

## 7 Literaturverzeichnis

Alam, S.M., Travers, P.J., Wung, J.L., Nasholds, W., Redpath, S., Jameson, S.C., and Gascoigne, N.R. (1996). T-cell-receptor affinity and thymocyte positive selection. *Nature* 381, 616-620.

Altfeld, M.A., et al. (2001). Identification of novel HLA-A2-restricted human immunodeficiency virus type 1-specific cytotoxic T-lymphocyte epitopes predicted by the HLA-A2 supertype peptide-binding motif. *J Virol* 75, 1301-1311.

Angelini, C., Bovo, G., Muselli, P., Mussi, C., Crippa, S., Caprotti, R., and Uggeri, F. (2006). Preoperative interleukin-2 immunotherapy in pancreatic cancer: preliminary results. *Hepatogastroenterology* 53, 141-144.

Anichini, A., Maccalli, C., Mortarini, R., Salvi, S., Mazzocchi, A., Squarcina, P., Herlyn, M., and Parmiani, G. (1993). Melanoma cells and normal melanocytes share antigens recognized by HLA-A2-restricted cytotoxic T cell clones from melanoma patients. *J Exp Med* 177, 989-998.

Atkins, M.B., et al. (1999). High-dose recombinant interleukin 2 therapy for patients with metastatic melanoma: analysis of 270 patients treated between 1985 and 1993. *J Clin Oncol* 17, 2105-2116.

Bachinsky, M.M., Guillen, D.E., Patel, S.R., Singleton, J., Chen, C., Soltis, D.A., and Tussey, L.G. (2005). Mapping and binding analysis of peptides derived from the tumor-associated antigen survivin for eight HLA alleles. *Cancer Immun* 5, 6.

Bachmann, H.S., Siffert, W., and Frey, U.H. (2003). Successful amplification of extremely GC-rich promoter regions using a novel 'slowdown PCR' technique. *Pharmacogenetics* 13, 759-766.

Berger, J.R. (2003). Progressive multifocal leukoencephalopathy in acquired immunodeficiency syndrome: explaining the high incidence and disproportionate frequency of the illness relative to other immunosuppressive conditions. *J Neurovirol* 9 Suppl 1, 38-41.

Bouvier, M., and Wiley, D.C. (1994). Importance of peptide amino and carboxyl termini to the stability of MHC class I molecules. *Science* 265, 398-402.

Bredenbeck, A., Losch, F.O., Sharav, T., Eichler-Mertens, M., Filter, M., Givehchi, A., Sterry, W., Wrede, P., and Walden, P. (2005). Identification of noncanonical melanoma-associated T cell epitopes for cancer immunotherapy. *J Immunol* 174, 6716-6724.

Burnet, F.M. (1970). The concept of immunological surveillance. *Prog Exp Tumor Res* 13, 1-27.

Burnet, M. (1957). Cancer; a biological approach. I. The processes of control. *Br Med J*, 779-786.

Cadigan, K.M., and Nusse, R. (1997). Wnt signaling: a common theme in animal development. *Genes Dev* 11, 3286-3305.

- Campbell, K.S., Backstrom, B.T., Tiefenthaler, G., and Palmer, E. (1994). CART: a conserved antigen receptor transmembrane motif. *Semin Immunol* 6, 393-410.
- Carbone, M., Rizzo, P., and Pass, H.I. (1997). Simian virus 40, poliovaccines and human tumors: a review of recent developments. *Oncogene* 15, 1877-1888.
- Castelli, C., Storkus, W.J., Maeurer, M.J., Martin, D.M., Huang, E.C., Pramanik, B.N., Nagabhushan, T.L., Parmiani, G., and Lotze, M.T. (1995). Mass spectrometric identification of a naturally processed melanoma peptide recognized by CD8<sup>+</sup> cytotoxic T lymphocytes. *J Exp Med* 181, 363-368.
- Cerundolo, V., Kelly, A., Elliott, T., Trowsdale, J., and Townsend, A. (1995). Genes encoded in the major histocompatibility complex affecting the generation of peptides for TAP transport. *Eur J Immunol* 25, 554-562.
- Chapiro, J., et al. (2006). Destructive cleavage of antigenic peptides either by the immunoproteasome or by the standard proteasome results in differential antigen presentation. *J Immunol* 176, 1053-1061.
- Chaux, P., Vantomme, V., Coulie, P., Boon, T., and van der Bruggen, P. (1998). Estimation of the frequencies of anti-MAGE-3 cytolytic T-lymphocyte precursors in blood from individuals without cancer. *Int J Cancer* 77, 538-542.
- Chen, M.L., Pittet, M.J., Gorelik, L., Flavell, R.A., Weissleder, R., von Boehmer, H., and Khazaie, K. (2005). Regulatory T cells suppress tumor-specific CD8 T cell cytotoxicity through TGF-beta signals in vivo. *Proc Natl Acad Sci U S A* 102, 419-424.
- Coral, S., Sigalotti, L., Altomonte, M., Engelsberg, A., Colizzi, F., Cattarossi, I., Maraskovsky, E., Jager, E., Seliger, B., and Maio, M. (2002). 5-aza-2'-deoxycytidine-induced expression of functional cancer testis antigens in human renal cell carcinoma: immunotherapeutic implications. *Clin Cancer Res* 8, 2690-2695.
- Corallini, A., Tognon, M., Negrini, M., Barbatani-Brodano, G. (2001). *Human Polyomaviruses: Molecular and Clinical Perspective*. Wiley-Liss: New York.
- Coulie, P.G., and Connerotte, T. (2005). Human tumor-specific T lymphocytes: does function matter more than number? *Curr Opin Immunol* 17, 320-325.
- David, A., et al. (2002). Unusual alternative splicing within the human kallikrein genes KLK2 and KLK3 gives rise to novel prostate-specific proteins. *J Biol Chem* 277, 18084-18090.
- De Smet, C., De Backer, O., Faraoni, I., Lurquin, C., Brasseur, F., and Boon, T. (1996). The activation of human gene MAGE-1 in tumor cells is correlated with genome-wide demethylation. *Proc Natl Acad Sci U S A* 93, 7149-7153.
- De Visser, K.E., Schumacher, T.N., and Kruisbeek, A.M. (2003). CD8<sup>+</sup> T cell tolerance and cancer immunotherapy. *J Immunother* 26, 1-11.
- del Guercio, M.F., Sidney, J., Hermanson, G., Perez, C., Grey, H.M., Kubo, R.T., and Sette, A. (1995). Binding of a peptide antigen to multiple HLA alleles allows definition of an A2-like supertype. *J Immunol* 154, 685-693.

- Del Valle, L., Gordon, J., Assimakopoulou, M., Enam, S., Geddes, J.F., Varakis, J.N., Katsetos, C.D., Croul, S., and Khalili, K. (2001). Detection of JC virus DNA sequences and expression of the viral regulatory protein T-antigen in tumors of the central nervous system. *Cancer Res* 61, 4287-4293.
- Demine, R., and Walden, P. (2005). Testing the role of gp96 as peptide chaperone in antigen processing. *J Biol Chem* 280, 17573-17578.
- DiBrino, M., Parker, K.C., Shiloach, J., Knierman, M., Lukszo, J., Turner, R.V., Biddison, W.E., and Coligan, J.E. (1993). Endogenous peptides bound to HLA-A3 possess a specific combination of anchor residues that permit identification of potential antigenic peptides. *Proc Natl Acad Sci U S A* 90, 1508-1512.
- Dong, Y., Demaria, S., Sun, X., Santori, F.R., Jesdale, B.M., De Groot, A.S., Rom, W.N., and Bushkin, Y. (2004). HLA-A2-restricted CD8<sup>+</sup>-cytotoxic-T-cell responses to novel epitopes in *Mycobacterium tuberculosis* superoxide dismutase, alanine dehydrogenase, and glutamine synthetase. *Infect Immun* 72, 2412-2415.
- Du Pasquier, R.A., et al. (2003). Low frequency of cytotoxic T lymphocytes against the novel HLA-A\*0201-restricted JC virus epitope VP1(p36) in patients with proven or possible progressive multifocal leukoencephalopathy. *J Virol* 77, 11918-11926.
- Du Pasquier, R.A., Schmitz, J.E., Jean-Jacques, J., Zheng, Y., Gordon, J., Khalili, K., Letvin, N.L., and Koralnik, I.J. (2004). Detection of JC virus-specific cytotoxic T lymphocytes in healthy individuals. *J Virol* 78, 10206-10210.
- Dudley, M.E., et al. (2002). A phase I study of nonmyeloablative chemotherapy and adoptive transfer of autologous tumor antigen-specific T lymphocytes in patients with metastatic melanoma. *J Immunother* 25, 243-251.
- Eggers, M., Boes-Fabian, B., Ruppert, T., Kloetzel, P.M., and Koszinowski, U.H. (1995). The cleavage preference of the proteasome governs the yield of antigenic peptides. *J Exp Med* 182, 1865-1870.
- Ehrlich, P. (1909). ueber den jetzigen Stand der Karzinomforschung. *Ned. Tijdschr. Geneesk.*, 273-290.
- Eleuteri, A.M., Kohanski, R.A., Cardozo, C., and Orłowski, M. (1997). Bovine spleen multicatalytic proteinase complex (proteasome). Replacement of X, Y, and Z subunits by LMP7, LMP2, and MECL1 and changes in properties and specificity. *J Biol Chem* 272, 11824-11831.
- Elkington, R., Walker, S., Crough, T., Menzies, M., Tellam, J., Bharadwaj, M., and Khanna, R. (2003). Ex vivo profiling of CD8<sup>+</sup>-T-cell responses to human cytomegalovirus reveals broad and multispecific reactivities in healthy virus carriers. *J Virol* 77, 5226-5240.
- Erbar, P. (2000). *Onkologie CompactLehrbuch*. Schattauer: Stuttgart.

Espada, J., Ballestar, E., Fraga, M.F., Villar-Garea, A., Juarranz, A., Stockert, J.C., Robertson, K.D., Fuks, F., and Esteller, M. (2004). Human DNA methyltransferase 1 is required for maintenance of the histone H3 modification pattern. *J Biol Chem* 279, 37175-37184.

Falk, K., Rotzschke, O., Stevanovic, S., Jung, G., and Rammensee, H.G. (1991). Allele-specific motifs revealed by sequencing of self-peptides eluted from MHC molecules. *Nature* 351, 290-296.

Filaci, G., et al. (2006). Frequency of telomerase-specific CD8+ T lymphocytes in patients with cancer. *Blood* 107, 1505-1512.

Filter, M., Mathias Eichler-Mertens Anne Bredenbeck Florian O Losch Tumenjargal Sharav Alireza Givehchi Peter Walden Paul Wrede. (2006). A Strategy for the Identification of Canonical and Non-canonical MHC I-binding Epitopes Using an ANN-based Epitope Prediction Algorithm. *QSAR & Combinatorial Science* 9999, NA.

Flad, T., et al. (1998). Direct identification of major histocompatibility complex class I-bound tumor-associated peptide antigens of a renal carcinoma cell line by a novel mass spectrometric method. *Cancer Res* 58, 5803-5811.

Flaswinkel, H., Barner, M., and Reth, M. (1995). The tyrosine activation motif as a target of protein tyrosine kinases and SH2 domains. *Semin Immunol* 7, 21-27.

Flower, D.R. (2003). Towards in silico prediction of immunogenic epitopes. *Trends Immunol* 24, 667-674.

Fraga, M.F., et al. (2005). Loss of acetylation at Lys16 and trimethylation at Lys20 of histone H4 is a common hallmark of human cancer. *Nat Genet* 37, 391-400.

Fremont, D.H., Matsumura, M., Stura, E.A., Peterson, P.A., and Wilson, I.A. (1992). Crystal structures of two viral peptides in complex with murine MHC class I H-2Kb. *Science* 257, 919-927.

Garrido, F., Ruiz-Cabello, F., Cabrera, T., Perez-Villar, J.J., Lopez-Botet, M., Duggan-Keen, M., and Stern, P.L. (1997). Implications for immunosurveillance of altered HLA class I phenotypes in human tumours. *Immunol Today* 18, 89-95.

Geier, E., Pfeifer, G., Wilm, M., Lucchiari-Hartz, M., Baumeister, W., Eichmann, K., and Niedermann, G. (1999). A giant protease with potential to substitute for some functions of the proteasome. *Science* 283, 978-981.

Gonzalo, J.A., Delaney, T., Corcoran, J., Goodearl, A., Gutierrez-Ramos, J.C., and Coyle, A.J. (2001). Cutting edge: the related molecules CD28 and inducible costimulator deliver both unique and complementary signals required for optimal T cell activation. *J Immunol* 166, 1-5.

Graff-Dubois, S., Faure, O., Gross, D.A., Alves, P., Scardino, A., Chouaib, S., Lemonnier, F.A., and Kosmatopoulos, K. (2002). Generation of CTL recognizing an HLA-A\*0201-restricted epitope shared by MAGE-A1, -A2, -A3, -A4, -A6, -A10, and -A12 tumor antigens: implication in a broad-spectrum tumor immunotherapy. *J Immunol* 169, 575-580.

- Griffin, T.A., Nandi, D., Cruz, M., Fehling, H.J., Kaer, L.V., Monaco, J.J., and Colbert, R.A. (1998). Immunoproteasome assembly: cooperative incorporation of interferon gamma (IFN-gamma)-inducible subunits. *J Exp Med* 187, 97-104.
- Groettrup, M., Standera, S., Stohwasser, R., and Kloetzel, P.M. (1997). The subunits MECL-1 and LMP2 are mutually required for incorporation into the 20S proteasome. *Proc Natl Acad Sci U S A* 94, 8970-8975.
- Groll, M., Bajorek, M., Kohler, A., Moroder, L., Rubin, D.M., Huber, R., Glickman, M.H., and Finley, D. (2000). A gated channel into the proteasome core particle. *Nat Struct Biol* 7, 1062-1067.
- Groll, M., Ditzel, L., Lowe, J., Stock, D., Bochtler, M., Bartunik, H.D., and Huber, R. (1997). Structure of 20S proteasome from yeast at 2.4 Å resolution. *Nature* 386, 463-471.
- Gundlach, B.R., Wiesmuller, K.H., Junt, T., Kienle, S., Jung, G., and Walden, P. (1996). Specificity and degeneracy of minor histocompatibility antigen-specific MHC-restricted CTL. *J Immunol* 156, 3645-3651.
- Gura, T. (2002). Therapeutic antibodies: magic bullets hit the target. *Nature* 417, 584-586.
- Hammer, J., Bono, E., Gallazzi, F., Belunis, C., Nagy, Z., and Sinigaglia, F. (1994). Precise prediction of major histocompatibility complex class II-peptide interaction based on peptide side chain scanning. *J Exp Med* 180, 2353-2358.
- Heiser, A., Maurice, M.A., Yancey, D.R., Coleman, D.M., Dahm, P., and Vieweg, J. (2001). Human dendritic cells transfected with renal tumor RNA stimulate polyclonal T-cell responses against antigens expressed by primary and metastatic tumors. *Cancer Res* 61, 3388-3393.
- Ikeda, T., Yoshinaga, K., Semba, S., Kondo, E., Ohmori, H., and Horii, A. (2000). Mutational analysis of the CTNNB1 (beta-catenin) gene in human endometrial cancer: frequent mutations at codon 34 that cause nuclear accumulation. *Oncol Rep* 7, 323-326.
- Janeway Charles A., T.P., Walport Mark, Shlomchik Mark. (2001). *Immunobiology*. Garland Publishing: New York.
- Jassim, A., Ollier, W., Payne, A., Biro, A., Oliver, R.T., and Festenstein, H. (1989). Analysis of HLA antigens on germ cells in human semen. *Eur J Immunol* 19, 1215-1220.
- Jenuwein, T., and Allis, C.D. (2001). Translating the histone code. *Science* 293, 1074-1080.
- Johnson, S.A., Pleiman, C.M., Pao, L., Schneringer, J., Hippen, K., and Cambier, J.C. (1995). Phosphorylated immunoreceptor signaling motifs (ITAMs) exhibit unique abilities to bind and activate Lyn and Syk tyrosine kinases. *J Immunol* 155, 4596-4603.
- Kaminski, M.S., et al. (2000). Radioimmunotherapy with iodine (131)I tositumomab for relapsed or refractory B-cell non-Hodgkin lymphoma: updated results and long-term follow-up of the University of Michigan experience. *Blood* 96, 1259-1266.

- Kesmir, C., Nussbaum, A.K., Schild, H., Detours, V., and Brunak, S. (2002). Prediction of proteasome cleavage motifs by neural networks. *Protein Eng* 15, 287-296.
- Kessler, B., Hudrisier, D., Schroeter, M., Tschopp, J., Cerottini, J.C., and Luescher, I.F. (1998). Peptide modification or blocking of CD8, resulting in weak TCR signaling, can activate CTL for Fas- but not perforin-dependent cytotoxicity or cytokine production. *J Immunol* 161, 6939-6946.
- Kiessling, A., Stevanovic, S., Fussel, S., Weigle, B., Rieger, M.A., Temme, A., Rieber, E.P., and Schmitz, M. (2004). Identification of an HLA-A\*0201-restricted T-cell epitope derived from the prostate cancer-associated protein prostein. *Br J Cancer* 90, 1034-1040.
- Kischkel, F.C., Hellbardt, S., Behrmann, I., Germer, M., Pawlita, M., Krammer, P.H., and Peter, M.E. (1995). Cytotoxicity-dependent APO-1 (Fas/CD95)-associated proteins form a death-inducing signaling complex (DISC) with the receptor. *Embo J* 14, 5579-5588.
- Kisselev, A.F., Garcia-Calvo, M., Overkleeft, H.S., Peterson, E., Pennington, M.W., Ploegh, H.L., Thornberry, N.A., and Goldberg, A.L. (2003). The caspase-like sites of proteasomes, their substrate specificity, new inhibitors and substrates, and allosteric interactions with the trypsin-like sites. *J Biol Chem* 278, 35869-35877.
- Kloetzel, P.M. (2001). Antigen processing by the proteasome. *Nat Rev Mol Cell Biol* 2, 179-187.
- Koyama, S., Maruyama, T., Adachi, S., and Nozue, M. (1998). Expression of costimulatory molecules, B7-1 and B7-2 on human gastric carcinoma. *J Cancer Res Clin Oncol* 124, 383-388.
- Krackhardt, A.M., Witzens, M., Harig, S., Hodi, F.S., Zauls, A.J., Chessia, M., Barrett, P., and Gribben, J.G. (2002). Identification of tumor-associated antigens in chronic lymphocytic leukemia by SEREX. *Blood* 100, 2123-2131.
- Krieg, A.M. (2000). The role of CpG motifs in innate immunity. *Curr Opin Immunol* 12, 35-43.
- Krymskaya, L., Sharma, M.C., Martinez, J., Haq, W., Huang, E.C., Limaye, A.P., Diamond, D.J., and Lacey, S.F. (2005). Cross-reactivity of T lymphocytes recognizing a human cytotoxic T-lymphocyte epitope within BK and JC virus VP1 polypeptides. *J Virol* 79, 11170-11178.
- Kubo, R.T., et al. (1994). Definition of specific peptide motifs for four major HLA-A alleles. *J Immunol* 152, 3913-3924.
- Kuttler, C., Nussbaum, A.K., Dick, T.P., Rammensee, H.G., Schild, H., and Haderler, K.P. (2000). An algorithm for the prediction of proteasomal cleavages. *J Mol Biol* 298, 417-429.
- Lenardo, M.J. (1996). Fas and the art of lymphocyte maintenance. *J Exp Med* 183, 721-724.
- Levy, F., Burri, L., Morel, S., Peitrequin, A.L., Levy, N., Bachi, A., Hellman, U., Van den Eynde, B.J., and Servis, C. (2002). The final N-terminal trimming of a subaminoterminal

proline-containing HLA class I-restricted antigenic peptide in the cytosol is mediated by two peptidases. *J Immunol* *169*, 4161-4171.

Lienard, D., et al. (2004). Ex vivo detectable activation of Melan-A-specific T cells correlating with inflammatory skin reactions in melanoma patients vaccinated with peptides in IFA. *Cancer Immunol* *4*, 4.

Lin, C., Mak, S., Meitner, P.A., Wolf, J.M., Bluman, E.M., Block, J.A., and Terek, R.M. (2002). Cancer/testis antigen CSAGE is concurrently expressed with MAGE in chondrosarcoma. *Gene* *285*, 269-278.

Linnemann, T., Brock, C., Sparbier, K., Muche, M., Mielke, A., Lukowsky, A., Sterry, W., Kaltoft, K., Wiesmuller, K.H., and Walden, P. (1998). Identification of epitopes for CTL-specific cytotoxic T lymphocytes. *Adv Exp Med Biol* *451*, 231-235.

Loftus, D.J., Castelli, C., Clay, T.M., Squarcina, P., Marincola, F.M., Nishimura, M.I., Parmiani, G., Appella, E., and Rivoltini, L. (1996). Identification of epitope mimics recognized by CTL reactive to the melanoma/melanocyte-derived peptide MART-1(27-35). *J Exp Med* *184*, 647-657.

Mandrizzato, S., Rossi, E., Bernardi, F., Tosello, V., Macino, B., Basso, G., Chiarion-Sileni, V., Rossi, C.R., Montesco, C., and Zanovello, P. (2002). Large and dissimilar repertoire of Melan-A/MART-1-specific CTL in metastatic lesions and blood of a melanoma patient. *J Immunol* *169*, 4017-4024.

Mason, L.H., Willette-Brown, J., Anderson, S.K., Gosselin, P., Shores, E.W., Love, P.E., Ortaldo, J.R., and McVicar, D.W. (1998). Characterization of an associated 16-kDa tyrosine phosphoprotein required for Ly-49D signal transduction. *J Immunol* *160*, 4148-4152.

Matsueda, S., Takedatsu, H., Yao, A., Tanaka, M., Noguchi, M., Itoh, K., and Harada, M. (2005). Identification of peptide vaccine candidates for prostate cancer patients with HLA-A3 supertype alleles. *Clin Cancer Res* *11*, 6933-6943.

Matsumura, M., Fremont, D.H., Peterson, P.A., and Wilson, I.A. (1992). Emerging principles for the recognition of peptide antigens by MHC class I molecules. *Science* *257*, 927-934.

Meier, J.T., and Lewis, S.M. (1993). P nucleotides in V(D)J recombination: a fine-structure analysis. *Mol Cell Biol* *13*, 1078-1092.

Ng, H.H., and Bird, A. (1999). DNA methylation and chromatin modification. *Curr Opin Genet Dev* *9*, 158-163.

Norkin, L.C. (1999). Simian virus 40 infection via MHC class I molecules and caveolae. *Immunol Rev* *168*, 13-22.

Novellino, L., Castelli, C., and Parmiani, G. (2005). A listing of human tumor antigens recognized by T cells: March 2004 update. *Cancer Immunol Immunother* *54*, 187-207.

Nussbaum, A.K., et al. (1998). Cleavage motifs of the yeast 20S proteasome beta subunits deduced from digests of enolase 1. *Proc Natl Acad Sci U S A* *95*, 12504-12509.

- Nussbaum, A.K., Kuttler, C., Haderer, K.P., Rammensee, H.G., and Schild, H. (2001). PAMProC: a prediction algorithm for proteasomal cleavages available on the WWW. *Immunogenetics* 53, 87-94.
- Orlowski, M., Cardozo, C., and Michaud, C. (1993). Evidence for the presence of five distinct proteolytic components in the pituitary multicatalytic proteinase complex. Properties of two components cleaving bonds on the carboxyl side of branched chain and small neutral amino acids. *Biochemistry* 32, 1563-1572.
- Ortmann, B., et al. (1997). A critical role for tapasin in the assembly and function of multimeric MHC class I-TAP complexes. *Science* 277, 1306-1309.
- Parker, K.C., Bednarek, M.A., and Coligan, J.E. (1994). Scheme for ranking potential HLA-A2 binding peptides based on independent binding of individual peptide side-chains. *J Immunol* 152, 163-175.
- Parkhurst, M.R., Fitzgerald, E.B., Southwood, S., Sette, A., Rosenberg, S.A., and Kawakami, Y. (1998). Identification of a shared HLA-A\*0201-restricted T-cell epitope from the melanoma antigen tyrosinase-related protein 2 (TRP2). *Cancer Res* 58, 4895-4901.
- Parkhurst, M.R., Salgaller, M.L., Southwood, S., Robbins, P.F., Sette, A., Rosenberg, S.A., and Kawakami, Y. (1996). Improved induction of melanoma-reactive CTL with peptides from the melanoma antigen gp100 modified at HLA-A\*0201-binding residues. *J Immunol* 157, 2539-2548.
- Parmiani, G. (2002). Vaccine therapy of cancer. *Suppl Tumori* 1, S28.
- Parmiani, G., Castelli, C., Dalerba, P., Mortarini, R., Rivoltini, L., Marincola, F.M., and Anichini, A. (2002). Cancer immunotherapy with peptide-based vaccines: what have we achieved? Where are we going? *J Natl Cancer Inst* 94, 805-818.
- Peggs, K.S., Quezada, S.A., Korman, A.J., and Allison, J.P. (2006). Principles and use of anti-CTLA4 antibody in human cancer immunotherapy. *Curr Opin Immunol* 18, 206-213.
- Pelte, C., Cherepnev, G., Wang, Y., Schoenemann, C., Volk, H.D., and Kern, F. (2004). Random screening of proteins for HLA-A\*0201-binding nine-amino acid peptides is not sufficient for identifying CD8 T cell epitopes recognized in the context of HLA-A\*0201. *J Immunol* 172, 6783-6789.
- Petrone, P.M., and Garcia, A.E. (2004). MHC-peptide binding is assisted by bound water molecules. *J Mol Biol* 338, 419-435.
- Piccart-Gebhart, M.J., et al. (2005). Trastuzumab after adjuvant chemotherapy in HER2-positive breast cancer. *N Engl J Med* 353, 1659-1672.
- Pipas, J.M., and Levine, A.J. (2001). Role of T antigen interactions with p53 in tumorigenesis. *Semin Cancer Biol* 11, 23-30.
- Polyak, K., and Riggins, G.J. (2001). Gene discovery using the serial analysis of gene expression technique: implications for cancer research. *J Clin Oncol* 19, 2948-2958.



- Ramage, J.M., Metheringham, R., Conn, A., Spendlove, I., Moss, R.S., Patton, D.T., Murray, J.C., Rees, R.C., and Durrant, L.G. (2004). Identification of an HLA-A\*0201 cytotoxic T lymphocyte epitope specific to the endothelial antigen Tie-2. *Int J Cancer* *110*, 245-250.
- Rammensee, H., Bachmann, J., Emmerich, N.P., Bachor, O.A., and Stevanovic, S. (1999). SYFPEITHI: database for MHC ligands and peptide motifs. *Immunogenetics* *50*, 213-219.
- Rammensee, H.G. (1995). Chemistry of peptides associated with MHC class I and class II molecules. *Curr Opin Immunol* *7*, 85-96.
- Retiere, C., Halary, F., Peyrat, M.A., Le Deist, F., Bonneville, M., and Hallet, M.M. (1999). The mechanism of chromosome 7 inversion in human lymphocytes expressing chimeric gamma beta TCR. *J Immunol* *162*, 903-910.
- Reynolds, S.R., Celis, E., Sette, A., Oratz, R., Shapiro, R.L., Johnston, D., Fotino, M., and Bystry, J.C. (2000). Identification of HLA-A\*03, A\*11 and B\*07-restricted melanoma-associated peptides that are immunogenic in vivo by vaccine-induced immune response (VIIR) analysis. *J Immunol Methods* *244*, 59-67.
- Riley, J.P., Rosenberg, S.A., and Parkhurst, M.R. (2003). Stimulation of tumor-reactive T lymphocytes using mixtures of synthetic peptides derived from tumor-associated antigens with diverse MHC binding affinities. *J Immunol Methods* *276*, 103-119.
- Robbins, P.F., and Kawakami, Y. (1996). Human tumor antigens recognized by T cells. *Curr Opin Immunol* *8*, 628-636.
- Rock, K.L., York, I.A., and Goldberg, A.L. (2004). Post-proteasomal antigen processing for major histocompatibility complex class I presentation. *Nat Immunol* *5*, 670-677.
- Rock, K.L., York, I.A., Saric, T., and Goldberg, A.L. (2002). Protein degradation and the generation of MHC class I-presented peptides. *Adv Immunol* *80*, 1-70.
- Rosenberg, S.A. (2001). Progress in human tumour immunology and immunotherapy. *Nature* *411*, 380-384.
- Rosenberg, S.A., et al. (1998). Immunologic and therapeutic evaluation of a synthetic peptide vaccine for the treatment of patients with metastatic melanoma. *Nat Med* *4*, 321-327.
- Rubio, V., Stuge, T.B., Singh, N., Betts, M.R., Weber, J.S., Roederer, M., and Lee, P.P. (2003). Ex vivo identification, isolation and analysis of tumor-cytolytic T cells. *Nat Med* *9*, 1377-1382.
- Rudensky, A., Preston-Hurlburt, P., Hong, S.C., Barlow, A., and Janeway, C.A., Jr. (1991). Sequence analysis of peptides bound to MHC class II molecules. *Nature* *353*, 622-627.
- Rundell, K., and Parakati, R. (2001). The role of the SV40 ST antigen in cell growth promotion and transformation. *Semin Cancer Biol* *11*, 5-13.
- Ruppert, J., Sidney, J., Celis, E., Kubo, R.T., Grey, H.M., and Sette, A. (1993). Prominent role of secondary anchor residues in peptide binding to HLA-A2.1 molecules. *Cell* *74*, 929-937.

- Saenz-Robles, M.T., Sullivan, C.S., and Pipas, J.M. (2001). Transforming functions of Simian Virus 40. *Oncogene* 20, 7899-7907.
- Safak, M., and Khalili, K. (2003). An overview: Human polyomavirus JC virus and its associated disorders. *J Neurovirol* 9 *Suppl* 1, 3-9.
- Scardino, A., et al. (2002). HER-2/neu and hTERT cryptic epitopes as novel targets for broad spectrum tumor immunotherapy. *J Immunol* 168, 5900-5906.
- Schaed, S.G., et al. (2002). T-cell responses against tyrosinase 368-376(370D) peptide in HLA\*A0201+ melanoma patients: randomized trial comparing incomplete Freund's adjuvant, granulocyte macrophage colony-stimulating factor, and QS-21 as immunological adjuvants. *Clin Cancer Res* 8, 967-972.
- Schell, T.D., Lippolis, J.D., and Tevethia, S.S. (2001). Cytotoxic T lymphocytes from HLA-A2.1 transgenic mice define a potential human epitope from simian virus 40 large T antigen. *Cancer Res* 61, 873-879.
- Schraven, B., Ratnofsky, S., Gaumont, Y., Lindegger, H., Kirchgessner, H., Bruyns, E., Moebius, U., and Meuer, S.C. (1994). Identification of a novel dimeric phosphoprotein (PP29/30) associated with signaling receptors in human T lymphocytes and natural killer cells. *J Exp Med* 180, 897-906.
- Sebzda, E., Mariathasan, S., Ohteki, T., Jones, R., Bachmann, M.F., and Ohashi, P.S. (1999). Selection of the T cell repertoire. *Annu Rev Immunol* 17, 829-874.
- Seifert, U., et al. (2003). An essential role for tripeptidyl peptidase in the generation of an MHC class I epitope. *Nat Immunol* 4, 375-379.
- Sensi, M., Pellegatta, S., Vegetti, C., Nicolini, G., Parmiani, G., and Anichini, A. (2002). Identification of a novel gp100/pMel17 peptide presented by HLA-A\*6801 and recognized on human melanoma by cytolytic T cell clones. *Tissue Antigens* 59, 273-279.
- Serwold, T., Gonzalez, F., Kim, J., Jacob, R., and Shastri, N. (2002). ERAAP customizes peptides for MHC class I molecules in the endoplasmic reticulum. *Nature* 419, 480-483.
- Sherev, D.A., Hongo, R.H., and Goldschlager, N. (2003). Pseudo-cross-stimulation due to first degree AV block. *Pacing Clin Electrophysiol* 26, 1762-1764.
- Sibille, C., Gould, K.G., Willard-Gallo, K., Thomson, S., Rivett, A.J., Powis, S., Butcher, G.W., and De Baetselier, P. (1995). LMP2+ proteasomes are required for the presentation of specific antigens to cytotoxic T lymphocytes. *Curr Biol* 5, 923-930.
- Sidney, J., Grey, H.M., Southwood, S., Celis, E., Wentworth, P.A., del Guercio, M.F., Kubo, R.T., Chesnut, R.W., and Sette, A. (1996a). Definition of an HLA-A3-like supermotif demonstrates the overlapping peptide-binding repertoires of common HLA molecules. *Hum Immunol* 45, 79-93.

Sidney, J., Southwood, S., del Guercio, M.F., Grey, H.M., Chesnut, R.W., Kubo, R.T., and Sette, A. (1996b). Specificity and degeneracy in peptide binding to HLA-B7-like class I molecules. *J Immunol* 157, 3480-3490.

Sidney, J., Southwood, S., and Sette, A. (2005). Classification of A1- and A24-supertype molecules by analysis of their MHC-peptide binding repertoires. *Immunogenetics* 57, 393-408.

Sigalotti, L., Coral, S., Nardi, G., Spessotto, A., Cortini, E., Cattarossi, I., Colizzi, F., Altomonte, M., and Maio, M. (2002). Promoter methylation controls the expression of MAGE2, 3 and 4 genes in human cutaneous melanoma. *J Immunother* 25, 16-26.

Sigalotti, L., Fratta, E., Coral, S., Tanzarella, S., Danielli, R., Colizzi, F., Fonsatti, E., Traversari, C., Altomonte, M., and Maio, M. (2004). Intratumor heterogeneity of cancer/testis antigens expression in human cutaneous melanoma is methylation-regulated and functionally reverted by 5-aza-2'-deoxycytidine. *Cancer Res* 64, 9167-9171.

Sijts, A.J., Standera, S., Toes, R.E., Ruppert, T., Beekman, N.J., van Veelen, P.A., Ossendorp, F.A., Melief, C.J., and Kloetzel, P.M. (2000). MHC class I antigen processing of an adenovirus CTL epitope is linked to the levels of immunoproteasomes in infected cells. *J Immunol* 164, 4500-4506.

Silva, C.L., and Lowrie, D.B. (2000). Identification and characterization of murine cytotoxic T cells that kill *Mycobacterium tuberculosis*. *Infect Immun* 68, 3269-3274.

Simmons, D.T. (2000). SV40 large T antigen functions in DNA replication and transformation. *Adv Virus Res* 55, 75-134.

Smith, J.W., 2nd, et al. (2003). Adjuvant immunization of HLA-A2-positive melanoma patients with a modified gp100 peptide induces peptide-specific CD8<sup>+</sup> T-cell responses. *J Clin Oncol* 21, 1562-1573.

Sparbier, K., and Walden, P. (1999). T cell receptor specificity and mimotopes. *Curr Opin Immunol* 11, 214-218.

Squier, M.K., and Cohen, J.J. (1994). Cell-mediated cytotoxic mechanisms. *Curr Opin Immunol* 6, 447-452.

Strickler, H.D. (2001). A multicenter evaluation of assays for detection of SV40 DNA and results in masked mesothelioma specimens. *Cancer Epidemiol Biomarkers Prev* 10, 523-532.

Sun, Y., Song, M., Stevanovic, S., Jankowiak, C., Paschen, A., Rammensee, H.G., and Schadendorf, D. (2000). Identification of a new HLA-A(\*)0201-restricted T-cell epitope from the tyrosinase-related protein 2 (TRP2) melanoma antigen. *Int J Cancer* 87, 399-404.

Surh, C.D., and Sprent, J. (1994). T-cell apoptosis detected in situ during positive and negative selection in the thymus. *Nature* 372, 100-103.

Tanaka, R., et al. (2004). Over-expression of the testis-specific gene TSGA10 in cancers and its immunogenicity. *Microbiol Immunol* 48, 339-345.

Tanzarella, S., Russo, V., Lionello, I., Dalerba, P., Rigatti, D., Bordignon, C., and Traversari, C. (1999). Identification of a promiscuous T-cell epitope encoded by multiple members of the MAGE family. *Cancer Res* 59, 2668-2674.

Testa, J.R., Carbone, M., Hirvonen, A., Khalili, K., Krynska, B., Linnainmaa, K., Pooley, F.D., Rizzo, P., Rusch, V., and Xiao, G.H. (1998). A multi-institutional study confirms the presence and expression of simian virus 40 in human malignant mesotheliomas. *Cancer Res* 58, 4505-4509.

Theinert, S.M., Pronest, M.M., Peris, K., Sterry, W., and Walden, P. (2005). Identification of the testis-specific protein 10 (TSGA10) as serologically defined tumour-associated antigen in primary cutaneous T-cell lymphoma. *Br J Dermatol* 153, 639-641.

Thomas, L. (1959). *Cellular and Humoral Aspects of the Hypersensitive States*. Hoeber-Harper: New York.

Thompson, L.W., Garbee, C.F., Hibbitts, S., Brinckerhoff, L.H., Pierce, R.A., Chianese-Bullock, K.A., Deacon, D.H., Engelhard, V.H., and Slingluff, C.L., Jr. (2004). Competition among peptides in melanoma vaccines for binding to MHC molecules. *J Immunother* 27, 425-431.

Turner, B., et al. (1999). Vaccination with mage-3A1 peptide-pulsed mature, monocyte-derived dendritic cells expands specific cytotoxic T cells and induces regression of some metastases in advanced stage IV melanoma. *J Exp Med* 190, 1669-1678.

Trefzer, U., Herberth, G., Wohlan, K., Milling, A., Thiemann, M., Sherev, T., Sparbier, K., Sterry, W., and Walden, P. (2004). Vaccination with hybrids of tumor and dendritic cells induces tumor-specific T-cell and clinical responses in melanoma stage III and IV patients. *Int J Cancer* 110, 730-740.

Udaka, K., Wiesmuller, K.H., Kienle, S., Jung, G., and Walden, P. (1995a). Decrypting the structure of major histocompatibility complex class I-restricted cytotoxic T lymphocyte epitopes with complex peptide libraries. *J Exp Med* 181, 2097-2108.

Udaka, K., Wiesmuller, K.H., Kienle, S., Jung, G., and Walden, P. (1995b). Tolerance to amino acid variations in peptides binding to the major histocompatibility complex class I protein H-2Kb. *J Biol Chem* 270, 24130-24134.

Valmori, D., Fonteneau, J.F., Lizana, C.M., Gervois, N., Lienard, D., Rimoldi, D., Jongeneel, V., Jotereau, F., Cerottini, J.C., and Romero, P. (1998). Enhanced generation of specific tumor-reactive CTL in vitro by selected Melan-A/MART-1 immunodominant peptide analogues. *J Immunol* 160, 1750-1758.

van der Bruggen, P., Traversari, C., Chomez, P., Lurquin, C., De Plaen, E., Van den Eynde, B., Knuth, A., and Boon, T. (1991). A gene encoding an antigen recognized by cytolytic T lymphocytes on a human melanoma. *Science* 254, 1643-1647.

Velders, M.P., Macedo, M.F., Provenzano, M., Elmishad, A.G., Holzhutter, H.G., Carbone, M., and Kast, W.M. (2001). Human T cell responses to endogenously presented HLA-A\*0201 restricted peptides of Simian virus 40 large T antigen. *J Cell Biochem* 82, 155-162.

Vidal, K., Hsu, B.L., Williams, C.B., and Allen, P.M. (1996). Endogenous altered peptide ligands can affect peripheral T cell responses. *J Exp Med* 183, 1311-1321.

Wagner, C., Neumann, F., Kubuschok, B., Regitz, E., Mischo, A., Stevanovic, S., Friedrich, M., Schmidt, W., Rammensee, H.G., and Pfreundschuh, M. (2003). Identification of an HLA-A\*02 restricted immunogenic peptide derived from the cancer testis antigen HOM-MEL-40/SSX2. *Cancer Immun* 3, 18.

Wang, H.Y., Lee, D.A., Peng, G., Guo, Z., Li, Y., Kiniwa, Y., Shevach, E.M., and Wang, R.F. (2004). Tumor-specific human CD4<sup>+</sup> regulatory T cells and their ligands: implications for immunotherapy. *Immunity* 20, 107-118.

Wang, R.F., Appella, E., Kawakami, Y., Kang, X., and Rosenberg, S.A. (1996). Identification of TRP-2 as a human tumor antigen recognized by cytotoxic T lymphocytes. *J Exp Med* 184, 2207-2216.

Warren, T.L., Bhatia, S.K., Acosta, A.M., Dahle, C.E., Ratliff, T.L., Krieg, A.M., and Weiner, G.J. (2000). APC stimulated by CpG oligodeoxynucleotide enhance activation of MHC class I-restricted T cells. *J Immunol* 165, 6244-6251.

Watanabe, Y., et al. (2006). Characterization of preexisting humoral immunity specific for two cancer-testis antigens overexpressed at the mRNA level in non-small cell lung cancer. *Cancer Immun* 6, 3.

Waterhouse, N.J., Clarke, C.J., Sedelies, K.A., Teng, M.W., and Trapani, J.A. (2004). Cytotoxic lymphocytes; instigators of dramatic target cell death. *Biochem Pharmacol* 68, 1033-1040.

Wei, G., Liu, C.K., and Atwood, W.J. (2000). JC virus binds to primary human glial cells, tonsillar stromal cells, and B-lymphocytes, but not to T lymphocytes. *J Neurovirol* 6, 127-136.

Williams, C.B., Engle, D.L., Kersh, G.J., Michael White, J., and Allen, P.M. (1999). A kinetic threshold between negative and positive selection based on the longevity of the T cell receptor-ligand complex. *J Exp Med* 189, 1531-1544.

Wolfel, T., Hauer, M., Schneider, J., Serrano, M., Wolfel, C., Klehmann-Hieb, E., De Plaen, E., Hankeln, T., Meyer zum Buschenfelde, K.H., and Beach, D. (1995). A p16INK4a-insensitive CDK4 mutant targeted by cytolytic T lymphocytes in a human melanoma. *Science* 269, 1281-1284.

Wucherpfennig, K.W. (2004). T cell receptor crossreactivity as a general property of T cell recognition. *Mol Immunol* 40, 1009-1017.

York, I.A., Goldberg, A.L., Mo, X.Y., and Rock, K.L. (1999). Proteolysis and class I major histocompatibility complex antigen presentation. *Immunol Rev* 172, 49-66.

Zhu, B., et al. (2003). Identification of HLA-A\*0201-restricted cytotoxic T lymphocyte epitope from TRAG-3 antigen. *Clin Cancer Res* 9, 1850-1857.

zur Hausen, H. (2000). Papillomaviruses causing cancer: evasion from host-cell control in early events in carcinogenesis. *J Natl Cancer Inst* 92, 690-698.