

References

- AARNOUDSE, C.A., KRUSE, M., KONOPITZKY, R., BROUWENSTIJN, N., and SCHRIER, P.I. (2002). TCR reconstitution in Jurkat reporter cells facilitates the identification of novel tumor antigens by cDNA expression cloning. *Int J Cancer* **99**, 7-13.
- ABRAMS, S.I., STANZIALE, S.F., LUNIN, S.D., ZAREMBA, S., and SCHLOM, J. (1996). Identification of overlapping epitopes in mutant ras oncogene peptides that activate CD4+ and CD8+ T cell responses. *Eur J Immunol* **26**, 435-443.
- AGARWAL, M., AUSTIN, T.W., MOREL, F., CHEN, J., BOHNLEIN, E., and PLAVEC, I. (1998). Scaffold attachment region-mediated enhancement of retroviral vector expression in primary T cells. *J Virol* **72**, 3720-3728.
- ALEXANDROFF, A.B., JACKSON, A.M., O'DONNELL, M.A., and JAMES, K. (1999). BCG immunotherapy of bladder cancer: 20 years on. *Lancet* **353**, 1689-1694.
- ANTONY, P.A., PICCIRILLO, C.A., AKPINARLI, A., FINKELSTEIN, S.E., SPEISS, P.J., SURMAN, D.R., PALMER, D.C., CHAN, C.C., KLEBANOFF, C.A., OVERWIJK, W.W., ROSENBERG, S.A., and RESTIFO, N.P. (2005). CD8+ T cell immunity against a tumor/self-antigen is augmented by CD4+ T helper cells and hindered by naturally occurring T regulatory cells. *J Immunol* **174**, 2591-2601.
- ARSTILA, T.P., CASROUGE, A., BARON, V., EVEN, J., KANELLOPOULOS, J., and KOURILSKY, P. (1999). A direct estimate of the human alphabeta T cell receptor diversity. *Science* **286**, 958-961.
- AWWAD, M., and NORTH, R.J. (1988). Immunologically mediated regression of a murine lymphoma after treatment with anti-L3T4 antibody. A consequence of removing L3T4+ suppressor T cells from a host generating predominantly Lyt-2+ T cell-mediated immunity. *J Exp Med* **168**, 2193-2206.
- BACUS, S.S., STANCOVSKI, I., HUBERMAN, E., CHIN, D., HURWITZ, E., MILLS, G.B., ULLRICH, A., SELA, M., and YARDEN, Y. (1992). Tumor-inhibitory monoclonal antibodies to the HER-2/Neu receptor induce differentiation of human breast cancer cells. *Cancer Res* **52**, 2580-2589.
- BASOMBARIO, M.A., and PREHN, R.T. (1972). Antigenic diversity of tumors chemically induced within the progeny of a single cell. *Int J Cancer* **10**, 1-8.
- BEECHAM, E.J., ORTIZ-PUJOLS, S., and JUNGHANS, R.P. (2000). Dynamics of tumor cell killing by human T lymphocytes armed with an anti-carcinoembryonic antigen chimeric immunoglobulin T-cell receptor. *J Immunother* **23**, 332-343.
- BELLDEGRUN, A., MUUL, L.M., and ROSENBERG, S.A. (1988). Interleukin 2 expanded tumor-infiltrating lymphocytes in human renal cell cancer: isolation, characterization, and antitumor activity. *Cancer Res* **48**, 206-214.
- BERGER, C., HUANG, M.L., GOUGH, M., GREENBERG, P.D., RIDDELL, S.R., and KIEM, H.P. (2001). Nonmyeloablative immunosuppressive regimen prolongs *In vivo* persistence of gene-modified autologous T cells in a nonhuman primate model. *J Virol* **75**, 799-808.
- BERLIOZ, C., and DARLIX, J.L. (1995). An internal ribosomal entry mechanism promotes translation of murine leukemia virus gag polyprotein precursors. *J Virol* **69**, 2214-2222.
- BITTON, N., GOROCHOV, G., DEBRE, P., and ESHHAR, Z. (1999). Gene therapy approaches to HIV-infection: immunological strategies: use of T bodies and universal receptors to redirect cytolytic T-cells. *Front Biosci* **4**, D386-393.
- BLEUMER, I., KNUTH, A., OOSTERWIJK, E., HOFMANN, R., VARGA, Z., LAMERS, C., KRUIT, W., MELCHIOR, S., MALA, C., ULLRICH, S., DE MULDER, P., MULDERS, P.F., and BECK, J. (2004). A phase II trial of chimeric monoclonal antibody G250 for advanced renal cell carcinoma patients. *Br J Cancer* **90**, 985-990.
- BLEUMER, I., OOSTERWIJK, E., DE MULDER, P., and MULDERS, P.F. (2003). Immunotherapy for renal cell carcinoma. *Eur Urol* **44**, 65-75.
- BLOCK, T.M., MEHTA, A.S., FIMMEL, C.J., and JORDAN, R. (2003). Molecular viral oncology of hepatocellular carcinoma. *Oncogene* **22**, 5093-5107.
- BOCCIA, M., KORONTSVIT, T., XU, Q., MACKINNON, S., YANG, S.Y., SETTE, A., and SCHEINBERG, D.A. (1996). Specific human cellular immunity to bcr-abl oncogene-derived peptides. *Blood* **87**, 3587-3592.
- BOEL, P., WILDMANN, C., SENSI, M.L., BRASSEUR, R., RENAULD, J.C., COULIE, P., BOON, T., and VAN DER BRUGGEN, P. (1995). BAGE: a new gene encoding an antigen recognized on human melanomas by cytolytic T lymphocytes. *Immunity* **2**, 167-175.

- BOHLE, A. (2000). BCG's mechanism of action - increasing our understanding. For the EBIN Group. *Eur Urol* **37 Suppl 1**, 1-8.
- BOLHUIS, R.L., WILLEMSEN, R.A., LAMERS, C.H., STAM, K., GRATAMA, J.W., and WEIJTENS, M.E. (1998). Preparation for a phase I/II study using autologous gene modified T lymphocytes for treatment of metastatic renal cancer patients. *Adv Exp Med Biol* **451**, 547-555.
- BONINI, C., GREZ, M., TRAVERSARI, C., CICERI, F., MARKTEL, S., FERRARI, G., DINAUER, M., SADAT, M., AIUTI, A., DEOLA, S., RADRIZZANI, M., HAGENBEEK, A., APPERLEY, J., EBELING, S., MARTENS, A., KOLB, H.J., WEBER, M., LOTTI, F., GRANDE, A., WEISSINGER, E., BUEREN, J.A., LAMANA, M., FALKENBURG, J.H., HEEMSKERK, M.H., AUSTIN, T., KORNBLAU, S., MARINI, F., BENATI, C., MAGNANI, Z., CAZZANIGA, S., TOMA, S., GALLO-STAMPINO, C., INTRONA, M., SLAVIN, S., GREENBERG, P.D., BREGNI, M., MAVILIO, F., and BORDIGNON, C. (2003). Safety of retroviral gene marking with a truncated NGF receptor. *Nat Med* **9**, 367-369.
- BOON, T., and VAN DER BRUGGEN, P. (1996). Human tumor antigens recognized by T lymphocytes. *J Exp Med* **183**, 725-729.
- BOYSE, E.A., OLD, L.J., and STOCKERT, E. (1962). Some further data on cytotoxic isoantibodies in the mouse. *Ann N Y Acad Sci* **99**, 574-587.
- BRANDLE, D., BRASSEUR, F., WEYNANTS, P., BOON, T., and VAN DEN EYNDE, B. (1996). A mutated HLA-A2 molecule recognized by autologous cytotoxic T lymphocytes on a human renal cell carcinoma. *J Exp Med* **183**, 2501-2508.
- BRAY, M., PRASAD, S., DUBAY, J.W., HUNTER, E., JEANG, K.T., REKOSH, D., and HAMMARSKJOLD, M.L. (1994). A small element from the Mason-Pfizer monkey virus genome makes human immunodeficiency virus type 1 expression and replication Rev-independent. *Proc Natl Acad Sci U S A* **91**, 1256-1260.
- BRENTJENS, R.J., LATOUCHE, J.B., SANTOS, E., MARTI, F., GONG, M.C., LYDDANE, C., KING, P.D., LARSON, S., WEISS, M., RIVIERE, I., and SADELAIN, M. (2003). Eradication of systemic B-cell tumors by genetically targeted human T lymphocytes co-stimulated by CD80 and interleukin-15. *Nat Med* **9**, 279-286.
- BRICHARD, V., VAN PEL, A., WOLFEL, T., WOLFEL, C., DE PLAEN, E., LETHE, B., COULIE, P., and BOON, T. (1993). The tyrosinase gene codes for an antigen recognized by autologous cytolytic T lymphocytes on HLA-A2 melanomas. *J Exp Med* **178**, 489-495.
- BROMLEY, S.K., BURACK, W.R., JOHNSON, K.G., SOMERSALO, K., SIMS, T.N., SUMEN, C., DAVIS, M.M., SHAW, A.S., ALLEN, P.M., and DUSTIN, M.L. (2001). The immunological synapse. *Annu Rev Immunol* **19**, 375-396.
- BROSSART, P., WIRTHS, S., BRUGGER, W., and KANZ, L. (2001). Dendritic cells in cancer vaccines. *Exp Hematol* **29**, 1247-1255.
- BRUNS, P. (1887-1888). Die Heilwirkung des Erysipels auf Geschwülste. *Beitr Klin Chir* **3**, 443 - 466.
- BUNNELL, B.A., MUUL, L.M., DONAHUE, R.E., BLAESE, R.M., and MORGAN, R.A. (1995). High-efficiency retroviral-mediated gene transfer into human and nonhuman primate peripheral blood lymphocytes. *Proc Natl Acad Sci U S A* **92**, 7739-7743.
- BURNET, F.M. (1970). The concept of immunological surveillance. *Prog Exp Tumor Res* **13**, 1-27.
- BURROWS, S., SCULLEY, T., MISKO, I., SCHMIDT, C., and MOSS, D. (1990). An Epstein-Barr virus-specific cytotoxic T cell epitope in EBV nuclear antigen 3 (EBNA 3). *J. Exp. Med.* **171**, 345-349.
- BUTTERFIELD, L.H., KOH, A., MENG, W., VOLLMER, C.M., RIBAS, A., DISSETTE, V., LEE, E., GLASPY, J.A., MCBRIDE, W.H., and ECONOMOU, J.S. (1999). Generation of human T-cell responses to an HLA-A2.1-restricted peptide epitope derived from alpha-fetoprotein. *Cancer Res* **59**, 3134-3142.
- CALL, M.E., PYRDOL, J., WIEDMANN, M., and WUCHERPENNIG, K.W. (2002). The organizing principle in the formation of the T cell receptor-CD3 complex. *Cell* **111**, 967-979.
- CALOGERO, A., HOSPERS, G.A., KRUSE, K.M., SCHRIER, P.I., MULDER, N.H., HOOIJBERG, E., and DE LEIJ, L.F. (2000). Retargeting of a T cell line by anti MAGE-3/HLA-A2 alpha beta TCR gene transfer. *Anticancer Res* **20**, 1793-1799.
- CARBONE, G., BORRELLO, M.G., MOLLA, A., RIZZETTI, M.G., PIEROTTI, M.A., DELLA PORTA, G., and PARMIANI, G. (1991). Activation of ras oncogenes and expression of tumor-specific transplantation antigens in methylcholanthrene-induced murine fibrosarcomas. *Int J Cancer* **47**, 619-625.
- CARDING, S.R., and EGAN, P.J. (2002). $\gamma\delta$ T cells: Functional plasticity and heterogeneity. *Nat Rev Immunol* **2**, 336-345.
- CAVAZZANA-CALVO, M., HACEIN-BEY, S., DE SAINT BASILE, G., GROSS, F., YVON, E., NUSBAUM, P., SELZ, F., HUE, C., CERTAIN, S., CASANOVA, J.L., BOUSSO, P., DEIST,

- F.L., and FISCHER, A. (2000). Gene therapy of human severe combined immunodeficiency (SCID)-X1 disease. *Science* **288**, 669-672.
- CHALLITA, P.M., and KOHN, D.B. (1994). Lack of expression from a retroviral vector after transduction of murine hematopoietic stem cells is associated with methylation in vivo. *Proc Natl Acad Sci U S A* **91**, 2567-2571.
- CHAMES, P., HUFTON, S.E., COULIE, P.G., UCHANSKA-ZIEGLER, B., and HOOGENBOOM, H.R. (2000). Direct selection of a human antibody fragment directed against the tumor T-cell epitope HLA-A1-MAGE-A1 from a nonimmunized phage-Fab library. *Proc Natl Acad Sci U S A* **97**, 7969-7974.
- CHAMES, P., WILLEMSSEN, R.A., ROJAS, G., DIECKMANN, D., REM, L., SCHULER, G., BOLHUIS, R.L., and HOOGENBOOM, H.R. (2002). TCR-like human antibodies expressed on human CTLs mediate antibody affinity-dependent cytolytic activity. *J Immunol* **169**, 1110-1118.
- CHAMOTO, K., TSUJI, T., FUNAMOTO, H., KOSAKA, A., MATSUZAKI, J., SATO, T., ABE, H., FUJIO, K., YAMAMOTO, K., KITAMURA, T., TAKESHIMA, T., TOGASHI, Y., and NISHIMURA, T. (2004). Potentiation of tumor eradication by adoptive immunotherapy with T-cell receptor gene-transduced T-helper type 1 cells. *Cancer Res* **64**, 386-390.
- CHECK, E. (2005). Gene therapy put on hold as third child develops cancer. *Nature* **433**, 561.
- CHEEVER, M.A., THOMPSON, D.B., KLARNET, J.P., and GREENBERG, P.D. (1986). Antigen-driven long term-cultured T cells proliferate in vivo, distribute widely, mediate specific tumor therapy, and persist long-term as functional memory T cells. *J Exp Med* **163**, 1100-1112.
- CHEN, L., ASHE, S., BRADY, W.A., HELLSTROM, I., HELLSTROM, K.E., LEDBETTER, J.A., MCGOWAN, P., and LINSLEY, P.S. (1992). Costimulation of antitumor immunity by the B7 counterreceptor for the T lymphocyte molecules CD28 and CTLA-4. *Cell* **71**, 1093-1102.
- CHENG, L., DU, C., MURRAY, D., TONG, X., ZHANG, Y.A., CHEN, B.P., and HAWLEY, R.G. (1997). A GFP reporter system to assess gene transfer and expression in human hematopoietic progenitor cells. *Gene Ther* **4**, 1013-1022.
- CHERESH, D.A., REISFELD, R.A., and VARKI, A.P. (1984). O-acetylation of disialoganglioside GD3 by human melanoma cells creates a unique antigenic determinant. *Science* **225**, 844-846.
- CHIARI, R., HAMES, G., STROOBANT, V., TEXIER, C., MAILLERE, B., BOON, T., and COULIE, P.G. (2000). Identification of a tumor-specific shared antigen derived from an Eph receptor and presented to CD4 T cells on HLA class II molecules. *Cancer Res* **60**, 4855-4863.
- CHILD, R., CHERNOFF, A., CONTENTIN, N., BAHCECI, E., SCHRUMP, D., LEITMAN, S., READ, E.J., TISDALE, J., DUNBAR, C., LINEHAN, W.M., YOUNG, N.S., and BARRETT, A.J. (2000). Regression of metastatic renal-cell carcinoma after nonmyeloablative allogeneic peripheral-blood stem-cell transplantation. *N Engl J Med* **343**, 750-758.
- CHUNG, S., WUCHERPENNIG, K.W., FRIEDMAN, S.M., HAFLER, D.A., and STROMINGER, J.L. (1994). Functional three-domain single-chain T-cell receptors. *Proc Natl Acad Sci U S A* **91**, 12654-12658.
- CLAY, T.M., CUSTER, M.C., SACHS, J., HWU, P., ROSENBERG, S.A., and NISHIMURA, M.I. (1999). Efficient transfer of a tumor antigen-reactive TCR to human peripheral blood lymphocytes confers anti-tumor reactivity. *J Immunol* **163**, 507-513.
- COFFIN, J., HUGHES, S., and VARMUS, H. (1997). *Retroviruses*. (Cold Spring Harbor Laboratory Press, New York).
- COLEY, W. (1893). The treatment of malignant tumors by repeated inoculations of erysipelas: with a report of ten original cases. *Am J Med Sci* **105**, 487 - 511.
- COOPER, L.J., AL-KADHIMI, Z., SERRANO, L.M., PFEIFFER, T., OLIVARES, S., CASTRO, A., CHANG, W.C., GONZALEZ, S., SMITH, D., FORMAN, S.J., and JENSEN, M.C. (2005). Enhanced antilymphoma efficacy of CD19-redirected influenza MP1-specific CTLs by cotransfer of T cells modified to present influenza MP1. *Blood* **105**, 1622-1631.
- COOPER, L.J., KALOS, M., LEWINSOHN, D.A., RIDDELL, S.R., and GREENBERG, P.D. (2000). Transfer of specificity for human immunodeficiency virus type 1 into primary human T lymphocytes by introduction of T-cell receptor genes. *J Virol* **74**, 8207-8212.
- COOPER, L.J., TOPP, M.S., PINZON, C., PLAVEC, I., JENSEN, M.C., RIDDELL, S.R., and GREENBERG, P.D. (2004). Enhanced transgene expression in quiescent and activated human CD8+ T cells. *Hum Gene Ther* **15**, 648-658.
- CORTHAY, A., SKOVSETH, D.K., LUNDIN, K.U., ROSJO, E., OMHOLT, H., HOFGAARD, P.O., HARALDSEN, G., and BOGEN, B. (2005). Primary Antitumor Immune Response Mediated by CD4(+) T Cells. *Immunity* **22**, 371-383.
- COULIE, P.G., LEHMANN, F., LETHE, B., HERMAN, J., LURQUIN, C., ANDRAWISS, M., and BOON, T. (1995). A mutated intron sequence codes for an antigenic peptide recognized by cytolytic T lymphocytes on a human melanoma. *Proc Natl Acad Sci U S A* **92**, 7976-7980.

- COX, A.L., SKIPPER, J., CHEN, Y., HENDERSON, R.A., DARROW, T.L., SHABANOWITZ, J., ENGELHARD, V.H., HUNT, D.F., and SLINGLUFF, C.L., JR. (1994). Identification of a peptide recognized by five melanoma-specific human cytotoxic T cell lines. *Science* **264**, 716-719.
- CRISPEN, R. (1989). History of BCG and its substrains. *Prog Clin Biol Res* **310**, 35-50.
- DANG, Q., AUTEN, J., and PLAVEC, I. (2000). Human beta interferon scaffold attachment region inhibits de novo methylation and confers long-term, copy number-dependent expression to a retroviral vector. *J Virol* **74**, 2671-2678.
- DARLING, D., HUGHES, C., GALEA-LAURI, J., GAKEN, J., TRAYNER, I.D., KUIPER, M., and FARZANEH, F. (2000). Low-speed centrifugation of retroviral vectors absorbed to a particulate substrate: a highly effective means of enhancing retroviral titre. *Gene Ther* **7**, 914-923.
- DAVIS, M.M., and BJORKMAN, P.J. (1988). T-cell antigen receptor genes and T-cell recognition. *Nature* **334**, 395-402.
- DEBETS, R., WILLEMSSEN, R., and BOLHUIS, R. (2002). Adoptive transfer of T-cell immunity: gene transfer with MHC-restricted receptors. *Trends Immunol* **23**, 435-436; author reply 436-437.
- DECKHUT, A.M., TEVETHIA, M.J., HAGGERTY, S., FRISQUE, R.J., and TEVETHIA, S.S. (1991). Localization of common cytotoxic T lymphocyte recognition epitopes on simian papovavirus SV40 and human papovavirus JC virus T antigens. *Virology* **183**, 122-132.
- DEMBIC, Z., HAAS, W., WEISS, S., MCCUBREY, J., KIEFER, H., VON BOEHMER, H., and STEINMETZ, M. (1986). Transfer of specificity by murine alpha and beta T-cell receptor genes. *Nature* **320**, 232-238.
- DERBINSKI, J., SCHULTE, A., KYEWSKI, B., and KLEIN, L. (2001). Promiscuous gene expression in medullary thymic epithelial cells mirrors the peripheral self. *Nat Immunol* **2**, 1032-1039.
- DERBY, M., ALEXANDER-MILLER, M., TSE, R., and BERZOFSKY, J. (2001). High-avidity CTL exploit two complementary mechanisms to provide better protection against viral infection than low-avidity CTL. *J Immunol* **166**, 1690-1697.
- DIAZ, P., CADO, D., and WINOTO, A. (1994). A locus control region in the T cell receptor alpha/delta locus. *Immunity* **1**, 207-217.
- DONELLO, J.E., LOEB, J.E., and HOPE, T.J. (1998). Woodchuck hepatitis virus contains a tripartite posttranscriptional regulatory element. *J Virol* **72**, 5085-5092.
- DORRSCHUCK, A., SCHMIDT, A., SCHNURER, E., GLUCKMANN, M., ALBRECHT, C., WOLFEL, C., LENNERZ, V., LIFKE, A., DI NATALE, C., RANIERI, E., GESUALDO, L., HUBER, C., KARAS, M., WOLFEL, T., and HERR, W. (2004). CD8+ cytotoxic T lymphocytes isolated from allogeneic healthy donors recognize HLA class Ia/Ib-associated renal carcinoma antigens with ubiquitous or restricted tissue expression. *Blood* **104**, 2591-2599.
- DRANOFF, G. (2004). Cytokines in cancer pathogenesis and cancer therapy. *Nat Rev Cancer* **4**, 11-22.
- DREBIN, J.A., LINK, V.C., WEINBERG, R.A., and GREENE, M.I. (1986). Inhibition of tumor growth by a monoclonal antibody reactive with an oncogene-encoded tumor antigen. *Proc Natl Acad Sci U S A* **83**, 9129-9133.
- DUBEY, P., HENDRICKSON, R.C., MEREDITH, S.C., SIEGEL, C.T., SHABANOWITZ, J., SKIPPER, J.C., ENGELHARD, V.H., HUNT, D.F., and SCHREIBER, H. (1997). The immunodominant antigen of an ultraviolet-induced regressor tumor is generated by a somatic point mutation in the DEAD box helicase p68. *J Exp Med* **185**, 695-705.
- DUDLEY, M.E., NISHIMURA, M.I., HOLT, A.K., and ROSENBERG, S.A. (1999). Antitumor immunization with a minimal peptide epitope (G9-209-2M) leads to a functionally heterogeneous CTL response. *J Immunother* **22**, 288-298.
- DUDLEY, M.E., WUNDERLICH, J.R., ROBBINS, P.F., YANG, J.C., HWU, P., SCHWARTZENTRUBER, D.J., TOPALIAN, S.L., SHERRY, R., RESTIFO, N.P., HUBICKI, A.M., ROBINSON, M.R., RAFFELD, M., DURAY, P., SEIPP, C.A., ROGERS-FREEZER, L., MORTON, K.E., MAVROUKAKIS, S.A., WHITE, D.E., and ROSENBERG, S.A. (2002). Cancer regression and autoimmunity in patients after clonal repopulation with antitumor lymphocytes. *Science* **298**, 850-854.
- DUDLEY, M.E., WUNDERLICH, J.R., YANG, J.C., SHERRY, R.M., TOPALIAN, S.L., RESTIFO, N.P., ROYAL, R.E., KAMMULA, U., WHITE, D.E., MAVROUKAKIS, S.A., ROGERS, L.J., GRACIA, G.J., JONES, S.A., MANGIAMELI, D.P., PELLETIER, M.M., GEA-BANACLOCHE, J., ROBINSON, M.R., BERMAN, D.M., FILIE, A.C., ABATI, A., and ROSENBERG, S.A. (2005). Adoptive cell transfer therapy following non-myeloablative but lymphodepleting chemotherapy for the treatment of patients with refractory metastatic melanoma. *J Clin Oncol* **23**, 2346-2357.
- DUESBERG, P.H. (1983). Retroviral transforming genes in normal cells? *Nature* **304**, 219-226.

- DUNN, G.P., BRUCE, A.T., IKEDA, H., OLD, L.J., and SCHREIBER, R.D. (2002). Cancer immunoediting: from immunosurveillance to tumor escape. *Nat Immunol* **3**, 991-998.
- EHRLICH, P. (1909). Über den jetzigen Stand der Karzinomforschung. *Ned Tijdschr Geneesk* **5**, 273 - 290.
- EMERMAN, M., and TEMIN, H.M. (1984). Genes with promoters in retrovirus vectors can be independently suppressed by an epigenetic mechanism. *Cell* **39**, 449-467.
- ESHHAR, Z. (1997). Tumor-specific T-bodies: towards clinical application. *Cancer Immunol Immunother* **45**, 131-136.
- ESHHAR, Z., WAKS, T., GROSS, G., and SCHINDLER, D.G. (1993). Specific activation and targeting of cytotoxic lymphocytes through chimeric single chains consisting of antibody-binding domains and the gamma or zeta subunits of the immunoglobulin and T-cell receptors. *Proc Natl Acad Sci U S A* **90**, 720-724.
- FALKENBURG, J.H., WAFELMAN, A.R., JOOSTEN, P., SMIT, W.M., VAN BERGEN, C.A., BONGAERTS, R., LURVINK, E., VAN DER HOORN, M., KLUCK, P., LANDEGENT, J.E., KLUIN-NELEMANS, H.C., FIBBE, W.E., and WILLEMZE, R. (1999). Complete remission of accelerated phase chronic myeloid leukemia by treatment with leukemia-reactive cytotoxic T lymphocytes. *Blood* **94**, 1201-1208.
- FARSON, D., MCGUINNESS, R., DULL, T., LIMOLI, K., LAZAR, R., JALALI, S., REDDY, S., PENNATHUR-DAS, R., BROAD, D., and FINER, M. (1999). Large-scale manufacturing of safe and efficient retrovirus packaging lines for use in immunotherapy protocols. *J Gene Med* **1**, 195-209.
- FEHSE, B., AYUK, F.A., KROGER, N., FANG, L., KUHLCKE, K., HEINZELMANN, M., ZABELINA, T., FAUSER, A.A., and ZANDER, A.R. (2004a). Evidence for increased risk of secondary graft failure after in vivo depletion of suicide gene-modified T lymphocytes transplanted in conjunction with CD34+-enriched blood stem cells. *Blood* **104**, 3408-3409.
- FEHSE, B., KUSTIKOVA, O.S., BUBENHEIM, M., and BAUM, C. (2004b). Pois(s)on--it's a question of dose. *Gene Ther* **11**, 879-881.
- FOOTE, J., and EISEN, H.N. (1995). Kinetic and affinity limits on antibodies produced during immune responses. *Proc Natl Acad Sci U S A* **92**, 1254-1256.
- FRANK, O., RUDOLPH, C., HEBERLEIN, C., VON NEUHOFF, N., SCHROCK, E., SCHAMBACH, A., SCHLEGELBERGER, B., FEHSE, B., OSTERTAG, W., STOCKING, C., and BAUM, C. (2004). Tumor cells escape suicide gene therapy by genetic and epigenetic instability. *Blood* **104**, 3543-3549.
- FRASCA, L., PIAZZA, C., and PICCOLELLA, E. (1998). CD4+ T cells orchestrate both amplification and deletion of CD8+ T cells. *Crit Rev Immunol* **18**, 569-594.
- FUJIO, K., MISAKI, Y., SETOGUCHI, K., MORITA, S., KAWAHATA, K., KATO, I., NOSAKA, T., YAMAMOTO, K., and KITAMURA, T. (2000). Functional reconstitution of class II MHC-restricted T cell immunity mediated by retroviral transfer of the alpha beta TCR complex. *J Immunol* **165**, 528-532.
- GALE, R.P., HOROWITZ, M.M., ASH, R.C., CHAMPLIN, R.E., GOLDMAN, J.M., RIMM, A.A., RINGDEN, O., STONE, J.A., and BORTIN, M.M. (1994). Identical-twin bone marrow transplants for leukemia. *Ann Intern Med* **120**, 646-652.
- GALLIMORE, P.H., and TURNELL, A.S. (2001). Adenovirus E1A: remodelling the host cell, a life or death experience. *Oncogene* **20**, 7824-7835.
- GARBOCZI, D.N., GHOSH, P., UTZ, U., FAN, Q.R., BIDDISON, W.E., and WILEY, D.C. (1996). Structure of the complex between human T-cell receptor, viral peptide and HLA-A2. *Nature* **384**, 134-141.
- GARCIA, K.C., DEGANO, M., STANFIELD, R.L., BRUNMARK, A., JACKSON, M.R., PETERSON, P.A., TEYTON, L., and WILSON, I.A. (1996). An alpha beta T Cell Receptor Structure at 2.5 Å and Its Orientation in the TCR-MHC Complex. *Science* **274**, 209-219.
- 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.
- GATTINONI, L., KLEBANOFF, C.A., PALMER, D.C., WRZESINSKI, C., KERSTANN, K., YU, Z., FINKELSTEIN, S.E., THEORET, M.R., ROSENBERG, S.A., and RESTIFO, N.P. (2005). Acquisition of full effector function in vitro paradoxically impairs the in vivo antitumor efficacy of adoptively transferred CD8(+) T cells. *J Clin Invest* **115**, 1616-1626.
- GAUDIN, C., KREMER, F., ANGEVIN, E., SCOTT, V., and TRIEBEL, F. (1999). A hsp70-2 mutation recognized by CTL on a human renal cell carcinoma. *J Immunol* **162**, 1730-1738.
- GAUGLER, B., BROUWENSTIJN, N., VANTOMME, V., SZIKORA, J.P., VAN DER SPEK, C.W., PATARD, J.J., BOON, T., SCHRIER, P., and VAN DEN EYNDE, B.J. (1996). A new gene

- coding for an antigen recognized by autologous cytolytic T lymphocytes on a human renal carcinoma. *Immunogenetics* **44**, 323-330.
- GHETIE, V., and VITETTA, E. (1994). Immunotoxins in the therapy of cancer: from bench to clinic. *Pharmacol Ther* **63**, 209-234.
- GLADOW, M., UCKERT, W., and BLANKENSTEIN, T. (2004). Dual T cell receptor T cells with two defined specificities mediate tumor suppression via both receptors. *Eur J Immunol* **34**, 1882-1891.
- GLOVER, C.P., BIENEMANN, A.S., HEYWOOD, D.J., COSGRAVE, A.S., and UNEY, J.B. (2002). Adenoviral-mediated, high-level, cell-specific transgene expression: a SYN1-WPRE cassette mediates increased transgene expression with no loss of neuron specificity. *Mol Ther* **5**, 509-516.
- GOTTER, J., BRORS, B., HERGENHAHN, M., and KYEWSKI, B. (2004). Medullary epithelial cells of the human thymus express a highly diverse selection of tissue-specific genes colocalized in chromosomal clusters. *J Exp Med* **199**, 155-166.
- GRABMAIER, K., VISSERS, J.L., DE WEIJERT, M.C., OOSTERWIJK-WAKKA, J.C., VAN BOKHOVEN, A., BRAKENHOFF, R.H., NOESSNER, E., MULDERS, P.A., MERKX, G., FIGDOR, C.G., ADEMA, G.J., and OOSTERWIJK, E. (2000). Molecular cloning and immunogenicity of renal cell carcinoma-associated antigen G250. *Int J Cancer* **85**, 865-870.
- GREAVES, D.R., WILSON, F.D., LANG, G., and KIOUSSIS, D. (1989). Human CD2 3'-flanking sequences confer high-level, T cell-specific, position-independent gene expression in transgenic mice. *Cell* **56**, 979-986.
- GREZ, M., AKGUN, E., HILBERG, F., and OSTERTAG, W. (1990). Embryonic stem cell virus, a recombinant murine retrovirus with expression in embryonic stem cells. *Proc Natl Acad Sci U S A* **87**, 9202-9206.
- GROSS, L. (1943). Intradermal immunization of C3H mice against a sarcoma that originated in an animal of the same line. *Cancer Res* **3**, 326 - 333.
- GROSVELD, F., VAN ASSENDELFT, G.B., GREAVES, D.R., and KOLLIAS, G. (1987). Position-independent, high-level expression of the human beta-globin gene in transgenic mice. *Cell* **51**, 975-985.
- GUTHBJARTSSON, T., and GISLASON, T. (1995). Spontaneous regression of brain metastasis secondary to renal cell carcinoma. *Scand J Urol Nephrol* **29**, 215-217.
- HACEIN-BEY-ABINA, S., LE DEIST, F., CARLIER, F., BOUNEAUD, C., HUE, C., DE VILLARTAY, J.P., THRASHER, A.J., WULFFRAAT, N., SORENSEN, R., DUPUIS-GIROD, S., FISCHER, A., DAVIES, E.G., KUIS, W., LEIVA, L., and CAVAZZANA-CALVO, M. (2002). Sustained correction of X-linked severe combined immunodeficiency by ex vivo gene therapy. *N Engl J Med* **346**, 1185-1193.
- HACEIN-BEY-ABINA, S., VON KALLE, C., SCHMIDT, M., MCCORMACK, M.P., WULFFRAAT, N., LEBOULCH, P., LIM, A., OSBORNE, C.S., PAWLUK, R., MORILLON, E., SORENSEN, R., FORSTER, A., FRASER, P., COHEN, J.I., DE SAINT BASILE, G., ALEXANDER, I., WINTERGERST, U., FREBOURG, T., AURIAS, A., STOPPA-LYONNET, D., ROMANA, S., RADFORD-WEISS, I., GROSS, F., VALENSI, F., DELABESSE, E., MACINTYRE, E., SIGAUX, F., SOULIER, J., LEIVA, L.E., WISSLER, M., PRINZ, C., RABBITS, T.H., LE DEIST, F., FISCHER, A., and CAVAZZANA-CALVO, M. (2003). LMO2-associated clonal T cell proliferation in two patients after gene therapy for SCID-X1. *Science* **302**, 415-419.
- HANADA, K., PERRY-LALLEY, D.M., OHNMACHT, G.A., BETTINOTTI, M.P., and YANG, J.C. (2001). Identification of fibroblast growth factor-5 as an overexpressed antigen in multiple human adenocarcinomas. *Cancer Res* **61**, 5511-5516.
- HANENBERG, H., XIAO, X.L., DILLOO, D., HASHINO, K., KATO, I., and WILLIAMS, D.A. (1996). Colocalization of retrovirus and target cells on specific fibronectin fragments increases genetic transduction of mammalian cells. *Nat Med* **2**, 876-882.
- HANSON, H.L., DONERMAYER, D.L., IKEDA, H., WHITE, J.M., SHANKARAN, V., OLD, L.J., SHIKU, H., SCHREIBER, R.D., and ALLEN, P.M. (2000). Eradication of established tumors by CD8+ T cell adoptive immunotherapy. *Immunity* **13**, 265-276.
- HAWLEY, R.G., LIEU, F.H., FONG, A.Z., and HAWLEY, T.S. (1994). Versatile retroviral vectors for potential use in gene therapy. *Gene Ther* **1**, 136-138.
- HEATH, W.R., CARBONE, F.R., BERTOLINO, P., KELLY, J., COSE, S., and MILLER, J.F. (1995). Expression of two T cell receptor alpha chains on the surface of normal murine T cells. *Eur J Immunol* **25**, 1617-1623.
- HEEMSKERK, M.H., HOOGEBOOM, M., DE PAUS, R.A., KESTER, M.G., VAN DER HOORN, M.A., GOULMY, E., WILLEMZE, R., and FALKENBURG, J.H. (2003). Redirection of antileukemic reactivity of peripheral T lymphocytes using gene transfer of minor histocompatibility antigen

- HA-2-specific T-cell receptor complexes expressing a conserved alpha joining region. *Blood* **102**, 3530-3540.
- HEEMSKERK, M.H., HOOGEBOOM, M., HAGEDOORN, R., KESTER, M.G., WILLEMZE, R., and FALKENBURG, J.H. (2004). Reprogramming of Virus-specific T Cells into Leukemia-reactive T Cells Using T Cell Receptor Gene Transfer. *J Exp Med* **199**, 885-894.
- HEINEMANN, D., SMITH, P.J., and SYMES, M.O. (1987). Expression of histocompatibility antigens and characterisation of mononuclear cell infiltrates in human renal cell carcinomas. *Br J Cancer* **56**, 433-437.
- HILDINGER, M., ABEL, K.L., OSTERTAG, W., and BAUM, C. (1999). Design of 5' untranslated sequences in retroviral vectors developed for medical use. *J Virol* **73**, 4083-4089.
- HO, W.Y., YEE, C., and GREENBERG, P.D. (2002). Adoptive therapy with CD8(+) T cells: it may get by with a little help from its friends. *J Clin Invest* **110**, 1415-1417.
- HOLLER, P.D., CHLEWICKI, L.K., and KRANZ, D.M. (2003). TCRs with high affinity for foreign pMHC show self-reactivity. *Nat Immunol* **4**, 55-62.
- HOLLER, P.D., HOLMAN, P.O., SHUSTA, E.V., O'HERRIN, S., WITTRUP, K.D., and KRANZ, D.M. (2000). In vitro evolution of a T cell receptor with high affinity for peptide/MHC. *Proc Natl Acad Sci U S A* **97**, 5387-5392.
- HOLLER, P.D., and KRANZ, D.M. (2003). Quantitative analysis of the contribution of TCR/pepMHC affinity and CD8 to T cell activation. *Immunity* **18**, 255-264.
- HOLTL, L., ZELLE-RIESER, C., GANDER, H., PAPESH, C., RAMONER, R., BARTSCH, G., ROGATSCH, H., BARSOUM, A.L., COGGIN, J.H., JR., and THURNHER, M. (2002). Immunotherapy of metastatic renal cell carcinoma with tumor lysate-pulsed autologous dendritic cells. *Clin Cancer Res* **8**, 3369-3376.
- HOMBACH, A., HEUSER, C., and ABKEN, H. (2002). The recombinant T cell receptor strategy: insights into structure and function of recombinant immunoreceptors on the way towards an optimal receptor design for cellular immunotherapy. *Curr Gene Ther* **2**, 211-226.
- HOMBACH, A., KOCH, D., SIRCAR, R., HEUSER, C., DIEHL, V., KRUIS, W., POHL, C., and ABKEN, H. (1999). A chimeric receptor that selectively targets membrane-bound carcinoembryonic antigen (mCEA) in the presence of soluble CEA. *Gene Ther* **6**, 300-304.
- HOROWITZ, M.M., GALE, R.P., SONDEL, P.M., GOLDMAN, J.M., KERSEY, J., KOLB, H.J., RIMM, A.A., RINGDEN, O., ROZMAN, C., SPECK, B., and ET AL. (1990). Graft-versus-leukemia reactions after bone marrow transplantation. *Blood* **75**, 555-562.
- HUANG, Y., WIMLER, K.M., and CARMICHAEL, G.G. (1999). Intronless mRNA transport elements may affect multiple steps of pre-mRNA processing. *Embo J* **18**, 1642-1652.
- HUGHES, M.S., YU, Y.Y., DUDLEY, M.E., ZHENG, Z., ROBBINS, P.F., LI, Y., WUNDERLICH, J., HAWLEY, R.G., MOAYERI, M., ROSENBERG, S.A., and MORGAN, R.A. (2005). Transfer of a TCR gene derived from a patient with a marked antitumor response conveys highly active T-cell effector functions. *Hum Gene Ther* **16**, 457-472.
- HUNG, K., HAYASHI, R., LAFOND-WALKER, A., LOWENSTEIN, C., PARDOLL, D., and LEVITSKY, H. (1998). The central role of CD4(+) T cells in the antitumor immune response. *J Exp Med* **188**, 2357-2368.
- IMPERIALE, M.J. (2001). Oncogenic transformation by the human polyomaviruses. *Oncogene* **20**, 7917-7923.
- INDRACCOLO, S., MINUZZO, S., ROCCAFORTE, F., ZAMARCHI, R., HABELER, W., STIEVANO, L., TOSELLLO, V., KLEIN, D., GUNZBURG, W.H., BASSO, G., CHIECO-BIANCHI, L., and AMADORI, A. (2001). Effects of CD2 locus control region sequences on gene expression by retroviral and lentiviral vectors. *Blood* **98**, 3607-3617.
- INDRACCOLO, S., RONI, V., ZAMARCHI, R., ROCCAFORTE, F., MINUZZO, S., STIEVANO, L., HABELER, W., MARCATO, N., TISATO, V., TOSELLLO, V., CHIECO-BIANCHI, L., and AMADORI, A. (2002). Expression from cell type-specific enhancer-modified retroviral vectors after transduction: influence of marker gene stability. *Gene* **283**, 199-208.
- IOANNIDES, C.G., FISK, B., FAN, D., BIDDISON, W.E., WHARTON, J.T., and O'BRIAN, C.A. (1993). Cytotoxic T cells isolated from ovarian malignant ascites recognize a peptide derived from the HER-2/neu proto-oncogene. *Cell Immunol* **151**, 225-234.
- IVANOV, R., HOL, S., AARTS, T., HAGENBEEK, A., SLAGER, E.H., and EBELING, S. (2005). UTY-specific TCR-transfer generates potential graft-versus-leukaemia effector T cells. *British Journal of Haematology* **129**, 392-402.
- IVICS, Z., and IZSVAK, Z. (2004). Transposable elements for transgenesis and insertional mutagenesis in vertebrates: a contemporary review of experimental strategies. *Methods Mol Biol* **260**, 255-276.
- JAGER, E., CHEN, Y.T., DRIJFHOUT, J.W., KARBACH, J., RINGHOFFER, M., JAGER, D., ARAND, M., WADA, H., NOGUCHI, Y., STOCKERT, E., OLD, L.J., and KNUTH, A. (1998).

- Simultaneous humoral and cellular immune response against cancer-testis antigen NY-ESO-1: definition of human histocompatibility leukocyte antigen (HLA)-A2-binding peptide epitopes. *J Exp Med* **187**, 265-270.
- JAHNER, D., STUHLMANN, H., STEWART, C.L., HARBERS, K., LOHLER, J., SIMON, I., and JAENISCH, R. (1982). De novo methylation and expression of retroviral genomes during mouse embryogenesis. *Nature* **298**, 623-628.
- JANEWAY, C.A.J.T., P.; WALPORT, M.; SHLOMCHIK, M.J. (2005). *Immunobiology*. (Garland Science Publishing, New York, London).
- JANSSEN, E.M., LEMMENS, E.E., WOLFE, T., CHRISTEN, U., VON HERRATH, M.G., and SCHOENBERGER, S.P. (2003). CD4+ T cells are required for secondary expansion and memory in CD8+ T lymphocytes. *Nature* **421**, 852-856.
- JEROME, K.R., BARND, D.L., BENDT, K.M., BOYER, C.M., TAYLOR-PAPADIMITRIOU, J., MCKENZIE, I.F., BAST, R.C., JR., and FINN, O.J. (1991). Cytotoxic T-lymphocytes derived from patients with breast adenocarcinoma recognize an epitope present on the protein core of a mucin molecule preferentially expressed by malignant cells. *Cancer Res* **51**, 2908-2916.
- JOHNSEN, A.K., FRANCE, J., NAGY, N., ASKEW, D., ABDUL-KARIM, F.W., GERSON, S.L., SY, M.S., and HARDING, C.V. (2001). Systemic deficits in transporter for antigen presentation (TAP)-1 or proteasome subunit LMP2 have little or no effect on tumor incidence. *Int J Cancer* **91**, 366-372.
- JYOTHI, M.D., FLAVELL, R.A., and GEIGER, T.L. (2002). Targeting autoantigen-specific T cells and suppression of autoimmune encephalomyelitis with receptor-modified T lymphocytes. *Nat Biotechnol* **20**, 1215-1220.
- KANEKO, S., ONODERA, M., FUJIKI, Y., NAGASAWA, T., and NAKAUCHI, H. (2001). Simplified retroviral vector gcsap with murine stem cell virus long terminal repeat allows high and continued expression of enhanced green fluorescent protein by human hematopoietic progenitors engrafted in nonobese diabetic/severe combined immunodeficient mice. *Hum Gene Ther* **12**, 35-44.
- KAPTEIN, L.C., BREUER, M., VALERIO, D., and VAN BEUSECHEM, V.W. (1998). Expression pattern of CD2 locus control region containing retroviral vectors in hemopoietic cells in vitro and in vivo. *Gene Ther* **5**, 320-330.
- KAST, W.M., BRANDT, R.M., SIDNEY, J., DRIJFHOUT, J.W., KUBO, R.T., GREY, H.M., MELIEF, C.J., and SETTE, A. (1994). Role of HLA-A motifs in identification of potential CTL epitopes in human papillomavirus type 16 E6 and E7 proteins. *J Immunol* **152**, 3904-3912.
- KAWAKAMI, Y., DANG, N., WANG, X., TUPESIS, J., ROBBINS, P.F., WANG, R.F., WUNDERLICH, J.R., YANNELLI, J.R., and ROSENBERG, S.A. (2000). Recognition of shared melanoma antigens in association with major HLA-A alleles by tumor infiltrating T lymphocytes from 123 patients with melanoma. *J Immunother* **23**, 17-27.
- KAWAKAMI, Y., ELIYAHU, S., DELGADO, C.H., ROBBINS, P.F., RIVOLTINI, L., TOPALIAN, S.L., MIKI, T., and ROSENBERG, S.A. (1994a). Cloning of the gene coding for a shared human melanoma antigen recognized by autologous T cells infiltrating into tumor. *Proc Natl Acad Sci U S A* **91**, 3515-3519.
- KAWAKAMI, Y., ELIYAHU, S., DELGADO, C.H., ROBBINS, P.F., SAKAGUCHI, K., APPELLA, E., YANNELLI, J.R., ADEMA, G.J., MIKI, T., and ROSENBERG, S.A. (1994b). Identification of a human melanoma antigen recognized by tumor-infiltrating lymphocytes associated with in vivo tumor rejection. *Proc Natl Acad Sci U S A* **91**, 6458-6462.
- KAY, M.A., GLORIOSO, J.C., and NALDINI, L. (2001). Viral vectors for gene therapy: the art of turning infectious agents into vehicles of therapeutics. *Nat Med* **7**, 33-40.
- KERSCHBAUM, H.H., NEGULESCU, P.A., and CAHALAN, M.D. (1997). Ion channels, Ca²⁺ signaling, and reporter gene expression in antigen-specific mouse T cells. *J Immunol* **159**, 1628-1638.
- KERSHAW, M.H., WESTWOOD, J.A., and HWU, P. (2002). Dual-specific T cells combine proliferation and antitumor activity. *Nat Biotechnol* **20**, 1221-1227.
- KESSELS, H.W., WOLKERS, M.C., VAN DEN BOOM, M.D., VAN DER VALK, M.A., and SCHUMACHER, T.N. (2001). Immunotherapy through TCR gene transfer. *Nat Immunol* **2**, 957-961.
- KHAN, N., HISLOP, A., GUDGEON, N., COBBOLD, M., KHANNA, R., NAYAK, L., RICKINSON, A.B., and MOSS, P.A. (2004). Herpesvirus-specific CD8 T cell immunity in old age: cytomegalovirus impairs the response to a coresident EBV infection. *J Immunol* **173**, 7481-7489.
- KIM, J., KAYE, F.J., HENSLEE, J.G., SHIVELY, J.E., PARK, J.G., LAI, S.L., LINNOILA, R.I., MULSHINE, J.L., and GAZDAR, A.F. (1992). Expression of carcinoembryonic antigen and related genes in lung and gastrointestinal cancers. *Int J Cancer* **52**, 718-725.

- KLEBANOFF, C.A., FINKELSTEIN, S.E., SURMAN, D.R., LICHTMAN, M.K., GATTINONI, L., THEORET, M.R., GREWAL, N., SPIESS, P.J., ANTONY, P.A., PALMER, D.C., TAGAYA, Y., ROSENBERG, S.A., WALDMANN, T.A., and RESTIFO, N.P. (2004). IL-15 enhances the in vivo antitumor activity of tumor-reactive CD8+ T cells. *Proc Natl Acad Sci U S A* **101**, 1969-1974.
- KLEIN, G., SJOGREN, H.O., KLEIN, E., and HELLSTROM, K.E. (1960). Demonstration of resistance against methylcholanthrene-induced sarcomas in the primary autochthonous host. *Cancer Res* **20**, 1561-1572.
- KOBAYASHI, H., WOOD, M., SONG, Y., APPELLA, E., and CELIS, E. (2000). Defining promiscuous MHC class II helper T-cell epitopes for the HER2/neu tumor antigen. *Cancer Res* **60**, 5228-5236.
- KOLB, H.J., MITTERMULLER, J., CLEMM, C., HOLLER, E., LEDDEROSE, G., BREHM, G., HEIM, M., and WILMANNS, W. (1990). Donor leukocyte transfusions for treatment of recurrent chronic myelogenous leukemia in marrow transplant patients. *Blood* **76**, 2462-2465.
- KOLB, H.J., SCHATTENBERG, A., GOLDMAN, J.M., HERTENSTEIN, B., JACOBSEN, N., ARCESE, W., LJUNGMAN, P., FERRANT, A., VERDONCK, L., NIEDERWIESER, D., VAN RHEE, F., MITTERMUELLER, J., DE WITTE, T., HOLLER, E., and ANSARI, H. (1995). Graft-versus-leukemia effect of donor lymphocyte transfusions in marrow grafted patients. *Blood* **86**, 2041-2050.
- KONDO, E., AKATSUKA, Y., NAWA, A., KUZUSHIMA, K., TSUJIMURA, K., TANIMOTO, M., KODERA, Y., MORISHIMA, Y., KUZUYA, K., and TAKAHASHI, T. (2005). Retroviral vector backbone immunogenicity: identification of cytotoxic T-cell epitopes in retroviral vector-packaging sequences. *Gene Ther* **12**, 252-258.
- KOWOLIK, C.M., HU, J., and YEE, J.K. (2001). Locus control region of the human CD2 gene in a lentivirus vector confers position-independent transgene expression. *J Virol* **75**, 4641-4648.
- KRAMMER, P.H. (2000). CD95's deadly mission in the immune system. *Nature* **407**, 789-795.
- KRAUNUS, J., SCHAUmann, D.H., MEYER, J., MODLICH, U., FEHSE, B., BRANDENBURG, G., VON LAER, D., KLUMP, H., SCHAMBACH, A., BOHNE, J., and BAUM, C. (2004). Self-inactivating retroviral vectors with improved RNA processing. *Gene Ther* **11**, 1568-1578.
- KUBALL, J., SCHMITZ, F.W., VOSS, R.H., FERREIRA, E.A., ENGEL, R., GUILLAUME, P., STRAND, S., ROMERO, P., HUBER, C., SHERMAN, L.A., and THEOBALD, M. (2005). Cooperation of human tumor-reactive CD4+ and CD8+ T cells after redirection of their specificity by a high-affinity p53A2.1-specific TCR. *Immunity* **22**, 117-129.
- KUHLCKE, K., FEHSE, B., SCHILZ, A., LOGES, S., LINDEMANN, C., AYUK, F., LEHMANN, F., STUTE, N., FAUSER, A.A., ZANDER, A.R., and ECKERT, H.G. (2002). Highly efficient retroviral gene transfer based on centrifugation-mediated vector preloading of tissue culture vessels. *Mol Ther* **5**, 473-478.
- KUSTIKOVA, O.S., WAHLERS, A., KUHLCKE, K., STAHL, B., ZANDER, A.R., BAUM, C., and FEHSE, B. (2003). Dose finding with retroviral vectors: correlation of retroviral vector copy numbers in single cells with gene transfer efficiency in a cell population. *Blood* **102**, 3934-3937.
- LABRECQUE, N., WHITFIELD, L.S., OBST, R., WALTZINGER, C., BENOIST, C., and MATHIS, D. (2001). How much TCR does a T cell need? *Immunity* **15**, 71-82.
- LAFRENIERE, R., and ROSENBERG, S.A. (1985). Adoptive immunotherapy of murine hepatic metastases with lymphokine activated killer (LAK) cells and recombinant interleukin 2 (RIL 2) can mediate the regression of both immunogenic and nonimmunogenic sarcomas and an adenocarcinoma. *J Immunol* **135**, 4273-4280.
- LAMANA, M.L., SEGOVIA, J.C., GUENECHEA, G., and BUEREN, J.A. (2001). Systematic analysis of clinically applicable conditions leading to a high efficiency of transduction and transgene expression in human T cells. *J Gene Med* **3**, 32-41.
- LAMERS, C.H., GRATAMA, J.W., WARNAAR, S.O., STOTER, G., and BOLHUIS, R.L. (1995). Inhibition of bispecific monoclonal antibody (bsAb)-targeted cytosis by human anti-mouse antibodies in ovarian carcinoma patients treated with bsAb-targeted activated T-lymphocytes. *Int J Cancer* **60**, 450-457.
- LAMERS, C.H., WILLEMSSEN, R.A., LUIDER, B.A., DEBETS, R., and BOLHUIS, R.L. (2002). Protocol for gene transduction and expansion of human T lymphocytes for clinical immunogene therapy of cancer. *Cancer Gene Ther* **9**, 613-623.
- LEE, P.P., YEE, C., SAVAGE, P.A., FONG, L., BROCKSTEDT, D., WEBER, J.S., JOHNSON, D., SWETTER, S., THOMPSON, J., GREENBERG, P.D., ROEDERER, M., and DAVIS, M.M. (1999). Characterization of circulating T cells specific for tumor-associated antigens in melanoma patients. *Nat Med* **5**, 677-685.

- LI, Z., DULLMANN, J., SCHIEDLMEIER, B., SCHMIDT, M., VON KALLE, C., MEYER, J., FORSTER, M., STOCKING, C., WAHLERS, A., FRANK, O., OSTERTAG, W., KUHLCKE, K., ECKERT, H.G., FEHSE, B., and BAUM, C. (2002). Murine leukemia induced by retroviral gene marking. *Science* **296**, 497.
- LILL, N.L., TEVETHIA, M.J., HENDRICKSON, W.G., and TEVETHIA, S.S. (1992). Cytotoxic T lymphocytes (CTL) against a transforming gene product select for transformed cells with point mutations within sequences encoding CTL recognition epitopes. *J Exp Med* **176**, 449-457.
- LOEB, J.E., CORDIER, W.S., HARRIS, M.E., WEITZMAN, M.D., and HOPE, T.J. (1999). Enhanced expression of transgenes from adeno-associated virus vectors with the woodchuck hepatitis virus posttranscriptional regulatory element: implications for gene therapy. *Hum Gene Ther* **10**, 2295-2305.
- LONGWORTH, M.S., and LAIMINS, L.A. (2004). Pathogenesis of human papillomaviruses in differentiating epithelia. *Microbiol Mol Biol Rev* **68**, 362-372.
- LUO, M.J., and REED, R. (1999). Splicing is required for rapid and efficient mRNA export in metazoans. *Proc Natl Acad Sci U S A* **96**, 14937-14942.
- LUZNIK, L., JALLA, S., ENGSTROM, L.W., IANNONE, R., and FUCHS, E.J. (2001). Durable engraftment of major histocompatibility complex-incompatible cells after nonmyeloablative conditioning with fludarabine, low-dose total body irradiation, and posttransplantation cyclophosphamide. *Blood* **98**, 3456-3464.
- MALISSEN, M., TRUCY, J., JOUVIN-MARCHE, E., CAZENAVE, P.A., SCOLLAY, R., and MALISSEN, B. (1992). Regulation of TCR alpha and beta gene allelic exclusion during T-cell development. *Immunol Today* **13**, 315-322.
- MANDRUZZATO, S., BRASSEUR, F., ANDRY, G., BOON, T., and VAN DER BRUGGEN, P. (1997). A CASP-8 mutation recognized by cytolytic T lymphocytes on a human head and neck carcinoma. *J Exp Med* **186**, 785-793.
- MARANINCHI, D., GLUCKMAN, E., BLAISE, D., GUYOTAT, D., RIO, B., PICO, J.L., LEBLOND, V., MICHALLET, M., DREYFUS, F., IFRAH, N., and ET AL. (1987). Impact of T-cell depletion on outcome of allogeneic bone-marrow transplantation for standard-risk leukaemias. *Lancet* **2**, 175-178.
- MARGULIES, D.H. (1997). Interactions of TCRs with MHC-peptide complexes: a quantitative basis for mechanistic models. *Curr Opin Immunol* **9**, 390-395.
- MATSUMOTO, K., WASSARMAN, K.M., and WOLFFE, A.P. (1998). Nuclear history of a pre-mRNA determines the translational activity of cytoplasmic mRNA. *Embo J* **17**, 2107-2121.
- MATSUOKA, M. (2003). Human T-cell leukemia virus type I and adult T-cell leukemia. *Oncogene* **22**, 5131-5140.
- MAVILIO, F., FERRARI, G., ROSSINI, S., NOBILI, N., BONINI, C., CASORATI, G., TRAVERSARI, C., and BORDIGNON, C. (1994). Peripheral blood lymphocytes as target cells of retroviral vector-mediated gene transfer. *Blood* **83**, 1988-1997.
- MAY, C., RIVELLA, S., CALLEGARI, J., HELLER, G., GAENSLER, K.M., LUZZATTO, L., and SADELAIN, M. (2000). Therapeutic haemoglobin synthesis in beta-thalassaemic mice expressing lentivirus-encoded human beta-globin. *Nature* **406**, 82-86.
- MAY, K.F., JR., CHEN, L., ZHENG, P., and LIU, Y. (2002). Anti-4-1BB monoclonal antibody enhances rejection of large tumor burden by promoting survival but not clonal expansion of tumor-specific CD8+ T cells. *Cancer Res* **62**, 3459-3465.
- MILLER, A.D., and ROSMAN, G.J. (1989). Improved retroviral vectors for gene transfer and expression. *Biotechniques* **7**, 980-982, 984-986, 989-990.
- MILLER, D.G., and MILLER, A.D. (1994). A family of retroviruses that utilize related phosphate transporters for cell entry. *J Virol* **68**, 8270-8276.
- MILLER, R.A., MALONEY, D.G., WARNGKE, R., and LEVY, R. (1982). Treatment of B-cell lymphoma with monoclonal anti-idiotype antibody. *N Engl J Med* **306**, 517-522.
- mitsuyasu, R.T., ANTON, P.A., DEEKS, S.G., SCADDEN, D.T., CONNICK, E., DOWNS, M.T., BAKKER, A., ROBERTS, M.R., JUNE, C.H., JALALI, S., LIN, A.A., PENNATHUR-DAS, R., and HEGE, K.M. (2000). Prolonged survival and tissue trafficking following adoptive transfer of CD4zeta gene-modified autologous CD4(+) and CD8(+) T cells in human immunodeficiency virus-infected subjects. *Blood* **96**, 785-793.
- MODLICH, U., KUSTIKOVA, O.S., SCHMIDT, M., RUDOLPH, C., MEYER, J., LI, Z., KAMINO, K., VON NEUHOFF, N., SCHLEGLBERGER, B., KUEHLCKE, K., BUNTING, K.D., SCHMIDT, S., DEICHMANN, A., VON KALLE, C., FEHSE, B., and BAUM, C. (2005). Leukemias following retroviral transfer of multidrug resistance 1 (MDR1) are driven by combinatorial insertional mutagenesis. *Blood* **105**, 4235-4246.
- MONACH, P.A., MEREDITH, S.C., SIEGEL, C.T., and SCHREIBER, H. (1995). A unique tumor antigen produced by a single amino acid substitution. *Immunity* **2**, 45-59.

- MORGAN, R.A., DUDLEY, M.E., YU, Y.Y., ZHENG, Z., ROBBINS, P.F., THEORET, M.R., WUNDERLICH, J.R., HUGHES, M.S., RESTIFO, N.P., and ROSENBERG, S.A. (2003). High efficiency TCR gene transfer into primary human lymphocytes affords avid recognition of melanoma tumor antigen glycoprotein 100 and does not alter the recognition of autologous melanoma antigens. *J Immunol* **171**, 3287-3295.
- MORRIS, E.C., TSALLIOS, A., BENDLE, G.M., XUE, S.A., and STAUSS, H.J. (2005). A critical role of T cell antigen receptor-transduced MHC class I-restricted helper T cells in tumor protection. *Proc Natl Acad Sci U S A*.
- MORSE, M.A., CLAY, T.M., and LYERLY, H.K. (2002). Current status of adoptive immunotherapy of malignancies. *Expert Opin Biol Ther* **2**, 237-247.
- MULE, J.J., YANG, J., SHU, S., and ROSENBERG, S.A. (1986). The anti-tumor efficacy of lymphokine-activated killer cells and recombinant interleukin 2 in vivo: direct correlation between reduction of established metastases and cytolytic activity of lymphokine-activated killer cells. *J Immunol* **136**, 3899-3909.
- MULLIGAN, R.C. (1993). The basic science of gene therapy. *Science* **260**, 926-932.
- MUMBERG, D., MONACH, P.A., WANDERLING, S., PHILIP, M., TOLEDANO, A.Y., SCHREIBER, R.D., and SCHREIBER, H. (1999). CD4(+) T cells eliminate MHC class II-negative cancer cells in vivo by indirect effects of IFN-gamma. *Proc Natl Acad Sci U S A* **96**, 8633-8638.
- NAKAO, M., SHICHIJO, S., IMAIZUMI, T., INOUE, Y., MATSUNAGA, K., YAMADA, A., KIKUCHI, M., TSUDA, N., OHTA, K., TAKAMORI, S., YAMANA, H., FUJITA, H., and ITOH, K. (2000). Identification of a gene coding for a new squamous cell carcinoma antigen recognized by the CTL. *J Immunol* **164**, 2565-2574.
- NEUMANN, E., ENGELSBERG, A., DECKER, J., STORKEL, S., JAEGER, E., HUBER, C., and SELIGER, B. (1998). Heterogeneous expression of the tumor-associated antigens RAGE-1, PRAME, and glycoprotein 75 in human renal cell carcinoma: candidates for T-cell-based immunotherapies? *Cancer Res* **58**, 4090-4095.
- NIEDERMAN, T.M., GHOGAWALA, Z., CARTER, B.S., TOMPKINS, H.S., RUSSELL, M.M., and MULLIGAN, R.C. (2002). Antitumor activity of cytotoxic T lymphocytes engineered to target vascular endothelial growth factor receptors. *Proc Natl Acad Sci U S A* **99**, 7009-7014.
- NISHIMURA, M.I., AVICHEZER, D., CUSTER, M.C., LEE, C.S., CHEN, C., PARKHURST, M.R., DIAMOND, R.A., ROBBINS, P.F., SCHWARTZENTRUBER, D.J., and ROSENBERG, S.A. (1999). MHC class I-restricted recognition of a melanoma antigen by a human CD4+ tumor infiltrating lymphocyte. *Cancer Res* **59**, 6230-6238.
- NOURI-SHIRAZI, M., BANCHEREAU, J., FAY, J., and PALUCKA, K. (2000). Dendritic cell based tumor vaccines. *Immunol Lett* **74**, 5-10.
- NOVAK, U., HARRIS, E.A., FORRESTER, W., GROUDINE, M., and GELINAS, R. (1990). High-level beta-globin expression after retroviral transfer of locus activation region-containing human beta-globin gene derivatives into murine erythroleukemia cells. *Proc Natl Acad Sci U S A* **87**, 3386-3390.
- OHGUCHI, S., NAKATSUKASA, H., HIGASHI, T., ASHIDA, K., NOUSO, K., ISHIZAKI, M., HINO, N., KOBAYASHI, Y., UEMATSU, S., and TSUJI, T. (1998). Expression of alpha-fetoprotein and albumin genes in human hepatocellular carcinomas: limitations in the application of the genes for targeting human hepatocellular carcinoma in gene therapy. *Hepatology* **27**, 599-607.
- OKA, Y., ELISSEEVA, O.A., TSUBOI, A., OGAWA, H., TAMAKI, H., LI, H., OJI, Y., KIM, E.H., SOMA, T., ASADA, M., UEDA, K., MARUYA, E., SAJI, H., KISHIMOTO, T., UDAKA, K., and SUGIYAMA, H. (2000). Human cytotoxic T-lymphocyte responses specific for peptides of the wild-type Wilms' tumor gene (WT1) product. *Immunogenetics* **51**, 99-107.
- OLD, L.J., and CHEN, Y.T. (1998). New paths in human cancer serology. *J Exp Med* **187**, 1163-1167.
- OOSTERWIJK, E., RUITER, D.J., HOEDEMAEKER, P.J., PAUWELS, E.K., JONAS, U., ZWARTENDIJK, J., and WARNAAR, S.O. (1986). Monoclonal antibody G 250 recognizes a determinant present in renal-cell carcinoma and absent from normal kidney. *Int J Cancer* **38**, 489-494.
- OOSTERWIJK-WAKKA, J.C., TIEMESSEN, D.M., BLEUMER, I., DE VRIES, I.J., JONGMANS, W., ADEMA, G.J., DEBRUYNE, F.M., DE MULDER, P.H., OOSTERWIJK, E., and MULDERS, P.F. (2002). Vaccination of patients with metastatic renal cell carcinoma with autologous dendritic cells pulsed with autologous tumor antigens in combination with interleukin-2: a phase 1 study. *J Immunother* **25**, 500-508.
- ORENTAS, R.J., BIRCHER, L.A., and ROSKOPF, S. (2003). Retroviral transfer of T-cell receptor genes produces cells with a broad range of lytic activity. *Scand J Immunol* **58**, 33-42.
- ORENTAS, R.J., ROSKOPF, S.J., NOLAN, G.P., and NISHIMURA, M.I. (2001). Retroviral transduction of a T cell receptor specific for an Epstein-Barr virus-encoded peptide. *Clin Immunol* **98**, 220-228.

- PADOVAN, E., CASORATI, G., DELLABONA, P., MEYER, S., BROCKHAUS, M., and LANZAVECCHIA, A. (1993). Expression of two T cell receptor alpha chains: dual receptor T cells. *Science* **262**, 422-424.
- PAN, Q., GOLLAPUDI, A.S., and DAVE, V.P. (2004). Biochemical evidence for the presence of a single CD3delta and CD3gamma chain in the surface T cell receptor/CD3 complex. *J Biol Chem* **279**, 51068-51074.
- PARDOLL, D.M., and TOPALIAN, S.L. (1998). The role of CD4+ T cell responses in antitumor immunity. *Curr Opin Immunol* **10**, 588-594.
- PATEL, S.D., GE, Y., MOSKALENKO, M., and MCARTHUR, J.G. (2000). Anti-Tumor CC49-zeta CD4 T cells possess both cytolytic and helper functions. *J Immunother* **23**, 661-668.
- PAUL, W.E. (2003). *Fundamental immunology*. (Lippincott Williams & Wilkins, Philadelphia).
- PAWLIUK, R., KAY, R., LANSDORP, P., and HUMPHRIES, R.K. (1994). Selection of retrovirally transduced hematopoietic cells using CD24 as a marker of gene transfer. *Blood* **84**, 2868-2877.
- POHLA, H., FRANKENBERGER, B., STADLBAUER, B., OBERNEDER, R., HOFSTETTER, A., WILLIMSKY, G., PEZZUTTO, A., DORKEN, B., BLANKENSTEIN, T., and SCHENDEL, D.J. (2000). Allogeneic vaccination for renal cell carcinoma: development and monitoring. *Bone Marrow Transplant* **25 Suppl 2**, S83-87.
- POLLOK, K.E., HANENBERG, H., NOBLITT, T.W., SCHROEDER, W.L., KATO, I., EMANUEL, D., and WILLIAMS, D.A. (1998). High-efficiency gene transfer into normal and adenosine deaminase-deficient T lymphocytes is mediated by transduction on recombinant fibronectin fragments. *J Virol* **72**, 4882-4892.
- PREHN, R.T., and MAIN, J.M. (1957). Immunity to methylcholanthrene-induced sarcomas. *J Natl Cancer Inst* **18**, 769-778.
- PROBST-KEPPER, M., STROOBANT, V., KRIDEL, R., GAUGLER, B., LANDRY, C., BRASSEUR, F., COSYNS, J.P., WEYNAND, B., BOON, T., and VAN DEN EYNDE, B.J. (2001). An alternative open reading frame of the human macrophage colony-stimulating factor gene is independently translated and codes for an antigenic peptide of 14 amino acids recognized by tumor-infiltrating CD8 T lymphocytes. *J Exp Med* **193**, 1189-1198.
- PROUDFOOT, N.J. (1986). Transcriptional interference and termination between duplicated alpha-globin gene constructs suggests a novel mechanism for gene regulation. *Nature* **322**, 562-565.
- PURTILO, D.T., SAKAMOTO, K., SAEMUNDSEN, A.K., SULLIVAN, J.L., SYNNERHOLM, A.C., ANVRET, M., PRITCHARD, J., SLOPER, C., SIEFF, C., PINCOTT, J., PACHMAN, L., RICH, K., CRUZI, F., CORNET, J.A., COLLINS, R., BARNES, N., KNIGHT, J., SANDSTEDT, B., and KLEIN, G. (1981). Documentation of Epstein-Barr virus infection in immunodeficient patients with life-threatening lymphoproliferative diseases by clinical, virological, and immunopathological studies. *Cancer Res* **41**, 4226-4236.
- QIN, Z., and BLANKENSTEIN, T. (2004). A cancer immuno-surveillance controversy. *Nat Immunol* **5**, 3-4; author reply 4-5.
- QIN, Z., RICHTER, G., SCHULER, T., IBE, S., CAO, X., and BLANKENSTEIN, T. (1998). B cells inhibit induction of T cell-dependent tumor immunity. *Nat Med* **4**, 627-630.
- REISFELD, R.A., and GILLIES, S.D. (1996). Recombinant antibody fusion proteins for cancer immunotherapy. *Curr Top Microbiol Immunol* **213 (Pt 3)**, 27-53.
- RENKVIST, N., CASTELLI, C., ROBBINS, P.F., and PARMIANI, G. (2001). A listing of human tumor antigens recognized by T cells. *Cancer Immunol Immunother* **50**, 3-15.
- RICKINSON, A.B., MURRAY, R.J., BROOKS, J., GRIFFIN, H., MOSS, D.J., and MASUCCI, M.G. (1992). T cell recognition of Epstein-Barr virus associated lymphomas. *Cancer Surv* **13**, 53-80.
- RIDDELL, S.R., ELLIOTT, M., LEWINSOHN, D.A., GILBERT, M.J., WILSON, L., MANLEY, S.A., LUPTON, S.D., OVERELL, R.W., REYNOLDS, T.C., COREY, L., and GREENBERG, P.D. (1996). T-cell mediated rejection of gene-modified HIV-specific cytotoxic T lymphocytes in HIV-infected patients. *Nat Med* **2**, 216-223.
- RINI, B.I., ZIMMERMAN, T., STADLER, W.M., GAJEWSKI, T.F., and VOGELZANG, N.J. (2002). Allogeneic stem-cell transplantation of renal cell cancer after nonmyeloablative chemotherapy: feasibility, engraftment, and clinical results. *J Clin Oncol* **20**, 2017-2024.
- ROBBINS, P.F., EL-GAMIL, M., LI, Y.F., KAWAKAMI, Y., LOFTUS, D., APPELLA, E., and ROSENBERG, S.A. (1996). A mutated beta-catenin gene encodes a melanoma-specific antigen recognized by tumor infiltrating lymphocytes. *J Exp Med* **183**, 1185-1192.
- RONGIN, C., CHUNG-SCOTT, V., POULLION, I., AKNOUCHE, N., GAUDIN, C., and TRIEBEL, F. (1999). A non-AUG-defined alternative open reading frame of the intestinal carboxyl esterase mRNA generates an epitope recognized by renal cell carcinoma-reactive tumor-infiltrating lymphocytes in situ. *J Immunol* **163**, 483-490.

- ROONEY, C.M., SMITH, C.A., NG, C.Y., LOFTIN, S., LI, C., KRANCE, R.A., BRENNER, M.K., and HESLOP, H.E. (1995). Use of gene-modified virus-specific T lymphocytes to control Epstein-Barr-virus-related lymphoproliferation. *Lancet* **345**, 9-13.
- ROOST, H.P., BACHMANN, M.F., HAAG, A., KALINKE, U., PLISKA, V., HENGARTNER, H., and ZINKERNAGEL, R.M. (1995). Early high-affinity neutralizing anti-viral IgG responses without further overall improvements of affinity. *Proc Natl Acad Sci U S A* **92**, 1257-1261.
- ROSENBERG, S.A., LOTZE, M.T., YANG, J.C., TOPALIAN, S.L., CHANG, A.E., SCHWARTZENTRUBER, D.J., AEBERSOLD, P., LEITMAN, S., LINEHAN, W.M., SEIPP, C.A., and ET AL. (1993). Prospective randomized trial of high-dose interleukin-2 alone or in conjunction with lymphokine-activated killer cells for the treatment of patients with advanced cancer. *J Natl Cancer Inst* **85**, 622-632.
- ROSENBERG, S.A., YANG, J.C., and RESTIFO, N.P. (2004). Cancer immunotherapy: moving beyond current vaccines. *Nat Med* **10**, 909-915.
- ROSENBERG, S.A., YANNELLI, J.R., YANG, J.C., TOPALIAN, S.L., SCHWARTZENTRUBER, D.J., WEBER, J.S., PARKINSON, D.R., SEIPP, C.A., EINHORN, J.H., and WHITE, D.E. (1994). Treatment of patients with metastatic melanoma with autologous tumor-infiltrating lymphocytes and interleukin 2. *J Natl Cancer Inst* **86**, 1159-1166.
- ROSSIG, C., BOLLARD, C.M., NUCHTERN, J.G., MERCHANT, D.A., and BRENNER, M.K. (2001). Targeting of G(D2)-positive tumor cells by human T lymphocytes engineered to express chimeric T-cell receptor genes. *Int J Cancer* **94**, 228-236.
- ROSSIG, C., BOLLARD, C.M., NUCHTERN, J.G., ROONEY, C.M., and BRENNER, M.K. (2002). Epstein-Barr virus-specific human T lymphocytes expressing antitumor chimeric T-cell receptors: potential for improved immunotherapy. *Blood* **99**, 2009-2016.
- ROSZKOWSKI, J.J., LYONS, G.E., KAST, W.M., YEE, C., VAN BESIEN, K., and NISHIMURA, M.I. (2005). Simultaneous generation of CD8+ and CD4+ melanoma-reactive T cells by retroviral-mediated transfer of a single T-cell receptor. *Cancer Res* **65**, 1570-1576.
- ROSZKOWSKI, J.J., YU, D.C., RUBINSTEIN, M.P., MCKEE, M.D., COLE, D.J., and NISHIMURA, M.I. (2003). CD8-independent tumor cell recognition is a property of the T cell receptor and not the T cell. *J Immunol* **170**, 2582-2589.
- SADELAIN, M., RIVIERE, I., and BRENTJENS, R. (2003). Targeting tumours with genetically enhanced T lymphocytes. *Nat Rev Cancer* **3**, 35-45.
- SCHAFT, N. (2003). Redirecting human T cells to tumors via transfer of T cell receptor genes : a study of tumor-specific T cell responses and peptide fine specificity. In *Department of Medical Oncology*. (Erasmus Medical Center-Daniel den Hoed, Rotterdam).
- SCHAFT, N., LANKIEWICZ, B., GRATAMA, J.W., BOLHUIS, R.L., and DEBETS, R. (2003a). Flexible and sensitive method to functionally validate tumor-specific receptors via activation of NFAT. *J Immunol Methods* **280**, 13-24.
- SCHAFT, N., WILLEMSSEN, R.A., DE VRIES, J., LANKIEWICZ, B., ESSERS, B.W., GRATAMA, J.W., FIGDOR, C.G., BOLHUIS, R.L., DEBETS, R., and ADEMA, G.J. (2003b). Peptide fine specificity of anti-glycoprotein 100 CTL is preserved following transfer of engineered TCR alpha beta genes into primary human T lymphocytes. *J Immunol* **170**, 2186-2194.
- SCHAMBACH, A., WODRICH, H., HILDINGER, M., BOHNE, J., KRAUSSLICH, H.G., and BAUM, C. (2000). Context dependence of different modules for posttranscriptional enhancement of gene expression from retroviral vectors. *Mol Ther* **2**, 435-445.
- SCHENDEL, D.J., FRANKENBERGER, B., JANTZER, P., CAYEUX, S., NOBETANER, E., WILLIMSKY, G., MAGET, B., POHLA, H., and BLANKENSTEIN, T. (2000). Expression of B7.1 (CD80) in a renal cell carcinoma line allows expansion of tumor-associated cytotoxic T lymphocytes in the presence of an alloresponse. *Gene Ther* **7**, 2007-2014.
- SCHENDEL, D.J., GANSBACHER, B., OBERNEDER, R., KRIEGMAIR, M., HOFSTETTER, A., RIETHMULLER, G., and SEGURADO, O.G. (1993). Tumor-specific lysis of human renal cell carcinomas by tumor-infiltrating lymphocytes. I. HLA-A2-restricted recognition of autologous and allogeneic tumor lines. *J Immunol* **151**, 4209-4220.
- SCHENDEL, D.J., OBERNEDER, R., FALK, C.S., JANTZER, P., KRESSENSTEIN, S., MAGET, B., HOFSTETTER, A., RIETHMULLER, G., and NOSSNER, E. (1997). Cellular and molecular analyses of major histocompatibility complex (MHC) restricted and non-MHC-restricted effector cells recognizing renal cell carcinomas: problems and perspectives for immunotherapy. *J Mol Med* **75**, 400-413.
- SCHMIDT, S.M., SCHAG, K., MULLER, M.R., WEINSCHENK, T., APPEL, S., SCHOOR, O., WECK, M.M., GRUNEBACH, F., KANZ, L., STEVANOVIC, S., RAMMENSEE, H.G., and BROSSART, P. (2004). Induction of adipophilin-specific cytotoxic T lymphocytes using a novel HLA-A2-binding peptide that mediates tumor cell lysis. *Cancer Res* **64**, 1164-1170.

- SCHOLTEN, K.B., SCHREURS, M.W., RUIZENDAAL, J.J., KUETER, E.W., KRAMER, D., VEENBERGEN, S., MEIJER, C.J., and HOOIJBERG, E. (2005). Preservation and redirection of HPV16E7-specific T cell receptors for immunotherapy of cervical cancer. *Clin Immunol* **114**, 119-129.
- SCHREIBER, H. (2003). Tumor Immunology. In *Fundamental Immunology*. E. William, ed. (LIPPINCOTT WILLIAMS & WILKINS, Philadelphia).
- SCHREURS, M.W., DE BOER, A.J., FIGDOR, C.G., and ADEMA, G.J. (1998). Genetic vaccination against the melanocyte lineage-specific antigen gp100 induces cytotoxic T lymphocyte-mediated tumor protection. *Cancer Res* **58**, 2509-2514.
- SCHUMACHER, T.N. (2002). T-cell-receptor gene therapy. *Nat Rev Immunol* **2**, 512-519.
- SEGAL, D.M., WEINER, G.J., and WEINER, L.M. (2001). Introduction: bispecific antibodies. *J Immunol Methods* **248**, 1-6.
- SHANKARAN, V., IKEDA, H., BRUCE, A.T., WHITE, J.M., SWANSON, P.E., OLD, L.J., and SCHREIBER, R.D. (2001). IFNgamma and lymphocytes prevent primary tumour development and shape tumour immunogenicity. *Nature* **410**, 1107-1111.
- SHEDLOCK, D.J., and SHEN, H. (2003). Requirement for CD4 T cell help in generating functional CD8 T cell memory. *Science* **300**, 337-339.
- SHILONI, E., LAFRENIERE, R., MULE, J.J., SCHWARZ, S.L., and ROSENBERG, S.A. (1986). Effect of immunotherapy with allogeneic lymphokine-activated killer cells and recombinant interleukin 2 on established pulmonary and hepatic metastases in mice. *Cancer Res* **46**, 5633-5640.
- SIMONS, J.W., JAFFEE, E.M., WEBER, C.E., LEVITSKY, H.I., NELSON, W.G., CARDUCCI, M.A., LAZENBY, A.J., COHEN, L.K., FINN, C.C., CLIFT, S.M., HAUDA, K.M., BECK, L.A., LEIFERMAN, K.M., OWENS, A.H., JR., PIANTADOSI, S., DRANOFF, G., MULLIGAN, R.C., PARDOLL, D.M., and MARSHALL, F.F. (1997). Bioactivity of autologous irradiated renal cell carcinoma vaccines generated by ex vivo granulocyte-macrophage colony-stimulating factor gene transfer. *Cancer Res* **57**, 1537-1546.
- SLAVIN, S., NAPARSTEK, E., NAGLER, A., ACKERSTEIN, A., SAMUEL, S., KAPELUSHNIK, J., BRAUTBAR, C., and OR, R. (1996). Allogeneic cell therapy with donor peripheral blood cells and recombinant human interleukin-2 to treat leukemia relapse after allogeneic bone marrow transplantation. *Blood* **87**, 2195-2204.
- SNOW, R.M., and SCHELLHAMMER, P.F. (1982). Spontaneous regression of metastatic renal cell carcinoma. *Urology* **20**, 177-181.
- SOMIA, N., and VERMA, I.M. (2000). Gene therapy: trials and tribulations. *Nat Rev Genet* **1**, 91-99.
- SPIESS, P.J., YANG, J.C., and ROSENBERG, S.A. (1987). In vivo antitumor activity of tumor-infiltrating lymphocytes expanded in recombinant interleukin-2. *J Natl Cancer Inst* **79**, 1067-1075.
- STANISLAWSKI, T., VOSS, R.H., LOTZ, C., SADOVNIKOVA, E., WILLEMSSEN, R.A., KUBALL, J., RUPPERT, T., BOLHUIS, R.L., MELIEF, C.J., HUBER, C., STAUSS, H.J., and THEOBALD, M. (2001). Circumventing tolerance to a human MDM2-derived tumor antigen by TCR gene transfer. *Nat Immunol* **2**, 962-970.
- STEFFENS, M.G., BOERMAN, O.C., DE MULDER, P.H., OYEN, W.J., BUIJS, W.C., WITJES, J.A., VAN DEN BROEK, W.J., OOSTERWIJK-WAKKA, J.C., DEBRUYNE, F.M., CORSTENS, F.H., and OOSTERWIJK, E. (1999). Phase I radioimmunotherapy of metastatic renal cell carcinoma with 131I-labeled chimeric monoclonal antibody G250. *Clin Cancer Res* **5**, 3268s-3274s.
- STORKEL, S., KEYMER, R., STEINBACH, F., and THOENES, W. (1992). Reaction patterns of tumor infiltrating lymphocytes in different renal cell carcinomas and oncocytomas. *Prog Clin Biol Res* **378**, 217-223.
- STRAATHOF, K.C., PUZE, M.A., YOTNDA, P., DOTTI, G., VANIN, E.F., BRENNER, M.K., HESLOP, H.E., SPENCER, D.M., and ROONEY, C.M. (2005). An inducible caspase 9 safety switch for T-cell therapy. *Blood* **105**, 4247-4254.
- STUTMAN, O. (1974). Tumor development after 3-methylcholanthrene in immunologically deficient athymic-nude mice. *Science* **183**, 534-536.
- SUN, J.C., WILLIAMS, M.A., and BEVAN, M.J. (2004). CD4+ T cells are required for the maintenance, not programming, of memory CD8+ T cells after acute infection. *Nat Immunol* **5**, 927-933.
- SURMAN, D.R., DUDLEY, M.E., OVERWIJK, W.W., and RESTIFO, N.P. (2000). Cutting edge: CD4+ T cell control of CD8+ T cell reactivity to a model tumor antigen. *J Immunol* **164**, 562-565.
- SWINDLE, C.S., KIM, H.G., and KLUG, C.A. (2004). Mutation of CpGs in the murine stem cell virus retroviral vector long terminal repeat represses silencing in embryonic stem cells. *J Biol Chem* **279**, 34-41.
- TAHARA, H., FUJIO, K., ARAKI, Y., SETOGUCHI, K., MISAKI, Y., KITAMURA, T., and YAMAMOTO, K. (2003). Reconstitution of CD8+ T cells by retroviral transfer of the TCR alpha beta-chain

- genes isolated from a clonally expanded P815-infiltrating lymphocyte. *J Immunol* **171**, 2154-2160.
- TEVETHIA, S.S., BLASECKI, J.W., VANECK, G., and GOLDSTEIN, A.L. (1974). Requirement of thymus-derived theta-positive lymphocytes for rejection of DNA virus (SV 40) tumors in mice. *J Immunol* **113**, 1417-1423.
- THEOBALD, M., BIGGS, J., DITTMER, D., LEVINE, A.J., and SHERMAN, L.A. (1995). Targeting p53 as a general tumor antigen. *Proc Natl Acad Sci U S A* **92**, 11993-11997.
- THOMAS, C.E., EHRHARDT, A., and KAY, M.A. (2003). Progress and problems with the use of viral vectors for gene therapy. *Nat Rev Genet* **4**, 346-358.
- TIMMERMAN, J.M., CZERWINSKI, D.K., DAVIS, T.A., HSU, F.J., BENIKE, C., HAO, Z.M., TAIDI, B., RAJAPAKSA, R., CASPAR, C.B., OKADA, C.Y., VAN BECKHOVEN, A., LILES, T.M., ENGLEMAN, E.G., and LEVY, R. (2002). Idiotypic-pulsed dendritic cell vaccination for B-cell lymphoma: clinical and immune responses in 35 patients. *Blood* **99**, 1517-1526.
- TINDLE, R.W. (1996). Human papillomavirus vaccines for cervical cancer. *Curr Opin Immunol* **8**, 643-650.
- TOES, R.E., OSSENDORP, F., OFFRINGA, R., and MELIEFF, C.J. (1999). CD4 T cells and their role in antitumor immune responses. *J Exp Med* **189**, 753-756.
- TOOZE, J. (1973). Origins of contemporary tumor virus research. In *The molecular biology of tumor viruses*. (Cold Spring Harbor Laboratories, Cold Spring Harbor, NY).
- TSANG, K.Y., ZAREMBA, S., NIERODA, C.A., ZHU, M.Z., HAMILTON, J.M., and SCHLOM, J. (1995). Generation of human cytotoxic T cells specific for human carcinoembryonic antigen epitopes from patients immunized with recombinant vaccinia-CEA vaccine. *J Natl Cancer Inst* **87**, 982-990.
- TSUJI, T., YASUKAWA, M., MATSUZAKI, J., OHKURI, T., CHAMOTO, K., WAKITA, D., AZUMA, T., NIIYA, H., MIYOSHI, H., KUZUSHIMA, K., OKA, Y., SUGIYAMA, H., IKEDA, H., and NISHIMURA, T. (2005). Generation of human tumor-specific, HLA class I-restricted Th1 and Tc1 cells by cell engineering with tumor peptide-specific T cell receptor genes. *Blood*.
- TUMA, R.A., GIANNINO, R., GUIRNALDA, P., LEINER, I., and PAMER, E.G. (2002). Rescue of CD8 T cell-mediated antimicrobial immunity with a nonspecific inflammatory stimulus. *J Clin Invest* **110**, 1493-1501.
- UCKERT, W., BECKER, C., GLADOW, M., KLEIN, D., KAMMERTOENS, T., PEDERSEN, L., and BLANKENSTEIN, T. (2000). Efficient gene transfer into primary human CD8+ T lymphocytes by MuLV-10A1 retrovirus pseudotype. *Hum Gene Ther* **11**, 1005-1014.
- UCKUN, F.M., JASZCZ, W., AMBRUS, J.L., FAUCI, A.S., GAJL-PECZALSKA, K., SONG, C.W., WICK, M.R., MYERS, D.E., WADDICK, K., and LEDBETTER, J.A. (1988). Detailed studies on expression and function of CD19 surface determinant by using B43 monoclonal antibody and the clinical potential of anti-CD19 immunotoxins. *Blood* **71**, 13-29.
- UEMATSU, Y., RYSER, S., DEMBIC, Z., BORGULYA, P., KRIMPENFORT, P., BERNS, A., VON BOEHMER, H., and STEINMETZ, M. (1988). In transgenic mice the introduced functional T cell receptor beta gene prevents expression of endogenous beta genes. *Cell* **52**, 831-841.
- UENO, T., FUJIWARA, M., TOMIYAMA, H., ONODERA, M., and TAKIGUCHI, M. (2004). Reconstitution of anti-HIV effector functions of primary human CD8 T lymphocytes by transfer of HIV-specific alphabeta TCR genes. *Eur J Immunol* **34**, 3379-3388.
- UENO, T., TOMIYAMA, H., and TAKIGUCHI, M. (2002). Single T cell receptor-mediated recognition of an identical HIV-derived peptide presented by multiple HLA class I molecules. *J Immunol* **169**, 4961-4969.
- URBAN, J.L., SHEPARD, H.M., ROTHSTEIN, J.L., SUGARMAN, B.J., and SCHREIBER, H. (1986). Tumor necrosis factor: a potent effector molecule for tumor cell killing by activated macrophages. *Proc Natl Acad Sci U S A* **83**, 5233-5237.
- URBANELLI, D., SAWADA, Y., RASKOVA, J., JONES, N.C., SHENK, T., and RASKA, K., JR. (1989). C-terminal domain of the adenovirus E1A oncogene product is required for induction of cytotoxic T lymphocytes and tumor-specific transplantation immunity. *Virology* **173**, 607-614.
- UYTTENHOVE, C., MARYANSKI, J., and BOON, T. (1983). Escape of mouse mastocytoma P815 after nearly complete rejection is due to antigen-loss variants rather than immunosuppression. *J Exp Med* **157**, 1040-1052.
- VAN DEN EYNDE, B., PEETERS, O., DE BACKER, O., GAUGLER, B., LUCAS, S., and BOON, T. (1995). A new family of genes coding for an antigen recognized by autologous cytolytic T lymphocytes on a human melanoma. *J Exp Med* **182**, 689-698.
- VAN DEN EYNDE, B.J., GAUGLER, B., PROBST-KEPPER, M., MICHAUX, L., DEVUYST, O., LORGE, F., WEYNANTS, P., and BOON, T. (1999). A new antigen recognized by cytolytic T lymphocytes on a human kidney tumor results from reverse strand transcription. *J Exp Med* **190**, 1793-1800.

- 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.
- VEELKEN, H., MACKENSEN, A., LAHN, M., KOHLER, G., BECKER, D., FRANKE, B., BRENNSCHEIDT, U., KULMBURG, P., ROSENTHAL, F.M., KELLER, H., HASSE, J., SCHULTZE-SEEMANN, W., FARTHMANN, E.H., MERTELSMANN, R., and LINDEMANN, A. (1997). A phase-I clinical study of autologous tumor cells plus interleukin-2-gene-transfected allogeneic fibroblasts as a vaccine in patients with cancer. *Int J Cancer* **70**, 269-277.
- VISSERS, J.L., DE VRIES, I.J., ENGELEN, L.P., SCHARENBORG, N.M., MOLKENBOER, J., FIGDOR, C.G., OOSTERWIJK, E., and ADEMA, G.J. (2002). Renal cell carcinoma-associated antigen G250 encodes a naturally processed epitope presented by human leukocyte antigen-DR molecules to CD4(+) T lymphocytes. *Int J Cancer* **100**, 441-444.
- VISSERS, J.L., DE VRIES, I.J., SCHREURS, M.W., ENGELEN, L.P., OOSTERWIJK, E., FIGDOR, C.G., and ADEMA, G.J. (1999). The renal cell carcinoma-associated antigen G250 encodes a human leukocyte antigen (HLA)-A2.1-restricted epitope recognized by cytotoxic T lymphocytes. *Cancer Res* **59**, 5554-5559.
- VON BOEHMER, H., AIFANTIS, I., GOUNARI, F., AZOGUI, O., HAUGHN, L., APOSTOLOU, I., JAECKEL, E., GRASSI, F., and KLEIN, L. (2003). Thymic selection revisited: how essential is it? *Immunol Rev* **191**, 62-78.
- VONDERHEIDE, R.H., HAHN, W.C., SCHULTZE, J.L., and NADLER, L.M. (1999). The telomerase catalytic subunit is a widely expressed tumor-associated antigen recognized by cytotoxic T lymphocytes. *Immunity* **10**, 673-679.
- WALKER, R.E., BECHTEL, C.M., NATARAJAN, V., BASELER, M., HEGE, K.M., METCALF, J.A., STEVENS, R., HAZEN, A., BLAESE, R.M., CHEN, C.C., LEITMAN, S.F., PALENSKY, J., WITTES, J., DAVEY, R.T., JR., FALLOON, J., POLIS, M.A., KOVACS, J.A., BROAD, D.F., LEVINE, B.L., ROBERTS, M.R., MASUR, H., and LANE, H.C. (2000). Long-term in vivo survival of receptor-modified syngeneic T cells in patients with human immunodeficiency virus infection. *Blood* **96**, 467-474.
- WALTER, E.A., GREENBERG, P.D., GILBERT, M.J., FINCH, R.J., WATANABE, K.S., THOMAS, E.D., and RIDDELL, S.R. (1995). Reconstitution of cellular immunity against cytomegalovirus in recipients of allogeneic bone marrow by transfer of T-cell clones from the donor. *N Engl J Med* **333**, 1038-1044.
- WANG, L., ROBBINS, P.B., CARBONARO, D.A., and KOHN, D.B. (1998). High-resolution analysis of cytosine methylation in the 5' long terminal repeat of retroviral vectors. *Hum Gene Ther* **9**, 2321-2330.
- 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.
- WATANABE, Y., KURIBAYASHI, K., MIYATAKE, S., NISHIHARA, K., NAKAYAMA, E., TANIYAMA, T., and SAKATA, T. (1989). Exogenous expression of mouse interferon gamma cDNA in mouse neuroblastoma C1300 cells results in reduced tumorigenicity by augmented anti-tumor immunity. *Proc Natl Acad Sci U S A* **86**, 9456-9460.
- WEBER, E., ANDERSON, W.F., and KASAHIARA, N. (2001). Recent advances in retrovirus vector-mediated gene therapy: teaching an old vector new tricks. *Curr Opin Mol Ther* **3**, 439-453.
- WEIJTENS, M.E., WILLEMSSEN, R.A., HART, E.H., and BOLHUIS, R.L. (1998). A retroviral vector system 'STITCH' in combination with an optimized single chain antibody chimeric receptor gene structure allows efficient gene transduction and expression in human T lymphocytes. *Gene Ther* **5**, 1195-1203.
- WEINBERG, R.A. (1996). How cancer arises. *Sci Am* **275**, 62-70.
- WERNER, M., KRAUNUS, J., BAUM, C., and BROCKER, T. (2004). B-cell-specific transgene expression using a self-inactivating retroviral vector with human CD19 promoter and viral post-transcriptional regulatory element. *Gene Ther* **11**, 992-1000.
- WILLEMSSEN, R., RONTELTAP, C., HEUVELING, M., DEBETS, R., and BOLHUIS, R. (2005a). Redirecting human CD4+ T lymphocytes to the MHC class I-restricted melanoma antigen MAGE-A1 by TCR alphabeta gene transfer requires CD8alpha. *Gene Ther* **12**, 140-146.
- WILLEMSSEN, R.A., DEBETS, R., HART, E., HOOGENBOOM, H.R., BOLHUIS, R.L., and CHAMES, P. (2001). A phage display selected fab fragment with MHC class I-restricted specificity for MAGE-A1 allows for retargeting of primary human T lymphocytes. *Gene Ther* **8**, 1601-1608.
- WILLEMSSEN, R.A., RONTELTAP, C., CHAMES, P., DEBETS, R., and BOLHUIS, R.L. (2005b). T cell retargeting with MHC class I-restricted antibodies: the CD28 costimulatory domain enhances antigen-specific cytotoxicity and cytokine production. *J Immunol* **174**, 7853-7858.

- WILLEMSEN, R.A., WEIJTENS, M.E., RONTELTAP, C., ESHHAR, Z., GRATAMA, J.W., CHAMES, P., and BOLHUIS, R.L. (2000). Grafting primary human T lymphocytes with cancer-specific chimeric single chain and two chain TCR. *Gene Ther* **7**, 1369-1377.
- WILLS, M.R., CARMICHAEL, A.J., MYNARD, K., JIN, X., WEEKES, M.P., PLACHTER, B., and SISSONS, J.G. (1996). The human cytotoxic T-lymphocyte (CTL) response to cytomegalovirus is dominated by structural protein pp65: frequency, specificity, and T-cell receptor usage of pp65-specific CTL. *J Virol* **70**, 7569-7579.
- WOGLOM, W. (1929). Immunity to transplantable tumors. *Cancer Rev* **4**, 129 - 214.
- 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.
- WONG, E.T., NGOI, S.M., and LEE, C.G. (2002). Improved co-expression of multiple genes in vectors containing internal ribosome entry sites (IRESes) from human genes. *Gene Ther* **9**, 337-344.
- YANG, L., QIN, X.F., BALTIMORE, D., and VAN PARIJS, L. (2002). Generation of functional antigen-specific T cells in defined genetic backgrounds by retrovirus-mediated expression of TCR cDNAs in hematopoietic precursor cells. *Proc Natl Acad Sci U S A* **99**, 6204-6209.
- YEE, C., THOMPSON, J.A., BYRD, D., RIDDELL, S.R., ROCHE, P., CELIS, E., and GREENBERG, P.D. (2002). Adoptive T cell therapy using antigen-specific CD8+ T cell clones for the treatment of patients with metastatic melanoma: in vivo persistence, migration, and antitumor effect of transferred T cells. *Proc Natl Acad Sci U S A* **99**, 16168-16173.
- YEE, C., THOMPSON, J.A., ROCHE, P., BYRD, D.R., LEE, P.P., PIEPKORN, M., KENYON, K., DAVIS, M.M., RIDDELL, S.R., and GREENBERG, P.D. (2000). Melanocyte destruction after antigen-specific immunotherapy of melanoma: direct evidence of t cell-mediated vitiligo. *J Exp Med* **192**, 1637-1644.
- YU, S.F., VON RUDEN, T., KANTOFF, P.W., GARBER, C., SEIBERG, M., RUTHER, U., ANDERSON, W.F., WAGNER, E.F., and GILBOA, E. (1986). Self-inactivating retroviral vectors designed for transfer of whole genes into mammalian cells. *Proc Natl Acad Sci U S A* **83**, 3194-3198.
- YU, S.S., KIM, J.M., and KIM, S. (2000). High efficiency retroviral vectors that contain no viral coding sequences. *Gene Ther* **7**, 797-804.
- ZAJAC, A.J., MURALI-KRISHNA, K., BLATTMAN, J.N., and AHMED, R. (1998). Therapeutic vaccination against chronic viral infection: the importance of cooperation between CD4+ and CD8+ T cells. *Curr Opin Immunol* **10**, 444-449.
- ZEH, H.J., 3RD, PERRY-LALLEY, D., DUDLEY, M.E., ROSENBERG, S.A., and YANG, J.C. (1999). High avidity CTLs for two self-antigens demonstrate superior in vitro and in vivo antitumor efficacy. *J Immunol* **162**, 989-994.
- ZHAI, Y., YANG, J.C., KAWAKAMI, Y., SPIESS, P., WADSWORTH, S.C., CARDOZA, L.M., COUTURE, L.A., SMITH, A.E., and ROSENBERG, S.A. (1996). Antigen-specific tumor vaccines. Development and characterization of recombinant adenoviruses encoding MART1 or gp100 for cancer therapy. *J Immunol* **156**, 700-710.
- ZHAO, Y., ZHENG, Z., ROBBINS, P.F., KHONG, H.T., ROSENBERG, S.A., and MORGAN, R.A. (2005). Primary Human Lymphocytes Transduced with NY-ESO-1 Antigen-Specific TCR Genes Recognize and Kill Diverse Human Tumor Cell Lines. *J Immunol* **174**, 4415-4423.
- ZHOU, X., JUN DO, Y., THOMAS, A.M., HUANG, X., HUANG, L.Q., MAUTNER, J., MO, W., ROBBINS, P.F., PARDOLL, D.M., and JAFFEE, E.M. (2005). Diverse CD8+ T-cell responses to renal cell carcinoma antigens in patients treated with an autologous granulocyte-macrophage colony-stimulating factor gene-transduced renal tumor cell vaccine. *Cancer Res* **65**, 1079-1088.
- ZUFFEREY, R., DONELLO, J.E., TRONO, D., and HOPE, T.J. (1999). Woodchuck hepatitis virus posttranscriptional regulatory element enhances expression of transgenes delivered by retroviral vectors. *J Virol* **73**, 2886-2892.