C, Naugle C, Gallo RC, Robert-Guroff M. Generation of a neutralization-resistant variant of HIV-1 is due to selection for a point mutation in the envelope gene. *Cell*. 1988, 54(1):57-63.

Rinaldo C, Huang XL, Fan ZF, Ding M, Beltz L, Logar A, Panicali D, Mazzara G, Liebmann J, Cottrill M, et al. High levels of anti-human immunodeficiency virus type 1 (HIV-1) memory cytotoxic T-lymphocyte activity and low viral load are associated with lack of disease in HIV-1-infected long-term nonprogressors. *J. Virol*. 1995, 69(9):5838-42.

Roberts JD, Bebenek K, Kunkel TA. The accuracy of reverse transcriptase from HIV-1. *Science*. 1988, 242 (4882):1171-3.

Rojko JL, Hardy WD. Feline leukemia virus. In: Sherding RG, editor. *The cat: diseases and clinical management*. 2nd ed. Churchill Livingstone, New York, 1994. p. 263–432.

Ruppach H, Nara P, Raudonat I, Elanjikal Z, Rubsamen-Waigmann H, Dietrich U. Human immunodeficiency virus (HIV)-positive sera obtained shortly after seroconversion neutralize autologous HIV type 1 isolates on primary macrophages but not on lymphocytes. *J Virol*. 2000, 74 (12):5403-11.

Ruprecht RM, Ferrantelli F, Kitabwalla M, Xu W, McClure HM. Antibody protection: passive immunization of neonates against oral AIDS virus challenge. *Vaccine* 2003, 21(24):3370-3.

Russel PH and Jarrett O. The occurrence of feline leukemia virus neutralizing antibodies in cats. *Int. J. Cancer* 1978, 22:351-357.

Salzwedel K, Berger EA. Cooperative subunit interactions within the oligomeric envelope glycoprotein of HIV-1: functional complementation of specific defects in gp120 and gp41. *Proc. Natl. Acad. Sci. U S A*. 2000, 97(23):12794-9.

Sattentau QJ, Moore JP, Vignaux F, Traincard F, Pognard P. Conformational changes induced in the envelope glycoproteins of the human and simian immunodeficiency viruses by soluble receptor binding. *J. Virol*. 1993, 67:7383-93.

- Schwarz H, Thiel HJ, Weinhold KJ, Bolognesi DP, Schafer W. Stimulation of immunoreactivity against endogenous retroviruses and protection against leukemia in aged AKR mice after vaccination with antibodies to viral surface components. The role of antibodies to p15(E). *Z. Naturforsch* 1984, [C] 39:1199-1202.
- Siegal FP, Lopez C, Fitzgerald PA, Shah K, Baron P, Leiderman IZ, Imperato D, Landesman S. Opportunistic infections in acquired immune deficiency syndrome result from synergistic defects of both the natural and adaptive components of cellular immunity. *J. Clin. Invest.* 1986, 78(1):115-23.
- Sparkes AH. Feline leukemia virus: a review of immunity and vaccination. *J. Small Anim. Pract.* 1997, 38:187-194.
- Stevenson M. HIV-1 pathogenesis. *Nat Med.* 2003, 9, 853-60
- Stiegler G, Armbruster C, Vcelar B, Stoiber H, Kunert R, Michael NL, Jagodzinski LL, Ammann C, Jager W, Jacobson J, Vetter N, Katinger H. Antiviral activity of the neutralizing antibodies 2F5 and 2G12 in asymptomatic HIV-1-infected humans: a phase I evaluation. *AIDS* 2002, 16 (15):2019-25.
- Strack B, Calistri A, Craig S, Popova E, Gottlinger HG. AIP1/ALIX is a binding partner for HIV-1 p6 and EIAV p9 functioning in virus budding. *Cell* 2003, 114 (6):689-99.
- Tacke S, Kurth R and Denner J. Porcine endogenous retroviruses inhibit human immune cell function: risk for xenotransplantation? *Virology* 2000;268:87-93.
- Tacke SJ, Bodusch K, Berg A, Denner J. Sensitive and specific immunological detection methods for porcine endogenous retroviruses applicable to experimental and clinical xenotransplantation. *Xenotransplantation* 2001, 8:125-35.
- Tandon R, Cattori V, Gomes-Keller MA, Meli ML, Golder MC, Lutz H, Hofmann-Lehmann R. Quantitation of feline leukaemia virus viral and proviral loads by TaqMan((R)) real-time polymerase chain reaction. *J Virol Methods.* 2005, 130(1-2):124-32.
- Thiel HJ, Schwarz H, Fischinger P, Bolognesi D, and Schäfer W. Role of antibodies to murine leukemia virus p15E transmembrane protein in immunotherapy against AKR leukemia: a model for studies in human acquired immunodeficiency syndrome, *Proc. Natl. Acad. Sci. U.S.A* 1987,84: 5893-5897.
- Tian H, Xiao Y, Zhu M, and Chen YH. HIV epitope-peptides in aluminum adjuvant induced high levels of epitope-specific antibodies. *Int. Immunopharmacol.* 2001, 1:763-8.

- Trkola A, Pomales AB, Yuan H, Korber B, Maddon PJ, Allaway GP, Katinger H, Barbas CF 3rd, Burton DR, Ho DD, et al. Cross-clade neutralization of primary isolates of human immunodeficiency virus type 1 by human monoclonal antibodies and tetrameric CD4-IgG. *J. Virol.* 1995, 69 (11):6609-17.
- Turner BG, Summers MF. Structural biology of HIV. *J. Mol. Biol.* 1999, 285 (1):1-32.
- Turpin JA. The next generation of HIV/AIDS drugs: novel and developmental antiHIV drugs and targets. *Expert Rev. Anti Infect. Ther.* 2003, 1(1):97-128. Review.
- Walker, BD, and Plata F.. Cytotoxic T lymphocytes against HIV. *AIDS* 1990; 4:177-184.
- Watkins BA, Buge S, Aldrich K, Davis AE, Robinson J, Reitz MS Jr, Robert-Guroff M. Resistance of human immunodeficiency virus type 1 to neutralization by natural antisera occurs through single amino acid substitutions that cause changes in antibody binding at multiple sites. *J. Virol.* 1996, 70(12):8431-7.
- Watson A, Ranchalis J, Travis B, McClure J, Sutton W, Johnson PR, Hu SL, Haigwood NL. Plasma viremia in macaques infected with simian immunodeficiency virus: plasma viral load early in infection predicts survival. *J Virol.* 1997, 71(1):284-90.
- Wei X, Decker JM, Wang S, Hui H, Kappes JC, Wu X, Salazar-Gonzalez JF, Salazar MG, Kilby JM, Saag MS, Komarova NL, Nowak MA, Hahn BH, Kwong PD, Shaw GM. Antibody neutralization and escape by HIV-1. *Nature* 2003, 422(6929):307-12.
- Weijer K, Pfauth A, van Herwijnen R, Jarrett O, Meloen RH, Tomee C, Osterhaus AD. Induction of feline leukaemia virus-neutralizing antibodies by immunization with synthetic peptides derived from the FeLV env gene. *Vaccine* 1993, 11(9):946-56.
- Weiss CD. HIV-1 gp41: mediator of fusion and target for inhibition. *AIDS Rev.* 2003, 5(4):214-21.
- Weissenhorn W, Calder LJ, Dessen A, Laue T, Skehel JJ, Wiley DC. Assembly of a rod-shaped chimera of a trimeric GCN4 zipper and the HIV-1 gp41 ectodomain expressed in *Escherichia coli*. *Proc. Natl. Acad. Sci. U. S. A* 1997, 94(12):6065-9.
- Weissenhorn W, Dessen A, Harrison SC, Skehel JJ, Wiley DC. Atomic structure of the ectodomain from HIV-1 gp41. *Nature* 1997, 387(6631):426-30.
- Zhang H, Huang Y, Fayad R, Spear GT, and Qiao L. Induction of mucosal and systemic neutralizing antibodies against human immunodeficiency Virus type 1 (HIV-1) by oral immunization with bovine papillomavirus-HIV-1 gp41 chimeric virus-like particles *J. Virol.* 2004, 78: 8342-8348.

Zwick MB, Labrijn AF, Wang M, Spenlehauer C, Saphire EO, Binley JM, Moore JP, Stiegler G, Katinger H, Burton DR, Parren PW. Broadly neutralizing antibodies targeted to the membrane-proximal external region of human immunodeficiency virus type 1 glycoprotein gp41. *J. Virol.* 2001b, 75(22):10892-905.

Zwick MB, Wang M, Poignard P, Stiegler G, Katinger H, Burton DR, Parren PW. Neutralization synergy of human immunodeficiency virus type 1 primary isolates by cocktails of broadly neutralizing antibodies. *J. Virol.* 2001a, 75(24):12198-208.