

## 9 Referenzen

1. Janeway, C.A. 2001. Immunobiology 5th edition. *Garland Publishing Churchill Livingstone*.
2. MacLennan, I.C., Y.J. Liu, and G.D. Johnson. 1992. Maturation and dispersal of B-cell clones during T cell-dependent antibody responses. *Immunol Rev* 126:143-161.
3. Hargreaves, D.C., P.L. Hyman, T.T. Lu, V.N. Ngo, A. Bidgol, G. Suzuki, Y.R. Zou, D.R. Littman, and J.G. Cyster. 2001. A coordinated change in chemokine responsiveness guides plasma cell movements. *J Exp Med* 194:45-56.
4. Cassese, G., S. Lindenau, B. de Boer, S. Arce, A. Hauser, G. Riemekasten, C. Berek, F. Hiepe, V. Krenn, A. Radbruch, and R.A. Manz. 2001. Inflamed kidneys of NZB / W mice are a major site for the homeostasis of plasma cells. *Eur J Immunol* 31:2726-2732.
5. Kim, H.J., V. Krenn, G. Steinhauser, and C. Berek. 1999. Plasma cell development in synovial germinal centers in patients with rheumatoid and reactive arthritis. *J Immunol* 162:3053-3062.
6. Krenn, V., F. Hensel, H.J. Kim, M.M. Souto Carneiro, P. Starostik, G. Ristow, A. König, H.P. Vollmers, and H.K. Müller-Hermelink. 1999. Molecular IgV(H) analysis demonstrates highly somatic mutated B cells in synovialitis of osteoarthritis: a degenerative disease is associated with a specific, not locally generated immune response. *Lab Invest* 79:1377-1384.
7. Ahmed, R., and D. Gray. 1996. Immunological memory and protective immunity: understanding their relation. *Science* 272:54-60.
8. Benner, R., W. Hijmans, and J.J. Haaijman. 1981. The bone marrow: the major source of serum immunoglobulins, but still a neglected site of antibody formation. *Clin Exp Immunol* 46:1-8.
9. Haas, C., B. Ryffel, and M. Le Hir. 1997. IFN-gamma is essential for the development of autoimmune glomerulonephritis in MRL/lpr mice. *J Immunol* 158:5484-5491.
10. Munthe, E., and J.B. Natvig. 1972. Immunoglobulin classes, subclasses and complexes of IgG rheumatoid factor in rheumatoid plasma cells. *Clin Exp Immunol* 12:55-70.
11. Nie, Y., J. Waite, F. Brewer, M.J. Sunshine, D.R. Littman, and Y.R. Zou. 2004. The role of CXCR4 in maintaining peripheral B cell compartments and humoral immunity. *J Exp Med* 200:1145-1156.

12. Hauser, A.E., G. Muehlinghaus, R.A. Manz, G. Cassese, S. Arce, G.F. Debes, A. Hamann, C. Berek, S. Lindenau, T. Doerner, F. Hiepe, M. Odendahl, G. Riemekasten, V. Krenn, and A. Radbruch. 2003. Long-lived plasma cells in immunity and inflammation. *Ann NY Acad Sci* 987:266-269.
13. Nakayama, T., K. Hieshima, D. Izawa, Y. Tatsumi, A. Kanamaru, and O. Yoshie. 2003. Cutting edge: profile of chemokine receptor expression on human plasma cells accounts for their efficient recruitment to target tissues. *J Immunol* 170:1136-1140.
14. Garside, P., E. Ingulli, R.R. Merica, J.G. Johnson, R.J. Noelle, and M.K. Jenkins. 1998. Visualization of specific B and T lymphocyte interactions in the lymph node. *Science* 281:96-99.
15. Grewal, I.S., and R.A. Flavell. 1996. The role of CD40 ligand in costimulation and T-cell activation. *Immunol Rev* 153:85-106.
16. Paul, W.E. 1999. *Fundamental Immunology* Forth Edition. *Lippincott-Raven Publishers*.
17. Cheng, P.C., M.L. Dykstra, R.N. Mitchell, and S.K. Pierce. 1999. A role for lipid rafts in B cell antigen receptor signaling and antigen targeting. *J Exp Med* 190:1549-1560.
18. Cherukuri, A., P.C. Cheng, H.W. Sohn, and S.K. Pierce. 2001. The CD19/CD21 complex functions to prolong B cell antigen receptor signaling from lipid rafts. *Immunity* 14:169-179.
19. Callard, R.E., K.P. Rigley, S.H. Smith, S. Thurstan, and J.G. Shields. 1992. CD19 regulation of human B cell responses. B cell proliferation and antibody secretion are inhibited or enhanced by ligation of the CD19 surface glycoprotein depending on the stimulating signal used. *J Immunol* 148:2983-2987.
20. Carter, R.H., D.A. Tuveson, D.J. Park, S.G. Rhee, and D.T. Fearon. 1991. The CD19 complex of B lymphocytes. Activation of phospholipase C by a protein tyrosine kinase-dependent pathway that can be enhanced by the membrane IgM complex. *J Immunol* 147:3663-3671.
21. Carter, R.H., and D.T. Fearon. 1992. CD19: lowering the threshold for antigen receptor stimulation of B lymphocytes. *Science* 256:105-107.
22. Engel, P., L.J. Zhou, D.C. Ord, S. Sato, B. Koller, and T.F. Tedder. 1995. Abnormal B lymphocyte development, activation, and differentiation in mice that lack or overexpress the CD19 signal transduction molecule. *Immunity* 3:39-50.
23. O'Garra, A., and K. Murphy. 1994. Role of cytokines in determining T-lymphocyte function. *Curr Opin Immunol* 6:458-466.

24. van Kooten, C., and J. Banchereau. 2000. CD40-CD40 ligand. *J Leukoc Biol* 67:2-17.
25. Casamayor-Palleja, M., M. Khan, and I.C. MacLennan. 1995. A subset of CD4+ memory T cells contains preformed CD40 ligand that is rapidly but transiently expressed on their surface after activation through the T cell receptor complex. *J Exp Med* 181:1293-1301.
26. Foy, T.M., A. Aruffo, J. Bajorath, J.E. Buhlmann, and R.J. Noelle. 1996. Immune regulation by CD40 and its ligand GP39. *Annu Rev Immunol* 14:591-617.
27. Xu, J., T.M. Foy, J.D. Laman, E.A. Elliott, J.J. Dunn, T.J. Waldschmidt, J. Elsemore, R.J. Noelle, and R.A. Flavell. 1994. Mice deficient for the CD40 ligand. *Immunity* 1:423-431.
28. Villa, A., L.D. Notarangelo, J.P. Di Santo, P.P. Macchi, D. Strina, A. Frattini, F. Lucchini, C.M. Patrosso, S. Giliani, E. Mantuano. 1994. Organization of the human CD40L gene: implications for molecular defects in X chromosome-linked hyper-IgM syndrome and prenatal diagnosis. *Proc Natl Acad Sci U S A* 91:2110-2114.
29. Rogers, N.J., I.M. Jackson, W.J. Jordan, G. Lombardi, A. Delikouras, and R.I. Lechler. 2003. CD40 can costimulate human memory T cells and favors IL-10 secretion. *Eur J Immunol* 33:1094-1104.
30. Chu, C.C., E.E. Max, and W.E. Paul. 1993. DNA rearrangement can account for in vitro switching to IgG1. *J Exp Med* 178:1381-1390.
31. Huang, S., W. Hendriks, A. Althage, S. Hemmi, H. Bluethmann, R. Kamijo, J. Vilcek, R.M. Zinkernagel, and M. Aguet. 1993. Immune response in mice that lack the interferon-gamma receptor. *Science* 259:1742-1745.
32. van Ginkel, F.W., S.M. Wahl, J.F. Kearney, M.N. Kweon, K. Fujihashi, P.D. Burrows, H. Kiyono, and J.R. McGhee. 1999. Partial IgA-deficiency with increased Th2-type cytokines in TGF-beta 1 knockout mice. *J Immunol* 163:1951-1957.
33. Krug, A., A. Towarowski, S. Britsch, S. Rothenfusser, V. Hornung, R. Bals, T. Giese, H. Engelmann, S. Endres, A.M. Krieg, and G. Hartmann. 2001. Toll-like receptor expression reveals CpG DNA as a unique microbial stimulus for plasmacytoid dendritic cells which synergizes with CD40 ligand to induce high amounts of IL-12. *Eur J Immunol* 31:3026-3037.
34. Krieg, A.M., A.K. Yi, S. Matson, T.J. Waldschmidt, G.A. Bishop, R. Teasdale, G.A. Koretzky, and D.M. Klinman. 1995. CpG motifs in bacterial DNA trigger direct B-cell activation. *Nature* 374:546-549.

35. Bernasconi, N.L., N. Onai, and A. Lanzavecchia. 2003. A role for Toll-like receptors in acquired immunity: up-regulation of TLR9 by BCR triggering in naive B cells and constitutive expression in memory B cells. *Blood* 101:4500-4504.
36. Vonderheide, R.H., and S.V. Hunt. 1990. Immigration of thoracic duct B lymphocytes into established germinal centers in the rat. *Eur J Immunol* 20:79-86.
37. Liu, Y.J., J. Zhang, P.J. Lane, E.Y. Chan, and I.C. MacLennan. 1991. Sites of specific B cell activation in primary and secondary responses to T cell-dependent and T cell-independent antigens. *Eur J Immunol* 21:2951-2962.
38. Kroese, F.G., A.S. Wubben, and P. Nieuwenhuis. 1986. Germinal centre formation and follicular antigen trapping in the spleen of lethally X-irradiated and reconstituted rats. *Immunology* 57:99-104.
39. Nieuwenhuis, P., F.G. Kroese, D. Opstelten, and H.G. Seijen. 1992. De novo germinal center formation. *Immunol Rev* 126:77-98.
40. Griffiths, G.M., C. Berek, M. Kaartinen, and C. Milstein. 1984. Somatic mutation and the maturation of immune response to 2-phenyl oxazolone. *Nature* 312:271-275.
41. Smith, K.G., A. Light, G.J. Nossal, and D.M. Tarlinton. 1997. The extent of affinity maturation differs between the memory and antibody-forming cell compartments in the primary immune response. *Embo J* 16:2996-3006.
42. Fliedner, T., M. Kesse, E.P. Cronkite, and J.S. Robertson. 1964. Cell Proliferation in Germinal Centers of the Rat Spleen. *Ann NY Acad Sci* 113:578-594.
43. Lederman, S., M.J. Yellin, G. Inghirami, J.J. Lee, D.M. Knowles, and L. Chess. 1992. Molecular interactions mediating T-B lymphocyte collaboration in human lymphoid follicles. Roles of T cell-B-cell-activating molecule (5c8 antigen) and CD40 in contact-dependent help. *J Immunol* 149:3817-3826.
44. Silver, K., and R.J. Cornall. 2003. Isotype control of B cell signaling. *Sci STKE* 2003:pe21.
45. Fluckiger, A.C., P. Garrone, I. Durand, J.P. Galizzi, and J. Banchereau. 1993. Interleukin 10 (IL-10) upregulates functional high affinity IL-2 receptors on normal and leukemic B lymphocytes. *J Exp Med* 178:1473-1481.
46. Armitage, R.J., B.M. Macduff, M.K. Spriggs, and W.C. Fanslow. 1993. Human B cell proliferation and Ig secretion induced by recombinant CD40 ligand are modulated by soluble cytokines. *J Immunol* 150:3671-3680.

47. Arpin, C., J. Dechanet, C. Van Kooten, P. Merville, G. Grouard, F. Briere, J. Banchereau, and Y.J. Liu. 1995. Generation of memory B cells and plasma cells in vitro. *Science* 268:720-722.
48. Coico, R.F., B.S. Bhogal, and G.J. Thorbecke. 1983. Relationship of germinal centers in lymphoid tissue to immunologic memory. VI. Transfer of B cell memory with lymph node cells fractionated according to their receptors for peanut agglutinin. *J Immunol* 131:2254-2257.
49. Fayette, J., I. Durand, J.M. Bridon, C. Arpin, B. Dubois, C. Caux, Y.J. Liu, J. Banchereau, and F. Briere. 1998. Dendritic cells enhance the differentiation of naive B cells into plasma cells in vitro. *Scand J Immunol* 48:563-570.
50. Choe, J., and Y.S. Choi. 1998. IL-10 interrupts memory B cell expansion in the germinal center by inducing differentiation into plasma cells. *Eur J Immunol* 28:508-515.
51. Tangye, S.G., D.T. Avery, and P.D. Hodgkin. 2003. A division-linked mechanism for the rapid generation of Ig-secreting cells from human memory B cells. *J Immunol* 170:261-269.
52. Jego, G., R. Bataille, and C. Pellat-Deceunynck. 2001. Interleukin-6 is a growth factor for nonmalignant human plasmablasts. *Blood* 97:1817-1822.
53. Jego, G., A.K. Palucka, J.P. Blanck, C. Chalouni, V. Pascual, and J. Banchereau. 2003. Plasmacytoid dendritic cells induce plasma cell differentiation through type I interferon and interleukin 6. *Immunity* 19:225-234.
54. Dubois, B., C. Massacrier, B. Vanbervliet, J. Fayette, F. Briere, J. Banchereau, and C. Caux. 1998. Critical role of IL-12 in dendritic cell-induced differentiation of naive B lymphocytes. *J Immunol* 161:2223-2231.
55. Burdin, N., C. Van Kooten, L. Galibert, J.S. Abrams, J. Wijdenes, J. Banchereau, and F. Rousset. 1995. Endogenous IL-6 and IL-10 contribute to the differentiation of CD40-activated human B lymphocytes. *J Immunol* 154:2533-2544.
56. Manz, R.A., M. Lohning, G. Cassese, A. Thiel, and A. Radbruch. 1998. Survival of long-lived plasma cells is independent of antigen. *Int Immunol* 10:1703-1711.
57. Brieva, J.A., E. Roldan, M.L. De la Sen, and C. Rodriguez. 1991. Human in vivo-induced spontaneous IgG-secreting cells from tonsil, blood and bone marrow exhibit different phenotype and functional level of maturation. *Immunology* 72:580-583.
58. Jerne, N.K., C. Henry, A.A. Nordin, H. Fuji, A.M. Koros, and I. Lefkovits. 1974. Plaque forming cells: methodology and theory. *Transplant Rev* 18:130-191.

59. Hibi, T., and H.M. Dosch. 1986. Limiting dilution analysis of the B cell compartment in human bone marrow. *Eur J Immunol* 16:139-145.
60. Hibi, T., and H.M. Dosch. 1986. Lymphocyte function in human bone marrow. III. Isotype commitment, metabolic and secretory characteristics of immunoglobulin producing cells. *Cell Immunol* 98:34-45.
61. Vieira, P., and K. Rajewsky. 1988. The half-lives of serum immunoglobulins in adult mice. *Eur J Immunol* 18:313-316.
62. Fahey, J.L., and S. Sell. 1965. The Immunoglobulins of Mice. V. The Metabolic (Catabolic) Properties of Five Immunoglobulin Classes. *J Exp Med* 122:41-58.
63. Manz, R.A., A. Thiel, and A. Radbruch. 1997. Lifetime of plasma cells in the bone marrow. *Nature* 388:133-134.
64. Slifka, M.K., R. Antia, J.K. Whitmire, and R. Ahmed. 1998. Humoral immunity due to long-lived plasma cells. *Immunity* 8:363-372.
65. Bernasconi, N.L., E. Traggiai, and A. Lanzavecchia. 2002. Maintenance of serological memory by polyclonal activation of human memory B cells. *Science* 298:2199-2202.
66. Cassese, G., S. Arce, A.E. Hauser, K. Lehnert, B. Moewes, M. Mostarac, G. Muehlinghaus, M. Szyska, A. Radbruch, and R.A. Manz. 2003. Plasma cell survival is mediated by synergistic effects of cytokines and adhesion-dependent signals. *J Immunol* 171:1684-1690.
67. Hilbert, D.M., M. Kopf, B.A. Mock, G. Kohler, and S. Rudikoff. 1995. Interleukin 6 is essential for in vivo development of B lineage neoplasms. *J Exp Med* 182:243-248.
68. Burger, R., A. Guenther, F. Bakker, M. Schmalzing, S. Bernand, W. Baum, B. Duerr, G.M. Hocke, H. Steininger, E. Gebhart, and M. Gramatzki. 2001. Gp130 and ras mediated signaling in human plasma cell line INA-6: a cytokine-regulated tumor model for plasmacytoma. *Hematol J* 2:42-53.
69. Zhang, X.G., J.P. Gaillard, N. Robillard, Z.Y. Lu, Z.J. Gu, M. Jourdan, J.M. Boiron, R. Bataille, and B. Klein. 1994. Reproducible obtaining of human myeloma cell lines as a model for tumor stem cell study in human multiple myeloma. *Blood* 83:3654-3663.
70. Chatterjee, M., D. Honemann, S. Lentzsch, K. Bommert, C. Sers, P. Herrmann, S. Mathas, B. Dorken, and R.C. Bargou. 2002. In the presence of bone marrow stromal cells human multiple myeloma cells become independent of the IL-6/gp130/STAT3 pathway. *Blood* 100:3311-3318.

71. Jego, G., N. Robillard, D. Puthier, M. Amiot, F. Accard, D. Pineau, J.L. Harousseau, R. Bataille, and C. Pellat-Deceunynck. 1999. Reactive plasmacytoses are expansions of plasmablasts retaining the capacity to differentiate into plasma cells. *Blood* 94:701-712.
72. Dechanet, J., P. Merville, I. Durand, J. Banchereau, and P. Miossec. 1995. The ability of synoviocytes to support terminal differentiation of activated B cells may explain plasma cell accumulation in rheumatoid synovium. *J Clin Invest* 95:456-463.
73. Zlotnik, A., and O. Yoshie. 2000. Chemokines: a new classification system and their role in immunity. *Immunity* 12:121-127.
74. Ma, Q., D. Jones, P.R. Borghesani, R.A. Segal, T. Nagasawa, T. Kishimoto, R.T. Bronson, and T.A. Springer. 1998. Impaired B-lymphopoiesis, myelopoiesis, and derailed cerebellar neuron migration in CXCR4- and SDF-1-deficient mice. *Proc Natl Acad Sci U S A* 95:9448-9453.
75. Cyster, J.G. 2003. Lymphoid organ development and cell migration. *Immunol Rev* 195:5-14.
76. Kunkel, E.J., and E.C. Butcher. 2003. Plasma-cell homing. *Nat Rev Immunol* 3:822-829.
77. Neer, E.J. 1995. Heterotrimeric G proteins: organizers of transmembrane signals. *Cell* 80:249-257.
78. Ward, S.G., K. Bacon, and J. Westwick. 1998. Chemokines and T lymphocytes: more than an attraction. *Immunity* 9:1-11.
79. Chuang, T.T., L. Iacovelli, M. Sallese, and A. De Blasi. 1996. G protein-coupled receptors: heterologous regulation of homologous desensitization and its implications. *Trends Pharmacol Sci* 17:416-421.
80. Solari, R., R.E. Offord, S. Remy, J.P. Aubry, T.N. Wells, E. Whitehorn, T. Oung, and A.E. Proudfoot. 1997. Receptor-mediated endocytosis of CC-chemokines. *J Biol Chem* 272:9617-9620.
81. Sauty, A., R.A. Colvin, L. Wagner, S. Rochat, F. Spertini, and A.D. Luster. 2001. CXCR3 internalization following T cell-endothelial cell contact: preferential role of IFN-inducible T cell alpha chemoattractant (CXCL11). *J Immunol* 167:7084-7093.
82. Ford, W.L., and J.L. Gowans. 1969. The traffic of lymphocytes. *Semin Hematol* 6:67-83.
83. Butcher, E.C., and L.J. Picker. 1996. Lymphocyte homing and homeostasis. *Science* 272:60-66.

84. Butcher, E.C., M. Williams, K. Youngman, L. Rott, and M. Briskin. 1999. Lymphocyte trafficking and regional immunity. *Adv Immunol* 72:209-253.
85. Wehrli, N., D.F. Legler, D. Finke, K.M. Toellner, P. Loetscher, M. Baggiolini, I.C. MacLennan, and H. Acha-Orbea. 2001. Changing responsiveness to chemokines allows medullary plasmablasts to leave lymph nodes. *Eur J Immunol* 31:609-616.
86. Roy, M.P., C.H. Kim, and E.C. Butcher. 2002. Cytokine control of memory B cell homing machinery. *J Immunol* 169:1676-1682.
87. Muller, G., and M. Lipp. 2003. Shaping up adaptive immunity: the impact of CCR7 and CXCR5 on lymphocyte trafficking. *Microcirculation* 10:325-334.
88. Muller, G., U.E. Hopken, and M. Lipp. 2003. The impact of CCR7 and CXCR5 on lymphoid organ development and systemic immunity. *Immunol Rev* 195:117-135.
89. Campbell, D.J., C.H. Kim, and E.C. Butcher. 2003. Chemokines in the systemic organization of immunity. *Immunol Rev* 195:58-71.
90. Ngo, V.N., H.L. Tang, and J.G. Cyster. 1998. Epstein-Barr virus-induced molecule 1 ligand chemokine is expressed by dendritic cells in lymphoid tissues and strongly attracts naive T cells and activated B cells. *J Exp Med* 188:181-191.
91. Yanagihara, S., E. Komura, J. Nagafune, H. Watarai, and Y. Yamaguchi. 1998. EB1/CCR7 is a new member of dendritic cell chemokine receptor that is up-regulated upon maturation. *J Immunol* 161:3096-3102.
92. Okada, T., V.N. Ngo, E.H. Ekland, R. Forster, M. Lipp, D.R. Littman, and J.G. Cyster. 2002. Chemokine requirements for B cell entry to lymph nodes and Peyer's patches. *J Exp Med* 196:65-75.
93. Dustin, M.L., S.K. Bromley, Z. Kan, D.A. Peterson, and E.R. Unanue. 1997. Antigen receptor engagement delivers a stop signal to migrating T lymphocytes. *Proc Natl Acad Sci U S A* 94:3909-3913.
94. Hauser, A.E., G.F. Debes, S. Arce, G. Cassese, A. Hamann, A. Radbruch, and R.A. Manz. 2002. Chemotactic responsiveness toward ligands for CXCR3 and CXCR4 is regulated on plasma blasts during the time course of a memory immune response. *J Immunol* 169:1277-1282.
95. Bleul, C.C., J.L. Schultze, and T.A. Springer. 1998. B lymphocyte chemotaxis regulated in association with microanatomic localization, differentiation state, and B cell receptor engagement. *J Exp Med* 187:753-762.
96. Cyster, J.G. 2003. Homing of antibody secreting cells. *Immunol Rev* 194:48-60.



97. Tokoyoda, K., T. Egawa, T. Sugiyama, B.I. Choi, and T. Nagasawa. 2004. Cellular niches controlling B lymphocyte behavior within bone marrow during development. *Immunity* 20:707-718.
98. Kunkel, E.J., C.H. Kim, N.H. Lazarus, M.A. Vierra, D. Soler, E.P. Bowman, and E.C. Butcher. 2003. CCR10 expression is a common feature of circulating and mucosal epithelial tissue IgA Ab-secreting cells. *J Clin Invest* 111:1001-1010.
99. Lazarus, N.H., E.J. Kunkel, B. Johnston, E. Wilson, K.R. Youngman, and E.C. Butcher. 2003. A common mucosal chemokine (mucosae-associated epithelial chemokine/CCL28) selectively attracts IgA plasmablasts. *J Immunol* 170:3799-3805.
100. Agace, W.W., A. Amara, A.I. Roberts, J.L. Pablos, S. Thelen, M. Uguccioni, X.Y. Li, J. Marsal, F. Arenzana-Seisdedos, T. Delaunay, E.C. Ebert, B. Moser, and C.M. Parker. 2000. Constitutive expression of stromal derived factor-1 by mucosal epithelia and its role in HIV transmission and propagation. *Curr Biol* 10:325-328.
101. Piali, L., C. Weber, G. LaRosa, C.R. Mackay, T.A. Springer, I. Clark-Lewis, and B. Moser. 1998. The chemokine receptor CXCR3 mediates rapid and shear-resistant adhesion-induction of effector T lymphocytes by the chemokines IP10 and Mig. *Eur J Immunol* 28:961-972.
102. Janatpour, M.J., S. Hudak, M. Sathe, J.D. Sedgwick, and L.M. McEvoy. 2001. Tumor necrosis factor-dependent segmental control of MIG expression by high endothelial venules in inflamed lymph nodes regulates monocyte recruitment. *J Exp Med* 194:1375-1384.
103. Jones, D., R.J. Benjamin, A. Shahsafaei, and D.M. Dorfman. 2000. The chemokine receptor CXCR3 is expressed in a subset of B-cell lymphomas and is a marker of B-cell chronic lymphocytic leukemia. *Blood* 95:627-632.
104. Trentin, L., C. Agostini, M. Facco, F. Piazza, A. Perin, M. Siviero, C. Gurrieri, S. Galvan, F. Adami, R. Zambello, and G. Semenzato. 1999. The chemokine receptor CXCR3 is expressed on malignant B cells and mediates chemotaxis. *J Clin Invest* 104:115-121.
105. Medina, F., C. Segundo, A. Campos-Caro, I. Gonzalez-Garcia, and J.A. Brieva. 2002. The heterogeneity shown by human plasma cells from tonsil, blood, and bone marrow reveals graded stages of increasing maturity, but local profiles of adhesion molecule expression. *Blood* 99:2154-2161.
106. Manz, R.A., S. Arce, G. Cassese, A.E. Hauser, F. Hiepe, and A. Radbruch. 2002. Humoral immunity and long-lived plasma cells. *Curr Opin Immunol* 14:517-521.

107. Grimaitre, M., C. Werner-Favre, V. Kindler, and R.H. Zubler. 1997. Human naive B cells cultured with EL-4 T cells mimic a germinal center-related B cell stage before generating plasma cells. Concordant changes in Bcl-2 protein and messenger RNA levels. *Eur J Immunol* 27:199-205.
108. Odendahl, M., A. Jacobi, A. Hansen, E. Feist, F. Hiepe, G.R. Burmester, P.E. Lipsky, A. Radbruch, and T. Dorner. 2000. Disturbed peripheral B lymphocyte homeostasis in systemic lupus erythematosus. *J Immunol*. 2000 Nov 15;165(10):5970-9.
109. Klein, U., K. Rajewsky, and R. Kuppers. 1999. Phenotypic and molecular characterization of human peripheral blood B-cell subsets with special reference to N-region addition and J kappa-usage in V kappa J kappa-joints and kappa/lambda-ratios in naive versus memory B-cell subsets to identify traces of receptor editing processes. *Curr Top Microbiol Immunol* 246:141-146; discussion 147.
110. McMillan, R., R.L. Longmire, R. Yelenosky, J.E. Lang, V. Heath, and C.G. Craddock. 1972. Immunoglobulin synthesis by human lymphoid tissues: normal bone marrow as a major site of IgG production. *J Immunol* 109:1386-1394.
111. Petit, I., M. Szyper-Kravitz, A. Nagler, M. Lahav, A. Peled, L. Habler, T. Ponomaryov, R.S. Taichman, F. Arenzana-Seisdedos, N. Fujii, J. Sandbank, D. Zipori, and T. Lapidot. 2002. G-CSF induces stem cell mobilization by decreasing bone marrow SDF-1 and up-regulating CXCR4. *Nat Immunol* 3:687-694.
112. Hoyer, B.F., K. Moser, A.E. Hauser, A. Peddinghaus, C. Voigt, D. Eilat, A. Radbruch, F. Hiepe, and R.A. Manz. 2004. Short-lived Plasmablasts and Long-lived Plasma Cells Contribute to Chronic Humoral Autoimmunity in NZB/W Mice. *J Exp Med* 199:1577-1584.
113. Arce, S., E. Luger, G. Muehlinghaus, G. Cassese, A. Hauser, A. Horst, K. Lehnert, M. Odendahl, D. Honemann, K.D. Heller, H. Kleinschmidt, C. Berek, T. Dorner, V. Krenn, F. Hiepe, R. Bargou, A. Radbruch, and R.A. Manz. 2004. CD38 low IgG-secreting cells are precursors of various CD38 high-expressing plasma cell populations. *J Leukoc Biol*. 2004 Jun;75(6):1022-8.
114. Leyendeckers, H., M. Odendahl, A. Lohndorf, J. Irsch, M. Spangfort, S. Miltenyi, N. Hunzelmann, M. Assenmacher, A. Radbruch, and J. Schmitz. 1999. Correlation analysis between frequencies of circulating antigen-specific IgG-bearing memory B cells and serum titers of antigen-specific IgG. *Eur J Immunol* 29:1406-1417.

115. Wen, L., M. Hanvanich, C. Werner-Favre, N. Brouwers, L.H. Perrin, and R.H. Zubler. 1987. Limiting dilution assay for human B cells based on their activation by mutant EL4 thymoma cells: total and antimalaria responder B cell frequencies. *Eur J Immunol* 17:887-892.
116. Leberman, D.A., and J.S. Edmiston. 1999. The role of TGF-beta in growth, differentiation, and maturation of B lymphocytes. *Microbes Infect* 1:1297-1304.
117. Flynn, G., S. Maru, J. Loughlin, I.A. Romero, and D. Male. 2003. Regulation of chemokine receptor expression in human microglia and astrocytes. *J Neuroimmunol* 136:84-93.
118. Buckley, C.D., N. Amft, P.F. Bradfield, D. Pilling, E. Ross, F. Arenzana-Seisdedos, A. Amara, S.J. Curnow, J.M. Lord, D. Scheel-Toellner, and M. Salmon. 2000. Persistent induction of the chemokine receptor CXCR4 by TGF-beta 1 on synovial T cells contributes to their accumulation within the rheumatoid synovium. *J Immunol* 165:3423-3429.
119. Farber, J.M. 1997. Mig and IP-10: CXC chemokines that target lymphocytes. *J Leukoc Biol* 61:246-257.
120. Kim, C.H., K. Nagata, and E.C. Butcher. 2003. Dendritic cells support sequential reprogramming of chemoattractant receptor profiles during naive to effector T cell differentiation. *J Immunol* 171:152-158.
121. Langenkamp, A., G. Casorati, C. Garavaglia, P. Dellabona, A. Lanzavecchia, and F. Sallusto. 2002. T cell priming by dendritic cells: thresholds for proliferation, differentiation and death and intraclonal functional diversification. *Eur J Immunol* 32:2046-2054.
122. Bowman, E.P., N.A. Kuklin, K.R. Youngman, N.H. Lazarus, E.J. Kunkel, J. Pan, H.B. Greenberg, and E.C. Butcher. 2002. The intestinal chemokine thymus-expressed chemokine (CCL25) attracts IgA antibody-secreting cells. *J Exp Med* 195:269-275.
123. Buckley, C.D. 2003. Michael Mason prize essay 2003. Why do leucocytes accumulate within chronically inflamed joints? *Rheumatology (Oxford)* 42:1433-1444.
124. Bowman, E.P., J.J. Campbell, D. Soler, Z. Dong, N. Manlongat, D. Picarella, R.R. Hardy, and E.C. Butcher. 2000. Developmental switches in chemokine response profiles during B cell differentiation and maturation. *J Exp Med* 191:1303-1318.
125. Fujieda, S., A. Saxon, and K. Zhang. 1996. Direct evidence that gamma 1 and gamma 3 switching in human B cells is interleukin-10 dependent. *Mol Immunol* 33: 1335-1343.

126. Fujieda, S., K. Zhang, and A. Saxon. 1995. IL-4 plus CD40 monoclonal antibody induces human B cells gamma subclass-specific isotype switch: switching to gamma 1, gamma 3, and gamma 4, but not gamma 2. *J Immunol* 155:2318-2328.
127. Snapper, C.M., F.D. Finkelman, and W.E. Paul. 1988. Regulation of IgG1 and IgE production by interleukin 4. *Immunol Rev* 102:51-75.
128. Mallison, S.M., 3rd, A.K. Szakal, R.R. Ranney, and J.G. Tew. 1988. Antibody synthesis specific for nonoral antigens in inflamed gingiva. *Infect Immun* 56:823-830.
129. Arce, S., G. Cassese, A. Hauser, T. Dorner, M. Odendahl, R. Manz, A. Radbruch, and F. Hiepe. 2002. The role of long-lived plasma cells in autoimmunity. *Immunobiology* 206:558-562.
130. Kawano, M.M., K. Mihara, N. Huang, T. Tsujimoto, and A. Kuramoto. 1995. Differentiation of early plasma cells on bone marrow stromal cells requires interleukin-6 for escaping from apoptosis. *Blood* 85:487-494.
131. Odendahl, M., H. Mei, B.F. Hoyer, A.M. Jacobi, A. Hansen, G. Muehlinghaus, C. Berek, F. Hiepe, R. Manz, A. Radbruch, and T. Dorner. 2004. Generation of migratory antigen-specific plasma blasts and mobilisation of resident plasma cells in a secondary immune response. *Blood*. 2005 Feb 15;105(4):1614-21.
132. Zhan, F., E. Tian, K. Bumm, R. Smith, B. Barlogie, and J. Shaughnessy, Jr. 2003. Gene expression profiling of human plasma cell differentiation and classification of multiple myeloma based on similarities to distinct stages of late-stage B-cell development. *Blood* 101:1128-1140.
133. Wurbel, M.A., M. Malissen, D. Guy-Grand, E. Meffre, M.C. Nussenzweig, M. Richelme, A. Carrier, and B. Malissen. 2001. Mice lacking the CCR9 CC-chemokine receptor show a mild impairment of early T- and B-cell development and a reduction in T-cell receptor gammadelta(+) gut intraepithelial lymphocytes. *Blood* 98:2626-2632.
134. Ekerfelt, C., J. Ernerudh, J. Bunikis, M. Vrethem, J. Aagesen, M. Roberg, S. Bergstrom, and P. Forsberg. 1997. Compartmentalization of antigen specific cytokine responses to the central nervous system in CNS borreliosis: secretion of IFN-gamma predominates over IL-4 secretion in response to outer surface proteins of Lyme disease *Borrelia spirochetes*. *J Neuroimmunol* 79:155-162.
135. Wang, W.Z., S. Fredrikson, J.B. Sun, and H. Link. 1995. Lyme neuroborreliosis: evidence for persistent up-regulation of *Borrelia burgdorferi*-reactive cells secreting interferon-gamma. *Scand J Immunol* 42:694-700.

136. Widhe, M., C. Ekerfelt, P. Forsberg, S. Bergstrom, and J. Ernerudh. 1998. IgG subclasses in Lyme borreliosis: a study of specific IgG subclass distribution in an interferon-gamma-predominated disease. *Scand J Immunol* 47:575-581.
137. Flaishon, L., R. Hershkoviz, F. Lantner, O. Lider, R. Alon, Y. Levo, R.A. Flavell, and I. Shachar. 2000. Autocrine secretion of interferon gamma negatively regulates homing of immature B cells. *J Exp Med* 192:1381-1388.
138. Del Prete, G. 1998. The concept of type-1 and type-2 helper T cells and their cytokines in humans. *Int Rev Immunol* 16:427-455.
139. Moser, M., and K.M. Murphy. 2000. Dendritic cell regulation of TH1-TH2 development. *Nat Immunol* 1:199-205.
140. Koch, G., and R. Benner. 1982. Differential requirement for B-memory and T-memory cells in adoptive antibody formation in mouse bone marrow. *Immunology* 45:697-704.
141. Snapper, C.M., and J.J. Mond. 1993. Towards a comprehensive view of immunoglobulin class switching. *Immunol Today* 14:15-17.