

References

- Abbas, A., Lichtman, A., Pillai, S., & Baker, D. (2016). *Basic immunology*.
- Amara, R., Nigam, P., Sharma, S., Liu, J., & Bostik, V. (2004). Long-Lived Poxvirus Immunity, Robust CD4 Help, and Better Persistence of CD4 than CD8 T Cells. *Journal Of Virology*, 78(8), 3811-3816.
- Appay, V., Zaunders, J., Papagno, L., Sutton, J., Jaramillo, A., & Waters, A. et al. (2002). Characterization of CD4+ CTLs Ex Vivo. *The Journal Of Immunology*, 168(11), 5954-5958.
- Bachmann, M. and Oxenius, A., 2007. Interleukin 2: from immunostimulation to immunoregulation and back again. *EMBO reports*, 8(12), pp.1142-1148.
- Bastian, M., Braun, T., Bruns, H., Röllinghoff, M., & Stenger, S. (2008). Mycobacterial Lipopeptides Elicit CD4+ CTLs in *Mycobacterium tuberculosis*-Infected Humans. *The Journal Of Immunology*, 180(5), 3436-3446.
- Bras G. The morbid anatomy of smallpox, Doc Med Geogr Trop, 1952, vol. 4 (pg. 303-51)
- Bray, M. (2003). Pathogenesis and potential antiviral therapy of complications of smallpox vaccination. *Antiviral Research*, 58(2), 101-114.
- Bray, M., & Buller, M. (2004). Looking Back at Smallpox. *Clinical Infectious Diseases*, 38(6), 882-889.
- Bratke, K., Kuepper, M., Bade, B., Virchow, J. and Luttmann, W., 2005. Differential expression of human granzymes A, B, and K in natural killer cells and during CD8+ T cell differentiation in peripheral blood. *European Journal of Immunology*, 35(9), pp.2608-2616.
- Buller, R. M., & Palumbo, G. J. (1991). Poxvirus pathogenesis. *Microbiological reviews*, 55(1), 80–122.
- Chan, D., Gibson, H., Aufiero, B., Wilson, A., Hafner, M., Mi, Q. and Wong, H., 2013. Differential CTLA-4 expression in human CD4+ versus CD8+ T cells is associated with increased NFAT1 and inhibition of CD4+ proliferation. *Genes & Immunity*, 15(1), pp.25-32.
- Chertow, D., & Kindrachuk, J. (2020). Influenza, Measles, SARS, MERS, and Smallpox. *Highly Infectious Diseases In Critical Care*, 69-96.
- Cooper, N. and Nemerow, G., 1984. The Role of Antibody and Complement in the Control of Viral Infections. *Journal of Investigative Dermatology*, 83(s1), pp.121s-127s.

- Dalma-Weiszhausz, D., Warrington, J., Tanimoto, E., & Miyada, C. (2006). [1] The Affymetrix GeneChip® Platform: An Overview. *Methods In Enzymology*, 3-28.
- Dienz, O. and Rincon, M., 2009. The effects of IL-6 on CD4 T cell responses. *Clinical Immunology*, 130(1), pp.27-33.
- Demkowicz, W., & Ennis, F. (1993). Vaccinia virus-specific CD8+ cytotoxic T lymphocytes in humans. *Journal Of Virology*, 67(3), 1538-1544.
- Diven, D. (2001). An overview of poxviruses. *Journal Of The American Academy Of Dermatology*, 44(1), 1-16.
- Dixon, C. (1948). Smallpox in Tripolitania, 1946: an epidemiological and clinical study of 500 cases, including trials of penicillin treatment. *Epidemiology And Infection*, 46(4), 351-377.
- Ebert, L. and McColl, S., 2002. Up-Regulation of CCR5 and CCR6 on Distinct Subpopulations of Antigen-Activated CD4+ T Lymphocytes. *The Journal of Immunology*, 168(1), pp.65-72.
- Eisen, M., & Brown, P. (1999). [12] DNA arrays for analysis of gene expression. *Methods In Enzymology*, 179-205.
- Engler, R., Kenner, J., & Leung, D. (2002). Smallpox vaccination: Risk considerations for patients with atopic dermatitis. *Journal Of Allergy And Clinical Immunology*, 110(3), 357-365.
- Ennis, F., Cruz, J., Demkowicz, Jr., W., Rothman, A., & McClain, D. (2002). Primary Induction of Human CD8+Cytotoxic T Lymphocytes and Interferon- γ -Producing T Cells after Smallpox Vaccination. *The Journal Of Infectious Diseases*, 185(11), 1657-1659.
- Epstein, C. (2000). Microarray technology — enhanced versatility, persistent challenge. *Current Opinion In Biotechnology*, 11(1), 36-41.
- Fenner, F., Henderson, D. A., Arita, I., Jezek, Z., & Ladnyi, I. D. (1988). *Smallpox and its eradication* (Vol. 6). Geneva: World Health Organization.
- Geginat, J., Paroni, M., Maglie, S., Alfen, J., Kastirr, I., Gruarin, P., De Simone, M., Pagani, M. and Abrignani, S., 2014. Plasticity of Human CD4 T Cell Subsets. *Frontiers in Immunology*, 5.
- Glynn, I., & Glynn, J. (2004). *The life and death of smallpox*. Cambridge University Press

Good, R., Zak, S., Condie, R., & Bridges, R. (1960). Clinical Investigation of Patients with Agammaglobulinemia and Hypogammaglobulinemia. *Pediatric Clinics Of North America*, 7(2), 397-433.

Gould, J., Getz, G., Monti, S., Reich, M. and Mesirov, J., 2006. Comparative gene marker selection suite. *Bioinformatics*, 22(15), pp.1924-1925.

Hammarlund, E., Lewis, M., Hansen, S., Strelow, L., Nelson, J., Sexton, G., Hanifin, J. and Slifka, M., 2003. Duration of antiviral immunity after smallpox vaccination. *Nature Medicine*, 9(9), pp.1131-1137.

Henderson, D., & Preston, R. (2009). *Smallpox: The Death of a Disease - The Inside Story of Eradicating a Worldwide Killer*. Prometheus Books.

Hotchkiss RS, Karl IE. The pathophysiology and treatment of sepsis, N Engl J Med, 2003, vol. 348 (pg. 138-50)

Jolliffe, I., 1986. Principal Component Analysis. New York, NY: Springer New York.

Juno, J., van Bockel, D., Kent, S., Kelleher, A., Zaunders, J., & Munier, C. (2017). Cytotoxic CD4 T Cells—Friend or Foe during Viral Infection?. *Frontiers In Immunology*, 8.

Kallioniemi, A., Kallioniemi, O., Sudar, D., Rutovitz, D., Gray, J., Waldman, F., & Pinkel, D. (1992). Comparative genomic hybridization for molecular cytogenetic analysis of solid tumors. *Science*, 258(5083), 818-821.

Kuehn, H., Liberzon, A., Reich, M. and Mesirov, J., 2008. Using GenePattern for Gene Expression Analysis. *Current Protocols in Bioinformatics*, 22(1), pp.7.12.1-7.12.39.

Kutzler, M., Ugen, K., & Weiner, D. Smallpox: Pathogenesis and Host Immune Responses Relevant to Vaccine and Therapeutic Strategies. *Microorganisms And Bioterrorism*, 63-81.

Lander, E. S., Linton, L. M., Birren, B., Nusbaum, C., Zody, M. C., Baldwin, J., Devon, K., Dewar, K., Doyle, M., FitzHugh, W., Funke, R., Gage, D., Harris, K., Heaford, A., Howland, J., Kann, L., Lehoczky, J., LeVine, R., McEwan, P., McKernan, K., Meldrim, J., Mesirov, J. P., Miranda, C., Morris, W., Naylor, J., Raymond, C., Rosetti, M., Santos, R., Sheridan, A., Sougnez, C., Stange-Thomann, N., Stojanovic, N., Subramanian, A., Wyman, D., Rogers, J., Sulston, J., Ainscough, R., Beck, S., Bentley, D., Burton, J., Clee, C., Carter, N., Coulson, A., Deadman, R., Deloukas, P., Dunham, A., Dunham, I., Durbin, R., French, L., Grafham, D.,

Gregory, S., Hubbard, T., Humphray, S., Hunt, A., Jones, M., Lloyd, C., McMurray, A., Matthews, L., Mercer, S., Milne, S., Mullikin, J. C., Mungall, A., Plumb, R., Ross, M., Shownkeen, R., Sims, S., Waterston, R. H., Wilson, R. K., Hillier, L. W., McPherson, J. D., Marra, M., A., Mardis, E., R., Fulton, L., Chinwalla, A. T., Pepin, K. H., Gish, W. R., Chissoe, S. L., Wendl, M. C., Delehaunty, K. D., Miner, T., Delehaunty, A., Kramer, J. B., Cook, L. L., Fulton, R. S., Johnson, D. L., Minx, P. J., Clifton, S. W., Hawkins, T., Branscomb, E., Predki, P., Richardson, P., Wenning, S., Slezak, T., Doggett, N., Cheng, J. F., Olsen, A., Lucas, S., Elkin, C., Uberbacher, E., Frazier, M., et al. (2001). Initial Sequencing and analysis of the human genome. *Nature* 409, 860–921.

Lipshutz, R., Fodor, S., Gingeras, T., & Lockhart, D. (1999). High density synthetic oligonucleotide arrays. *Nature Genetics*, 21(S1), 20-24.

Littaua, R., Takeda, A., Cruz, J., & Ennis, F. (1992). Vaccinia virus-specific human CD4+ cytotoxic T-lymphocyte clones. *Journal Of Virology*, 66(4), 2274-2280.

Liu, H., Bebu, I., & Li, X. (2010). Microarray probes and probe sets. *Frontiers In Bioscience*, E2(1), 325-338.

Loddenkemper, R., Lipman, M., & Zumla, A. (2015). Clinical Aspects of Adult Tuberculosis. *Cold Spring Harbor Perspectives In Medicine*, 6(1), a017848.

Miller, G. (1957). *The adoption of inoculation for smallpox in England and France*. Univ. of Pennsylvania Press.

McClain, D., Harrison, S., Yeager, C., Cruz, J., Ennis, F., & Gibbs, P. et al. (1997). Immunologic Responses to Vaccinia Vaccines Administered by Different Parenteral Routes. *The Journal Of Infectious Diseases*, 175(4), 756-763.

Munier, C., van Bockel, D., Bailey, M., Ip, S., Xu, Y., & Alcantara, S. et al. (2016). *The primary immune response to Vaccinia virus vaccination includes cells with a distinct cytotoxic effector CD4 T-cell phenotype*. Retrieved 18 April 2020, from.

Ohtaki, M., Otani, K., Hiyama, K., Kamei, N., Satoh, K., & Hiyama, E. (2010). A robust method for estimating gene expression states using Affymetrix microarray probe level data. *BMC Bioinformatics*, 11(1).

Ong, P., Otake, T., Brandt, C., Strickland, I., Boguniewicz, M., & Ganz, T. et al. (2002). Endogenous Antimicrobial Peptides and Skin Infections in Atopic Dermatitis. *New England Journal Of Medicine*, 347(15), 1151-1160.

Patil, V., Madrigal, A., Schmiedel, B., Clarke, J., O'Rourke, P., de Silva, A., Harris, E., Peters, B., Seumois, G., Weiskopf, D., Sette, A. and Vijayanand, P., 2018. Precursors of human CD4 + cytotoxic T lymphocytes identified by single-cell transcriptome analysis. *Science Immunology*, 3(19), p.eaan8664.

Petersen, B., & Damon, I. (2014). Orthopoxviruses: Vaccinia (Smallpox Vaccine), Variola (Smallpox), Monkeypox, and Cowpox. *Principles And Practice Of Infectious Diseases*, 2, 1694-1702.

Pulendran, B., 2014. Systems vaccinology: Probing humanity's diverse immune systems with vaccines. *Proceedings of the National Academy of Sciences*, 111(34), pp.12300-12306.

Riedel, S. (2005). Edward Jenner and the History of Smallpox and Vaccination. *Baylor University Medical Center Proceedings*, 18(1), 21-25.

Rao AR. , Smallpox, 1972 Bombay, IndiaKothari Book Depot

Rao, A. R., Prahlad, I., & Swaminathan, M. (1963). Pregnancy and smallpox. *Journal of the Indian Medical Association*, 40(8), 353-63.

Rock, M., Yoder, S., Wright, P., Talbot, T., Edwards, K., & Crowe, J. (2005). Differential Regulation of Granzyme and Perforin in Effector and Memory T Cells following Smallpox Immunization. *The Journal Of Immunology*, 174(6), 3757-3764.

Ryan, K., & Sherris, J. (2004). *Sherris medical microbiology*. McGraw-Hill.

Shmeleva, E., Smith, G., & Ferguson, B. (2019). Enhanced Efficacy of Vaccination With Vaccinia Virus in Old vs. Young Mice. *Frontiers In Immunology*, 10.

Smallpox / CDC. Cdc.gov. (2017). Retrieved 24 April 2020, from <https://www.cdc.gov/smallpox/index.html>.

- Smith, G., Benfield, C., Maluquer de Motes, C., Mazzon, M., Ember, S., Ferguson, B., & Sumner, R. (2013). Vaccinia virus immune evasion: mechanisms, virulence and immunogenicity. *Journal Of General Virology*, 94(11), 2367-2392.
- Smith, S., Smits, K., Joosten, S., van Meijgaarden, K., Satti, I., & Fletcher, H. et al. (2015). Intracellular Cytokine Staining and Flow Cytometry: Considerations for Application in Clinical Trials of Novel Tuberculosis Vaccines. *PLOS ONE*, 10(9), e0138042.
- Smyth, G. and Speed, T., 2003. Normalization of cDNA microarray data. *Methods*, 31(4), pp.265-273.
- Stanley, M. (2002). Imiquimod and the imidazoquinolones: mechanism of action and therapeutic potential. *Clinical And Experimental Dermatology*, 27(7), 571-577.
- Takeuchi, A., & Saito, T. (2017). CD4 CTL, a cytotoxic subset of CD4+ T cells, their differentiation and function. *Frontiers in immunology*, 8, 194.
- Vermeer, P., McHugh, J., Rokhлина, T., Vermeer, D., Zabner, J., & Welsh, M. (2007). Vaccinia Virus Entry, Exit, and Interaction with Differentiated Human Airway Epithelia. *Journal Of Virology*, 81(18), 9891-9899.
- Zaunders, J., Dyer, W., Munier, M., Ip, S., Liu, J., & Amyes, E. et al. (2006). CD127+CCR5+CD38+++ CD4+ Th1 Effector Cells Are an Early Component of the Primary Immune Response to Vaccinia Virus and Precede Development of Interleukin-2+ Memory CD4+ T Cells. *Journal Of Virology*, 80(20), 10151-10161.