

## 7 Literaturverzeichnis

- Aharoni, R., Teitelbaum, D., Arnon, R. and Puri, J. (1991). Immunomodulation of experimental allergic encephalomyelitis by antibodies to the antigen-Ia complex. *Nature* **351**, 147-150.
- Andersen, P. S., Stryhn, A., Hansen, B. E., Fugger, L., Engberg, J. and Buus, S. (1996). A recombinant antibody with the antigen-specific, major histocompatibility complex-restricted specificity of T cells. *Proc. Natl. Acad. Sci. USA* **93**, 1820-1824.
- Andersson, M. L., Stam, N. J., Klein, G., Ploegh, H. L. and Masucci, M. G. (1991). Aberrant expression of HLA class-I antigens in Burkitt lymphoma cells. *Int. J. Cancer* **47**, 544-550.
- Barnstable, C. J., Bodmer, W. F., Brown, G., Galfrè, G., Milstein, C. Williams, A. F. and Ziegler, A. (1978). Production of monoclonal antibodies to group A erythrocytes, HLA and other human cell surface antigens - new tools for genetic analysis. *Cell* **14**, 9-20.
- Bentley, G. A., Boulot, G. and Mariuzza, R. A. (1995). The structure of the antigen-binding site of immunoglobulins and T-cell receptors. *Res. Immunol.* **146**, 277-290.
- Berek, C. and Milstein, C. (1988). The dynamic nature of the antibody repertoire. *Immunol. Rev.* **105**, 5-26.
- Better, M., Chang, C. P., Robinson, R. R. and Horwitz, A. H. (1988). *Escherichia coli* secretion of an active chimeric antibody fragment. *Science* **240**, 1041-1043.
- Bird, R. E., Hardmann, K. D., Jacobson, J. W., Johnson, S., Kaufman, B. M., Lee, S.-M., Lee, T., Pose, S. H., Riordan, G. S. and Whitlow, M. (1988). Single-chain antigen-binding protein. *Science* **242**, 423-426.
- Bjorkman, P. J. and Parham, P. (1990). Structure, function, and diversity of class I major histocompatibility complex molecules. *Annu. Rev. Biochem.* **59**, 253-288.
- von Boehmer, H. (1994). Positive selection of lymphocytes. *Cell* **76**, 219-228.
- Boss, M. A., Kenten, J. H., Wood, C. R. and Emtage, J. S. (1984). Assembly of functional antibodies from immunoglobulin heavy and light chains synthesized in *E.coli*. *Nucleic Acids Res.* **12**, 3791-3806.
- Bowden, G. A., Paredes, A. M. and Georgiu, G. (1991). Structure and morphology of protein inclusion bodies in *Escherichia coli*. *Bio/Technology* **9**, 725-730.
- Breitling, F. (1991). Dissertation, Heidelberg.
- Breitling, F. and Little, M. (1986). Carboxy-terminal regions on the surface of tubulin and microtubules. Epitop location of YOL/34, DM1A and DM1B. *J. Mol. Biol.* **189**, 367-370.
- Breitling, F., Dübel, S., Seehaus, T., Klewinghaus, I. and Little, M. (1991). A surface expression vector for antibody screening. *Gene* **104**, 147-153.
- Brüggemann, M., Winter, G., Waldman, H. and Neuberger, M. (1989). The immunogenicity of chimeric antibodies. *J. Exp. Med.* **170**, 2153-2157.
- Buchner, J., Pastan, I. and Brinkman, U. (1992). A method for increasing the yield folded recombinant fusion proteins: single-chain immunotoxins from renaturation of bacterial inclusion bodies. *Anal.Biochem.* **205**, 263-270.
- Bullock, W. O., Fernandez, J. M. and Short (1987). XL1-blue: a high efficiency plasmid transforming recA *Escherichia coli* strain with beta-galactosidase selection. *Biotechniques* **5**, 376-379.

- Bunn, P. A. and Foss, F. M. (1996). T-cell lymphoma cell lines (HUT102 and HUT78) established at the National Cancer Institute: history and importance at understanding the biology, clinical features, and therapy of cutaneous T-cell lymphomas (CTCL) and adult T-cell leukemia-lymphomas (ATLL). *J. Cell. Biochem. Suppl.* **24**, 12-23.
- Cai, X. and Garen, A. (1995). Anti-melanoma antibodies from melanoma patients immunized with genetically modified autologous tumor cells: selection of specific antibodies from single-chain Fv fusion phage libraries. *Med. Sciences* **92**, 6537-6541.
- Campbell, R. A. and Trowsdale, J. (1993). *Immunol. Today* **14**, 349-354. Map of the human MHC.
- Cano, P., Fan, B. and Stass, S. (1998). A geometric study of the amino acid sequence of class I HLA molecules. *Immunogenetics* **48**, 324—334.
- Carrol, W. L., Mendel, E. and Levy, S. (1988). Hybridoma fusion cell lines contain an aberrant kappa transcript. *Mol. Immunol.* **25**, 991.
- Charbonnier, J.-B., Carpenter, E., Gigant, B., Golinelli-Pimpaneau, B., Eshhar, Z., Green, B. S. and Knossow, M. (1995). Crystal structure of the complex of a catalytic antibody Fab with a transition state analog: structural similarities in esterase-like catalytic antibodies. *Proc. Natl. Acad. Sci. USA* **92**, 11721-11725.
- Chien, N. C., Roberts, V. A., Giusti, A. M., Scharff, M. D. and Getzoff, E. D. (1989). Significant structural and functional change of antigen-binding site by a distant amino acid substitution: proposal of a structural mechanism. *Proc. Natl. Acad. Sci. USA* **86**, 5532-5536.
- Chothia, C., Lesk, A. M., Tramontano, A., Levitt, M., Smith-Gill, S. J., Air, G., Sheriff, S., Padlan, E. A., Davies, D., Tulip, W. R., Colman, P.M., Spinelli, S., Alzari, P. M. and Poljak, R. J. (1989). Conformations of immunoglobulin hypervariable regions. *Nature* **342**, 877-883.
- Chothia, C., Lesk, A. M., Gherardi, E., Tomlinson, I. M., Walter, G., Marks, J. D., Llewelin, M. B. and Winter, G. (1992). Structural repertoire of human V<sub>H</sub> segments. *J. Mol. Biol.* **227**, 799-817.
- Colonna, M., Borsellino, G. Falco, M., Ferrara, G. B. and Strominger, J. L. (1993). HLA-C is the inhibitory ligand that determines dominant resistance to lysis by NK1- and NK2-specific natural killer cells. *Proc. Natl. Acad. Sci. USA* **90**, 12000-12004.
- Darsley, M. J. and Rees, A. R. (1985). Nucleotide sequences of five anti-lysozym monoclonal antibodies. *EMBO J.* **4**, 393-398.
- Davey, B. (1991). Immunologie. eine Einführung. *Birkhäuser Verlag, Basel, Boston, Berlin.*
- Debrock, S., Sironi, L. and Declerck, P. J. (1997). Cloning of single-chain variable fragment (scFv switching active plasminogen activator inhibitor-1 to substrate. *Gene* **189**, 83-88.
- Deng, S., MacKenzie, C. R., Sadowska, J., Michniewicz, J., Young, N. M., Bundle, D. R. and Narang, S. A. (1994). Selection of antibody single-chain variable fragments with improved carbohydrate binding by phage display. *J. Biol. Chem.* **13**, 9533-9538.
- Denzin, L. K., Whitlow, M. and Voss E. W., Jr. (1991). Single-chain site-specific mutations of fluorescein-amino acid contact residues in high affinity monoclonal antibody 4-4-20. *J. Biol. Chem.* **266**, 14095-14103.
- Döhning, C. and Colonna, M. (1996). Human natural killer cell inhibitory receptors bind to HLA class I molecules. *Eur. J. Immunol.* **26**, 365-369.
- Dübel, S., Breitling, F., Seehaus, T. and Little, M. (1992). Generation of a human IgM expression library in *E.coli*. *Meth. Mol. Cell. Biol.* **3**, 47-52.

- Dübel, S., Breitling, F., Fuchs, P., Braunagel, M., Klewinghaus, I. and Little, M. (1993). A family of vector for surface display and production of antibodies. *Gene* **128**, 97-101.
- Elliott, T., Smith, M., Dricoll, P. and Michael, A. (1993). Peptide selection by class I molecules of the major histocompatibility complex. *Curr. Biol.* **3**, 854-866.
- Evan, G. I., Lewis, G. K., Ramsay, G. and Bishop, J. M. (1985). Isolation of monoclonal antibodies specific for human c-myc proto-oncogene product. *Mol. Cell. Biol.* **5**, 3610-3616.
- Fahnestock, M. L., Tamir, I., Narhi, L. and Bjorkmann, P. J. (1992). Thermal stability comparison of purified empty and peptide-filled forms of class I MHC molecule. *Science* **258**, 1658-1662.
- Falk, K., Röttschke, O., Grahovac, B., Schendel, D., Stevanovic, S., Jung, G. and Rammensee, H.-G. (1993). Peptide motifs of HLA-B35 and -B37 molecules. *Immunogenetics* **38**, 161.
- Foot, J. and Winter, G. (1992). Antibody framework residues affecting the conformation of the hypervariable loops. *J. Mol. Biol.* **224**, 487-499.
- Gallagher, R., Collins, S., Trujillo, J., McCredie, K., Ahearn, M., Tsai, S., Metzgar, R., Aulakh, G., Ting, R., Ruscetti, F. and Gallo, R. (1979). Characterization of the continuous, differentiating myeloid cell line (HL-60) from a patient with acute promyelocytic leukemia. *Blood* **54**, 713-733.
- Gao, G. F., Tormo, J., Gerth, U. C., Wyer, J. R., McMichael, A.J., Stuart, D. I., Bell, J. I., Jones, E. Y. and Jakobsen, B. K. (1997). Crystal structure of the complex between human CD8 $\alpha\alpha$  and HLA-A2. *Nature* **387**, 630-634.
- Garboczi, D. N. and Wiley, D. C. (1996). Structure of the complex between human T-cell receptor, viral peptide and HLA-A2. *Nature* **384**, 134-141.
- George, A. J. T., Titus, J. A., Jost, C. R., Kurucz, I., Perez, P., Andrew, S. M., Nichols, P. J., Huston, J. S. and Segal, D. (1994). Redirection of T cell-mediated cytotoxicity by a recombinant single-chain Fv molecule. *J. Immunol.* **152**, 1802-1811.
- Glassy, M. C. and Dilman, R. O. (1988). Molecular biotherapy with human monoclonal antibodies. *Mol. Biother.* **1**, 7.
- Glockshuber, R., Malia, M., Pfitzinger, I. and Plückthun, A. (1990). A comparison of strategies to stabilize immunoglobulin Fv-fragments. *Biochemistry* **29**, 1362-1367.
- Gobin, S., J., Wilson, L., Keijsers V. and Van den Elsen, P. J. (1997). Antigen processing and presentation by human trophoblast-derived cell lines. *J. Immunol.* **158**, 3587-3592.
- Gram, H., Marconi, L.-A., Barbas III, C. F., Collet, T. A., Lerner, R. A. and Kang, A. S. (1992). In vitro selection and affinity maturation of antibodies from a naive combinatorial immunoglobulin library. *Proc. Natl. Acad. Sci. USA* **89**, 3576-3580.
- Griffiths, C. M., Berek, C., Kaartinen, M. and Milstein, C. (1984). Somatic mutation and the maturation of immune response to 2-phenyl oxazolone. *Nature* **312**, 271-275.
- Griffiths, A. D., Malmqvist, M., Marks, J. D., Bye, J. M., Embleton, M. J., McCafferty, J., Baier, M., Holliger, K. P., Gorick, B., Hughes-Johnes, N. C., Hoogenboom, H. R. and Winter, G. (1993). Human anti-self antibodies with specificity from phage display libraries. *EMBO J.* **12**, 725-734.
- Hawkins, R. E., Russell, S. J. and Winter, G. (1992). Mimicking affinity maturation: selection of phage antibodies by binding affinity. *J. Mol. Biol.* **226**, 889-896.
- Heemels, M. T. and Ploegh, H. (1995). Generation, translocation, and presentation of MHC class I-restricted peptides. *Annu. Rev. Biochem.* **64**, 463-491.

- Heinrichs, H., Wernet, P. and Ziegler, A. (1980). Expression of major histocompatibility antigens on human thymocytes studied using monoclonal antibodies. *Immunogenetics* **11**, 629-635.
- Hilt, W. and Wolf, D. H. (1996). Proteasomes: destruction as a program. *TIBS*. **21**, 96-101.
- Hockney, R. (1994). Recent development in heterologous protein production in *Escherichia coli*. *Tibtech* **12**, 436-463.
- Hoogenboom, H. R. (1997). Designing and optimizing library selection strategies for generating high-affinity antibodies. *Tibtech* **15**, 62-70.
- Hoogenboom, H. R., Griffiths, A. D., Johnson, K. S., Chiswell, D. J., Hudson, P. and Winter, G. (1991). Multi-subunit proteins on the surface of filamentous phage: methodologies for displaying antibody (Fab) heavy and light chains. *Nucleic Acids Res.* **19**, 4133-4137.
- Hoogenboom, H. R. and Winter, G. (1992). Bypassing immunization: human antibodies from synthetic repertoires of germline VH gene segments rearranged in vitro. *J. Mol. Biol.* **227**, 381-388.
- Hughes-Jones, N. C., Gorick, B. D., Bye, J. M., Finnern, R., Scott, M. L., Voak, D., Marks, J. D. and Ouwehand, W. H. (1994). Characterization of human blood group scFv antibodies derived from a V gene phage-display library. *Br. J. Haematol.* **88**, 180-186.
- Huse, W. D., Sastry, L., Iverson, S. A., Kang, A. S. Alting-Mees, M. Burton, D. R., Benkovic, S. J. and Lerner, R. A. (1989). Generation of a large combinatorial library of the immunoglobulin repertoire in phage lambda. *Science* **246**, 1275-1281.
- Huston, J. S., Levinston, D., Mudgett-Hunter, M., Tai, M., Novotny, J., Margolies, M. N., Ridge, R. J., Bruccoleri R. E., Haber, E., Crea, R. and Oppermann, H. (1988). Protein engineering of antibody binding sites: Recovery of specific activity in an anti-digoxin single-chain Fv analogue produced in *Escherichia coli*. *Proc. Natl. Acad. Sci. U.S.A.* **85**, 5879-5883.
- Huston, J. S., Mudgett-Hunter, M., Tai M. S., McCartney, J., Warren, F., Haber, E. and Opperman, H. (1991). Protein engineering of single-chain Fv analogs and fusion proteins. *Methods Enzymol.* **203**, 46-88.
- Ihler, J., Holzer, U., Krull, F., Dohlsten, M., Kalland, T., Niethammer, D. and Dannecker, G. E. (1995). Antibody-targeted superantigens induce lysis of major histocompatibility complex class II-negative T-cell leukemia lines. *Cancer Res.* **55**, 623-628.
- Jaenicke, R., Schurig, H., Beucamp, N. and Ostendorp, R. (1996). Structure and stability of hyperstable proteins: glycolytic enzymes from hyperthermophilic bacterium *Thermotoga maritima*. *Adv. Protein. Chem.* **48**, 181-269.
- Janeway, C. A. and Travers, P. (1994). The immunsystem in health and disease. *Black Scientific Publications, Oxford, London*.
- Jardetzky, T. S. Lane, W. S., Robinson, R. A., Madden, D. R. and Willey, D. C. (1991). Identification of self-peptides bound to purified HLA-B27. *Nature* **353**, 326-329.
- de Jonge, J. Brissinck, J., Heirman, C., Demanet, C., Oberdan, L., Moser, M. and Thielmans, K. (1995). Production and characterization of bispecific single-chain antibody fragments. *Mol. Immunol.* **32**, 1405-1412.
- Kabat, E. A. and Wu, E. E. (1991). Identical V region amino acid sequences and segments of sequences in antibodies of different specificities. *J. Immunol.* **147**, 1709-1719.
- Kabat, E. A., Wu, T. T., Perry, H. M. Gottesman, K. S. and Foeller, C. (1991). Sequences of proteins of immunological interest. *U.S. Department of Health and Human services, 5th edition*.

- Kavaler, J., Caton, A. J., Staudt, L. M., Schwartz, D. und Walter, G. (1990). A set of related antibodies dominates the primary antibody response to the antigenic site Cb of the A/PR/8/34 influenza virus hemagglutinin. *J. Immunol.* **145**, 2312-2321.
- Kelly, A., Powis, S. H., Kerr, L.-A., Movkridge, I., Elliot, T., Bastin, J., Uchanska-Ziegler, B., Ziegler, A., Trowsdale, J. and Townsend, A. (1992). Assembly and function of the two ABC transporter proteins encoded in the human major histocompatibility complex. *Nature* **355**, 641-644.
- Kilmartin, J. V., Wright, B. and Milstein, C. (1982). Rat monoclonal anti-tubulin antibodies derived by using nonsecreting rat cell line. *J. Cell Biol.* **93**, 576-582.
- Kipriyanov, S. M., Dübel, S., Breitling, F., Kontermann, R. E. and Little, M. (1994). Recombinant single chain Fv fragment carrying C-terminal cysteine residues: production of bivalent and biotinylated miniantibodies. *Mol. Immunol.* **31**, 1047-1058.
- Kipriyanov, S. M., Kupriyanova, O. A., Little, M. and Moldenhauer, G. (1996). Rapid detection of recombinant antibody fragments directed against cell-surface antigens by flow cytometry. *J. Immunol. Methods* **196**, 51-62.
- Kipriyanov, S., Little, M., Kropshofer, H., Breitling, f., Gotter, S. and Dübel, S. (1995). Affinity enhancement of a recombinant antibody: formation of complexes with multiple valency by a single-chain Fv fragment-core streptavidin fusion. *Protein Engineering* **9**, 203-211.
- Klein, G., Zeuthen, J., Terasaki, P., Billing, R., Honig, R., Jondal, M., Westman, A. and Clements, G. (1976). *Int. J. Cancer* **18**, 639.
- Knappik, A. and Plückthun, A. (1995). Engineered turns of recombinant antibody improve its *in vivo* folding. *Protein Engineering* **8**, 81-89.
- Kortt, A. A., Malby, R. L., Caldwell, J. B., Gruen, L. C., Ivancic, N., Lawrens, M. C., Howlett, G. J., Webster, R. G., Hudson, R. J. and Colman, P. M. (1994). Recombinant anti-sialidase single-chain variable fragment antibody. *Eur. J. Biochem.* **221**, 151-157.
- Köhler, C. and Milstein, C. (1975). Continuous cultures of fused cells secretion antibody of predefined specificity. *Nature* **256**, 495-497.
- de Kruijff, J., Boel, E. and Logtenberg, T. (1995). Selection and amplification of human single chain Fv antibody fragments from a semi-synthetic phage antibody display library with designed CDR3 regions. *J. Mol. Biol.* **248**, 97-105.
- Lei, S. P., Lin, H. C., Wang, S. S., Callaway, J. and Wilcox, G. (1987) Characterization of the *Erwinia carotova* pelB gene and its product pectate lyase. *J. Bacteriol.* **169**, 4379-4383.
- Lilius, G., Person, M., Bülow, L. and Mosbach, K. (1991). Metal affinity precipitation of proteins carrying genetically attached polyhistidine tails. *Eur. J. Biochem.* **198**, 499-504.
- Lozzio, C. B. and Lozzio, B. B. (1975). Human chronic myelogenous leukemia cell line with positive Philadelphia chromosome. *Blood* **45**, 321-334.
- Madden, D. R. (1995). The three-dimensional structure of peptide-MHC complexes. *Annu. Rev. Immunol.* **13**, 587-622.
- Madden, D. R., Garboczi, D. N. and Wiley, D. C. (1993). The antigenic identity of a peptide-MHC complex: a comparison of the conformation of five viral peptides presented by HLA-A2. *Cell* **75**, 693-708.
- Malby, R. L., Caldwell, J. B., Gruen, L. C., Harley, V. R., Ivancic, N., Kortt, A. A., Lilley, G. G., Power, B. E., Webster, R. G., Colman, P. M. and Hudson, P. J. (1993). Recombinant antineuraminidase single-chain antibody: expression, characterization and crystallization in complex with antigen. *Proteins* **16**, 57-63.

- Mallender, W. D. and Voss, E. W., Jr. (1994). Construction, expression, and activity of a bivalent bispecific single-chain antibody. *J. Biol. Chem.* **269**, 199-206.
- Marasco, W. A., Haseltine, W. A. and Chen, S. Y. (1993). Design, intracellular expression, and activity of human anti-human immunodeficiency virus type 1 gp 120 single-chain antibody. *Proc. Natl. Acad. Sci. USA* **90**, 7889-7893.
- Marks, J. D., Hoogenboom, H. R., Bonnert, T. P., McCafferty, J., Griffiths, A. D. and Winter, G. (1991). Bypassing immunization. Human Antibodies from V-Gene libraries displayed on phage. *J. Mol. Biol.* **222**, 581-597.
- Marks, J. D., Hoogenboom, H. R., Griffiths, A. D. and Winter, G. (1992a). Molecular evolution of proteins on filamentous phage. *J. Biol. Chem.* **267**, 16007-16010.
- Marks, J. D., Griffiths, A. D., Malmqvist, M., Clackson, T. P., Bye, J. and Winter, G. (1992b). Bypassing immunisation: building high affinity human antibodies by chain shuffling. *Biotechnology* **10**; 779-783.
- Marks, J. D., Ouwehand, W. H., Bye, J. M., Finnern, R., Gorik, B. D., Voak, D., Thorpe, S. J., Hughes-Jones, N. C. and Winter, G. (1993). Human antibody fragments specific for human blood group antigens from a phage display library. *Bio/Technology* **11**, 1145-1149.
- Martin, D., Fauchet, R., Muller, C., Wernet, P., Ziegler, A. and Uchanska-Ziegler, B. (1985). Expression of HLA-A and -B antigens on differentiating U-937 cells. *Tissue Antigens* **25**, 235-246.
- Matsumura, M., Fremont, D. H., Peterson, P. A. and Wilson, I. A. (1992). Emerging principles for the recognition of peptide antigen by MHC class I molecules. *Science* **257**, 927-934.
- McBlane, J. F., Van Gent, D. C., Ramsden, D. A., Romeo, C., Cuomo, C. A., Gellert, M. and Oettinger, M. A. (1995). Cleavage at V(D)J recombination signal requires only RAG1 and RAG2 proteins and occurs in two steps. *Cell* **83**, 387-395.
- McCafferty, J., Griffiths, A. D., Winter, G. and Chiswell, D. J. (1990). Phage antibodies: filamentous phage displaying antibody variable domains. *Nature* **348**, 552-554.
- McCallum, R. M., Martin, A. C. R. and Thornton, J. (1996). Antibody-antigen interactions: contact analysis and binding site topography. *J. Mol. Biol.* **262**, 732-745.
- Mellins, E., Kempin, S., Smith, L. Monji, T. and Pious, D. (1991). A gene required for class II-restricted antigen presentation maps to the major histocompatibility complex. *J. Exp. Med.* **174**, 1607-1615.
- Menßen, R., Orth, P., Ziegler, A. and Saenger, W. (1999). Decamer-like conformation of a nona-peptide bound to HLA-B\*3501 due to non-standard positioning of the C-Terminus. *J. Mol. Biol.* **285**, 645-653.
- Murphy, D. B., Lo, D., Rath, S., Brinster, R. L., Flavell, R. A., Slanetz, A. and Janeway, C. A., Jr. (1989). A novel MHC class II epitope expressed in thymic medulla but not cortex.
- Müller, C., Herbst, H., Löffler, G., Ziegler, A. and Wernet, P. (1983). A cytotoxic monoclonal antibody specific for the private alloantigenic determinant of the HLA-B13 molecule. *Hum. Immunol.* **7**, 229-237.
- Neuberger, M. S. and Milstein, C. (1995). Somatic hypermutation. *Curr. Opin. Immunol.* **7**, 248-254.
- Nicholson, I. C., Lenton, K. A., Little, D. J., Lee, F. T., Scott, A. M., Zola, H. and Hohmann, A. W. (1997). Construction and characterisation of a functional CD19 specific single chain Fv fragment for immunotherapy of B lineage leukemia and lymphoma. *Mol. Immunol.* **34**, 1157-1165.
- Nieba, L., Honegger, A., Krebber, C. and Plückthun, A. (1997). Disrupting the hydrophobic patches at the antibody variable/constant domain interface: improved in vivo folding and physical characterization of engineered scFv fragment. *Protein Engineering*, **10**, 435-444.

- Nissim, A., Hoogenboom, H. R., Flynn, G., Midgley, C., Lane, D. and Winter, G. (1994). Antibody fragments from a 'single pot' phage display library as immunochemical reagents. *EMBO J.* **13**, 692-698.
- Nossal, G. J. (1994). Negative selection of lymphocytes. *Cell* **76**, 229-39.
- Novotny, J. (1991). Protein antigenicity: a thermodynamic approach. *Mol. Immunol.* **28**, 201-207.
- Novotny, J., Bruccoleri, R. E. and Haber, E. (1990). Computer analysis of mutations that affect antibody specificity. *Proteins: Struct. Func. Genet.* **7**, 93-98.
- Orlandi, R., Gussow, D. H., Jones, P. T. and Winter, G. (1989). Cloning immunoglobulin variable domains for expression by the polymerase chain reaction. *Proc. Natl. Acad. Sci. USA* **86**, 3833-3857.
- Pamer, E. and Cresswell, P. (1998). Mechanism of MHC class I-restricted antigen processing. *Annu. Rev. Immunol.* **16**, 323-358.
- Parham, P. (1996). Functions for MHC class I carbohydrates inside and outside the cell. *TIBS* **21**, 427-433.
- Parmley, S. F. and Smith, G. P. (1988). Antibody-selectable filamentous fd phage vector: affinity purification of target genes. *Gene* **73**, 305-318.
- Parren, P. W. H. I. (1992). Preparation of genetically engineered monoclonal antibodies for human immunotherapy. *Hum. Antibod. Hybridomas* **3**, 137-145.
- Pistillo, M. P., Hammer, J. Bono, E., Sinigaglia, F., Bottero, F., Gho, A. and Ferrara, G. B. (1997). A novel approach to human anti-HLA mAbs production: use of phage display libraries. *J. Immunol.* **57**, 19-26.
- Plückthun, A. (1991). Antibody engineering: advances from use of *Escherichia coli* expression system. *Bio/Technology* **9**, 545-551.
- Plückthun, A. (1992). Mono- and bivalent antibody fragment produced in *Escherichia coli*: engineering, folding and antigen binding. *Immunol. Rev.* **130**, 151-188.
- Plückthun, A., Krebber, A., Krebber, C., Horn, U., Knüpfer, U., Wenderoth, R., Nieba, L., Proba, K. and Riesenberger, D. (1996). Antibody engineering. A practical approach. In *McCafferty, J. (ed.), IRL Press, Oxford*, 203-252.
- Proba, K., Honegger, A. Plückthun, A. (1997). A natural antibody missing a cysteine in VH: consequences for thermodynamic stability and folding. *J. Mol. Biol.*
- Pugsley, A. P. (1993). The complete general secretory pathway in gram-negative bacteria. *Microbiol. Rev.* **57**, 50-108.
- Radka, S. F., Kostyu, D. and Amos, D. B. (1982). Monoclonal antibody directed against the HLA-Bw6 epitope. *J. Immunol.* **128**, 284-286.
- Reiter, Y., Brinkmann, U., Kreitman, R. J. Jung S.-H., Lee, B. K. and Pastan, I. (1994a). Stabilization of the Fv-Fragments in recombinant immunotoxins by disulfide bonds engineered into conserved framework region. *Biochemistry* **33**, 5451-5459.
- Reiter, Y., Kreitman, R. J., Brinkmann, U. und Pastan, I. (1994b). Cytotoxic and antitumor activity of recombinant immunotoxin composed of disulfide-stabilized anti-Tac Fv fragment and truncated *Pseudomonas* exotoxin. *Int. J. Cancer* **58**, 142-149.
- Reiter, Y., Di Carlo, A., Fugger, L., Engberg, J. and Pastan, I. (1997). Peptide-specific killing of antigen-presenting cells by recombinant antibody-toxin fusion protein targeted to major histocompatibility complex/peptide class I complex with T cell receptor-like specificity. *Proc. Natl. Acad. Sci. USA* **94**, 431-4636.

- Rosa, F., Fellous, M., Dron, M., Tovey, M. and Revel, M. (1983). Presence of an abnormal beta 2-microglobulin mRNA in Daudi cells: induction by interferon. *Immunogenetics* **17**, 125-131.
- Rosenfelder, G., Ziegler, A., Wernet, P. and Braun, D. G. (1982). Ganglioside patterns: new biochemical markers for human hamatopoetic cell lines. *J. Natl. Cancer. Inst.* **68**, 203-209.
- Rötzschke, O, Falk, K., Stevanovic, S., Jung, G. und Rammensee, H.-G. (1992). Peptide motifs of closely related HLA class I molecules encompass substantial differences. *Eur. J. Immunol.* **12**, 447-455.
- Salter, R. D. and Cresswell, P. (1986). Impaired assembly and transport of HLA-A and B- antigens in a mutant TxB cell hybrid. *EMBO J.* **5**, 943-949.
- Sambrook, J., Fritsch, E. F. and Maniatis, T. (1989). Molecular cloning, a laboratory manual. *Cold Spring Harbour Laboratory Press, 2ed edition.*
- Schier, R., Bye, J., Apell, G., McCall, A., Adams, G. P., Malmqvist, M., Weiner, L. M. and Marks, J. D. (1996). Isolation of high-affinity monomeric human anti-c-erbB-2 single chain Fv using affinity-driven selection. *J. Mol. Biol.* **255**, 28-43.
- Schimizu, Y., Geraghty, D. E., Koller, B. H., Orr, H. T. and DeMars, R. (1988). Transfer and expression of three cloned human non-HLA-A,B,C, class I major histocompatibility complex genes in mutant lymphoblastoid cells. *Proc. Natl. Acad. Sci. USA* **85**, 227-231.
- Shodin, B. A. and Kranz, D. M. (1993). Binding affinity and inhibitory properties of single-chain anti-T cell receptor antibody. *J. Biol. Chem.* **268**, 25722-25727.
- Schneider, U., Schwenk, H.-U. and Bornkamm (1977). Characterization of EBV-genome negative "null" and "T" cell lines derived from children with acute lymphoblastic leukemia and leukemic transformed non-Hodgkin lymphoma. *Int. J. Cancer* **19**, 521-526.
- Skerra, S. and Plückthun, A. (1988). Assembly of functional immunoglobulin Fv fragment in *Escherichia coli*. *Science* **240**, 1038-1041.
- Smith, G. P. (1985). Filamentous fusion phage: novel expression vectors that display cloned antigens on the virion surface. *Science* **228**, 1315-1317.
- Snary, D., Goodfellow, P., Hayman, M. J., Bodmer, W. F. and Crumpton, M. J. (1974). Subcellular separation and molecular nature of human histocompatibility antigens (HL-A). *Nature* **247**, 457-461.
- Spring, B., Fonatsch, C., Müller, C., Pawelec, G., Kömpf, J., Wernet, P. and Ziegler, A. (1985). Refinement of HLA gene mapping with induced B-cell mutants. *Immunogenetics* **21**, 277-291.
- Stam, N. J., Spits, H. and Ploegh, H. L. (1986). Monoclonal antibody raised against denaturated HLA-B locus heavy chains permits biochemical characterization of certain HLA-C locus products. *J. Immunol.* **137**, 2299-2306.
- Steinle, A., Reinhardt, K., Nößner, E., Uchanska-Ziegler, B., Ziegler, A. and Schendel, D. J. (1993). Microheterogeneity in HLA-B35 alleles influences peptide-dependent allorecognition by cytotoxic T cells but not binding of a peptide-restricted monoclonal antibody. *Human Immunol.* **38**, 261-269.
- Takamiya, Y., Schönbach, K., Nokihara, K., Yamaguschi, M., Ferrone, S., Kano, K., Egawa, K. and Takiguschi, M. (1994). HLA-B\*3501-peptid interaction: role of anchor residues of peptides in their binding to HLA-B\*3501 molecules. *Int. Immunol.* **6**, 255-261.
- Thompson, J., Pope, T., Tung, J.-S., Chan, C., Hollis, G., Mark, G. and Johnson, K. S. (1996). Affinity maturation of high-affinity human monoclonal antibody against the third hypervariable loop of human immunodeficiency virus: use of phage display to improve affinity and broaden strain reactivity. *J. Mol. Biol.* **256**, 77-88.



- Tomlinson, I. M., Walter, G., Marks, J. D., Llewelyn, M. B. and Winter, G. (1992). The repertoire of human germline about fifty groups of VH segments with different hypervariable loops. *J. Mol. Biol.* **227**, 776-798.
- Tomlinson, I. M., Walter, G., Jones, P. T., Dear, P. H., Sonnhammer, L. L. and Winter, G. (1996). The imprint of somatic hypermutation on the repertoire of human germline V genes. *J. Mol. Biol.* **256**, 813-817.
- Tonegawa, S. (1983). Somatic generation of antibody diversity. *Nature* **302**, 575-581.
- Tramontano, A., Chothia, C. and Lesk, A. M. (1990). Framework residue 71 is a major determinant of the position and conformation of the second hypervariable region in the V<sub>H</sub> domains of immunoglobulins. *J. Mol. Biol.* **215**, 175-182.
- Uchanska-Ziegler, B., Wernet, P. and Ziegler, A. (1980). Rapid preparation of multiple cell samples for immunofluorescence analysis using microtiter plates. *J. Immunol. Methods* **39**, 95-93.
- Uchanska-Ziegler, B., Wernet, P. and Ziegler, A. (1983). Differentiation of human myeloid cell line (HL-60) toward granulocyte- and macrophage-like cells: comparison of cell surface antigen expression. *Hamatol. Bluttransfus.* **28**, 386-388.
- Uchanska-Ziegler, B., Nößner, E., Schenk, A., Ziegler, A. and Schendel, D. (1993). Soluble T cell receptor-like properties of an HLA-B35-specific monoclonal antibody (TÜ165). *Eur. J. Immunol.* **23**, 734-738.
- Uchanska-Ziegler, B., Qiao, X., Volz, A., Nissim, A. and Ziegler, A. (1998). *Methods Mol. Biol.*, in press.
- Urban, R. G., Chicz, R. M., Lane, W. S., Strominger, J. L., Rehm, A., Kenter, M. J. H., Uytde-Haag, F. G. C. M., Ploegh, H., Uchanska-Ziegler, B. and Ziegler, A. (1994). A subset of HLA-B27 molecules contains peptides much longer than nonamers. *Proc. Natl. Acad. Sci. USA* **91**, 1534-1538.
- Waldmann, T. A. (1991). Monoclonal antibodies in diagnosis and therapy. *Science* **252**, 1657-1661.
- Winter, G., Griffiths, A. D., Hawkins, R. E. and Hoogenboom, H. R. (1994). Making antibodies by phage display technology. *Annu. Rev. Immunol.* **12**, 433-455.
- Wu, T. T., Johnson, G. and Kabat, E. A. (1993). Length distribution of CDRH3 in antibodies. *Prot. Struct., Func. Genet.* **16**, 1-7.
- Van-Els, C; A., Zantvoort, E., Jacobs, N., Bakker, A., van Rood, J. J. and Goulmy, E. (1990). Graft-versus-host disease associated T helper cell responses specific for minor histocompatibility antigens are mainly restricted by HLA-DR molecules. *Bone-Marrow-Transplant.* **5**, 365-372.
- Vaughan, T. J., Willams, A. J., Pritchard, K., Osbourn, J. K., Pope, A. R., Earnshaw, J. C., McCafferty, J., Hodits, R. A., Wilton, J. and Johson, S. (1996). Human antibodies with sub-nanomolar affinities isolated from a large non-immunized phage display library. *Nature Biotechnol.* **14**, 309-314.
- Venet, A. and Walker, B. D. (1993). Cytotoxic T-cell epitopes in HIV/SIV infection. *AIDS* **7**, 117-126.
- Verhoeyen, M., Milstein, C. and Winter, G. (1988). Reshaping human antibodies: grafting an antilysozyme activity. *Science* **239**, 1534-1536.
- Volz, A., Fonatsch, C. and Ziegler, A. (1992). Regional mapping of the gene for autosomal dominant spinocerebellar ataxia (SCA1) by localizing the closely linked D6S89 locus to 6p24.2 p23.05. *Cytogenet. Cell Genet.* **60**, 37-39.
- Yang, W. P., Grenn, K., Pinz-Sweeney, S., Briones, A. T., Barton, D. R. and Barbas, C. F. (1995). CDR walking mutagenesis for the affinity maturation of a potent human anti-HIV-1 antibody in the picomolar range. *J. Mol. Biol.* **254**, 392-403.

Yanisch-Perron, C., Vieira, J. and Messing, J. (1985). Improved M13 phage cloning vectors and host strains: nucleotide sequences of the M13mp18 and pUC19 vectors. *Gene* **33**, 103-199.

Yewdell, J. W. and Bennink, J. R. (1992). Cell biology of antigen processing and presentation to major histocompatibility complex class I molecule-restricted T lymphocytes. *Adv. Immunol.* **52**, 1-123.

Yokota, T. Milenic, D. E., Whitlow, M. and Schlom, J. (1992). Rapid tumor penetration of a single-chain Fv and comparison with other immunoglobulin forms. *Cancer Res.* **52**, 3402-4308.

Zemmour, J., Little, A.-M., Schendel, D. J. and Parham, P. (1992). The HLA-A, B “negative” mutant cell line C1R expresses a novel HLA-B35 allele, which also has a point mutation in the translation initiation codon. *J. Immunol.* **148**, 1941-1948.

Ziegler, A. and Milstein, C. (1979). A small polypeptide different from  $\beta_2$ -microglobulin associated with human cell surface antigen. *Nature* **279**, 243-244.

Ziegler, A., Muller, C., Heinig, J., Radka, S. F., Kompf, J. and Fonatsch, C. (1985). Monosomy in a human lymphoma line induced by selection with a monoclonal antibody. *Immunology* **169**, 455-460.