

#### 4. Literaturverzeichnis

- Adams R. R., Carmena M. and Earnshaw W. C. (2001) Chromosomal passengers and the (aurora) ABCs of mitosis. *Trends Cell Biol* 11, 49-54.
- Adida C., Crotty P. L., McGrath J., Berrebi D., Diebold J. and Altieri D. C. (1998) Developmentally regulated expression of the novel cancer anti-apoptosis gene survivin in human and mouse differentiation. *Am J Pathol* 152, 43-49.
- Altieri D. C. (2001) Cytokinesis, apoptosis and survivin: three for tango? *Cell Death Differ* 8, 4-5.
- Altieri D. C. (2003a) Survivin, versatile modulation of cell division and apoptosis in cancer. *Oncogene* 22, 8581-8589.
- Altieri D. C. (2003b) Validating survivin as a cancer therapeutic target. *Nat Rev Cancer* 3, 46-54.
- Ambrosini G., Adida C. and Altieri D. C. (1997) A novel anti-apoptosis gene, survivin, expressed in cancer and lymphoma. *Nat Med* 3, 917-921.
- Badran A., Yoshida A., Ishikawa K., Goi T., Yamaguchi A., Ueda T. and Inuzuka M. (2004) Identification of a novel splice variant of the human anti-apoptosis gene survivin. *Biochem Biophys Res Commun* 314, 902-907.
- Bao R., Connolly D. C., Murphy M., Green J., Weinstein J. K., Pisarcik D. A. and Hamilton T. C. (2002) Activation of cancer-specific gene expression by the survivin promoter. *J Natl Cancer Inst* 94, 522-528.
- Bastacky S., Ibrahim S., Wilczynski S. P. and Murphy W. M. (1999) The accuracy of urinary cytology in daily practice. *Cancer* 87, 118-128.
- Brickman J. M. and Burdon T. G. (2002) Pluripotency and tumorigenicity. *Nat Genet* 32, 557-558.
- Caldas H., Honsey L. E. and Altura R. A. (2005a) Survivin 2alpha: a novel Survivin splice variant expressed in human malignancies. *Mol Cancer* 4, 11.
- Caldas H., Jiang Y., Holloway M. P., Fangusaro J., Mahotka C., Conway E. M. and Altura R. A. (2005b) Survivin splice variants regulate the balance between proliferation and cell death. *Oncogene* 24, 1994-2007.
- Carter B. Z., Milella M., Altieri D. C. and Andreeff M. (2001) Cytokine-regulated expression of survivin in myeloid leukemia. *Blood* 97, 2784-2790.

- Chaganti R. S. and Houldsworth J. (2000) Genetics and biology of adult human male germ cell tumors. *Cancer Res* 60, 1475-1482.
- Chatterjee S. J., Datar R., Youssefzadeh D., George B., Goebell P. J., Stein J. P., Young L., Shi S. R., Gee C., Groshen S., Skinner D. G. and Cote R. J. (2004) Combined effects of p53, p21, and pRb expression in the progression of bladder transitional cell carcinoma. *J Clin Oncol* 22, 1007-1013.
- Chen J., Jin S., Tahir S. K., Zhang H., Liu X., Sarthy A. V., McGonigal T. P., Liu Z., Rosenberg S. H. and Ng S. C. (2003) Survivin enhances Aurora-B kinase activity and localizes Aurora-B in human cells. *J Biol Chem* 278, 486-490.
- Chen Y. T., Scanlan M. J., Sahin U., Tureci O., Gure A. O., Tsang S., Williamson B., Stockert E., Pfreundschuh M. and Old L. J. (1997) A testicular antigen aberrantly expressed in human cancers detected by autologous antibody screening. *Proc Natl Acad Sci U S A* 94, 1914-1918.
- Chiou S. K., Jones M. K. and Tarnawski A. S. (2003) Survivin - an anti-apoptosis protein: its biological roles and implications for cancer and beyond. *Med Sci Monit* 9, PI25-29.
- Conway E. M., Pollefeyt S., Steiner-Mosonyi M., Luo W., Devriese A., Lupu F., Bono F., Leducq N., Dol F., Schaeffer P., Collen D. and Herbert J. M. (2002) Deficiency of survivin in transgenic mice exacerbates Fas-induced apoptosis via mitochondrial pathways. *Gastroenterology* 123, 619-631.
- Cory S. and Adams J. M. (2002) The Bcl2 family: regulators of the cellular life-or-death switch. *Nat Rev Cancer* 2, 647-656.
- Cronwright G., Le Blanc K., Gotherstrom C., Darcy P., Ehnman M. and Brodin B. (2005) Cancer/testis antigen expression in human mesenchymal stem cells: down-regulation of SSX impairs cell migration and matrix metalloproteinase 2 expression. *Cancer Res* 65, 2207-2215.
- Deveraux Q. L. and Reed J. C. (1999) IAP family proteins--suppressors of apoptosis. *Genes Dev* 13, 239-252.
- Du C., Fang M., Li Y., Li L. and Wang X. (2000) Smac, a mitochondrial protein that promotes cytochrome c-dependent caspase activation by eliminating IAP inhibition. *Cell* 102, 33-42.
- Endoh T., Tsuji N., Asanuma K., Yagihashi A. and Watanabe N. (2005) Survivin enhances telomerase activity via up-regulation of specificity protein 1- and c-Myc-mediated human telomerase reverse transcriptase gene transcription. *Exp Cell Res* 305, 300-311.

- Fitzpatrick J. M., West A. B., Butler M. R., Lane V. and O'Flynn J. D. (1986) Superficial bladder tumors (stage pTa, grades 1 and 2): the importance of recurrence pattern following initial resection. *J Urol* 135, 920-922.
- Fuessel S., Kueppers B., Ning S., Kotzsch M., Kraemer K., Schmidt U., Meye A. and Wirth M. P. (2004) Systematic in vitro evaluation of survivin directed antisense oligodeoxynucleotides in bladder cancer cells. *J Urol* 171, 2471-2476.
- Fukuda S. and Pelus L. M. (2001) Regulation of the inhibitor-of-apoptosis family member survivin in normal cord blood and bone marrow CD34(+) cells by hematopoietic growth factors: implication of survivin expression in normal hematopoiesis. *Blood* 98, 2091-2100.
- Fukuda S., Foster R. G., Porter S. B. and Pelus L. M. (2002) The antiapoptosis protein survivin is associated with cell cycle entry of normal cord blood CD34(+) cells and modulates cell cycle and proliferation of mouse hematopoietic progenitor cells. *Blood* 100, 2463-2471.
- Furuchi T., Masuko K., Nishimune Y., Obinata M. and Matsui Y. (1996) Inhibition of testicular germ cell apoptosis and differentiation in mice misexpressing Bcl-2 in spermatogonia. *Development* 122, 1703-1709.
- Gazzaniga P., Gradilone A., Giuliani L., Gandini O., Silvestri I., Nofroni I., Sacconi G., Frati L. and Agliano A. M. (2003) Expression and prognostic significance of LIVIN, SURVIVIN and other apoptosis-related genes in the progression of superficial bladder cancer. *Ann Oncol* 14, 85-90.
- Goessl C., Muller M., Straub B. and Miller K. (2002) DNA alterations in body fluids as molecular tumor markers for urological malignancies. *Eur Urol* 41, 668-676.
- Grigor K. M. (1993) A new classification of germ cell tumours of the testis. *Eur Urol* 23, 93-100; discussion 101-103.
- Grossman D., Kim P. J., Blanc-Brude O. P., Brash D. E., Tognin S., Marchisio P. C. and Altieri D. C. (2001) Transgenic expression of survivin in keratinocytes counteracts UVB-induced apoptosis and cooperates with loss of p53. *J Clin Invest* 108, 991-999.
- Hausladen D. A., Wheeler M. A., Altieri D. C., Colberg J. W. and Weiss R. M. (2003) Effect of intravesical treatment of transitional cell carcinoma with bacillus Calmette-Guerin and mitomycin C on urinary survivin levels and outcome. *J Urol* 170, 230-234.
- Helpap B., Schmitz-Drager B. J., Hamilton P. W., Muzzonigro G., Galosi A. B., Kurth K. H., Lubaroff D., Waters D. J. and Droller M. J. (2003) Molecular pathology of non-invasive urothelial carcinomas (part I). *Virchows Arch* 442, 309-316.

- Heney N. M. (1992) Natural history of superficial bladder cancer. Prognostic features and long-term disease course. *Urol Clin North Am* 19, 429-433.
- Heney N. M., Ahmed S., Flanagan M. J., Frable W., Corder M. P., Hafermann M. D. and Hawkins I. R. (1983) Superficial bladder cancer: progression and recurrence. *J Urol* 130, 1083-1086.
- Herr H. W. (1997) Natural history of superficial bladder tumors: 10- to 20-year follow-up of treated patients. *World J Urol* 15, 84-88.
- Hoffman W. H., Biade S., Zilfou J. T., Chen J. and Murphy M. (2002) Transcriptional repression of the anti-apoptotic survivin gene by wild type p53. *J Biol Chem* 277, 3247-3257.
- Holstein A. F., Schulze W. and Davidoff M. (2003) Understanding spermatogenesis is a prerequisite for treatment. *Reprod Biol Endocrinol* 1, 107.
- Huckins C. (1978) The morphology and kinetics of spermatogonial degeneration in normal adult rats: an analysis using a simplified classification of the germinal epithelium. *Anat Rec* 190, 905-926.
- Huynh T., Mollard R. and Trounson A. (2002) Selected genetic factors associated with male infertility. *Hum Reprod Update* 8, 183-198.
- Igney F. H. and Krammer P. H. (2002) Death and anti-death: tumour resistance to apoptosis. *Nat Rev Cancer* 2, 277-288.
- Jaattela M. (1999) Escaping cell death: survival proteins in cancer. *Exp Cell Res* 248, 30-43.
- Johnsen S. G. (1970) Testicular biopsy score count--a method for registration of spermatogenesis in human testes: normal values and results in 335 hypogonadal males. *Hormones* 1, 2-25.
- Kalejs M. and Erenpreisa J. (2005) Cancer/testis antigens and gametogenesis: a review and "brain-storming" session. *Cancer Cell Int* 5, 4.
- Kappler M., Kotzsch M., Bartel F., Fussel S., Lautenschlager C., Schmidt U., Wurl P., Bache M., Schmidt H., Taubert H. and Meye A. (2003) Elevated expression level of survivin protein in soft-tissue sarcomas is a strong independent predictor of survival. *Clin Cancer Res* 9, 1098-1104.
- Kappler M., Kohler T., Kampf C., Diestelkötter P., Wurl P., Schmitz M., Bartel F., Lautenschlager C., Rieber E. P., Schmidt H., Bache M., Taubert H. and Meye A. (2001) Increased survivin transcript levels: an independent negative predictor of survival in soft tissue sarcoma patients. *Int J Cancer* 95, 360-363.

- Karge W. H., 3rd, Schaefer E. J. and Ordovas J. M. (1998) Quantification of mRNA by polymerase chain reaction (PCR) using an internal standard and a nonradioactive detection method. *Methods Mol Biol* 110, 43-61.
- Kato J., Kuwabara Y., Mitani M., Shinoda N., Sato A., Toyama T., Mitsui A., Nishiwaki T., Moriyama S., Kudo J. and Fujii Y. (2001) Expression of survivin in esophageal cancer: correlation with the prognosis and response to chemotherapy. *Int J Cancer* 95, 92-95.
- Kawamura K., Sato N., Fukuda J., Kodama H., Kumagai J., Tanikawa H., Shimizu Y. and Tanaka T. (2003) Survivin acts as an antiapoptotic factor during the development of mouse preimplantation embryos. *Dev Biol* 256, 331-341.
- Kawasaki H., Altieri D. C., Lu C. D., Toyoda M., Tenjo T. and Tanigawa N. (1998) Inhibition of apoptosis by survivin predicts shorter survival rates in colorectal cancer. *Cancer Res* 58, 5071-5074.
- Knudson C. M., Tung K. S., Tourtellotte W. G., Brown G. A. and Korsmeyer S. J. (1995) Bax-deficient mice with lymphoid hyperplasia and male germ cell death. *Science* 270, 96-99.
- Kobayashi K., Hatano M., Otaki M., Ogasawara T. and Tokuhisa T. (1999) Expression of a murine homologue of the inhibitor of apoptosis protein is related to cell proliferation. *Proc Natl Acad Sci U S A* 96, 1457-1462.
- Koslowski M., Bell C., Seitz G., Lehr H. A., Roemer K., Muntefering H., Huber C., Sahin U. and Tureci O. (2004) Frequent nonrandom activation of germ-line genes in human cancer. *Cancer Res* 64, 5988-5993.
- Koss L. G., Deitch D., Ramanathan R. and Sherman A. B. (1985) Diagnostic value of cytology of voided urine. *Acta Cytol* 29, 810-816.
- Krajewska M., Krajewski S., Banares S., Huang X., Turner B., Bubendorf L., Kallioniemi O. P., Shabaik A., Vitiello A., Peehl D., Gao G. J. and Reed J. C. (2003) Elevated expression of inhibitor of apoptosis proteins in prostate cancer. *Clin Cancer Res* 9, 4914-4925.
- Ku J. H., Kwak C., Lee H. S., Park H. K., Lee E. and Lee S. E. (2004) Expression of survivin, a novel inhibitor of apoptosis, in superficial transitional cell carcinoma of the bladder. *J Urol* 171, 631-635.
- Lagace M., Xuan J. Y., Young S. S., McRoberts C., Maier J., Rajcan-Separovic E. and Korneluk R. G. (2001) Genomic organization of the X-linked inhibitor of apoptosis and identification of a novel testis-specific transcript. *Genomics* 77, 181-188.

- Lehner R., Lucia M. S., Jarboe E. A., Orlicky D., Shroyer A. L., McGregor J. A. and Shroyer K. R. (2002) Immunohistochemical localization of the IAP protein survivin in bladder mucosa and transitional cell carcinoma. *Appl Immunohistochem Mol Morphol* 10, 134-138.
- Li F. (2005) Role of survivin and its splice variants in tumorigenesis. *Br J Cancer* 92, 212-216.
- Li F. and Altieri D. C. (1999) Transcriptional analysis of human survivin gene expression. *Biochem J* 344 Pt 2, 305-311.
- Li F., Ambrosini G., Chu E. Y., Plescia J., Tognin S., Marchisio P. C. and Altieri D. C. (1998) Control of apoptosis and mitotic spindle checkpoint by survivin. *Nature* 396, 580-584.
- Lin W. W., Lamb D. J., Wheeler T. M., Lipshultz L. I. and Kim E. D. (1997) In situ end-labeling of human testicular tissue demonstrates increased apoptosis in conditions of abnormal spermatogenesis. *Fertil Steril* 68, 1065-1069.
- Lotan Y. and Roehrborn C. G. (2003) Sensitivity and specificity of commonly available bladder tumor markers versus cytology: results of a comprehensive literature review and meta-analyses. *Urology* 61, 109-118; discussion 118.
- Lowe S. W. and Lin A. W. (2000) Apoptosis in cancer. *Carcinogenesis* 21, 485-495.
- Lu M. L., Wikman F., Orntoft T. F., Charytonowicz E., Rabbani F., Zhang Z., Dalbagni G., Pohar K. S., Yu G. and Cordon-Cardo C. (2002) Impact of alterations affecting the p53 pathway in bladder cancer on clinical outcome, assessed by conventional and array-based methods. *Clin Cancer Res* 8, 171-179.
- Mahotka C., Wenzel M., Springer E., Gabbert H. E. and Gerharz C. D. (1999) Survivin-deltaEx3 and survivin-2B: two novel splice variants of the apoptosis inhibitor survivin with different antiapoptotic properties. *Cancer Res* 59, 6097-6102.
- Mahotka C., Liebmann J., Wenzel M., Suschek C. V., Schmitt M., Gabbert H. E. and Gerharz C. D. (2002a) Differential subcellular localization of functionally divergent survivin splice variants. *Cell Death Differ* 9, 1334-1342.
- Mahotka C., Krieg T., Krieg A., Wenzel M., Suschek C. V., Heydthausen M., Gabbert H. E. and Gerharz C. D. (2002b) Distinct in vivo expression patterns of survivin splice variants in renal cell carcinomas. *Int J Cancer* 100, 30-36.

- Malik S. N. and Murphy W. M. (1999) Monitoring patients for bladder neoplasms: what can be expected of urinary cytology consultations in clinical practice. *Urology* 54, 62-66.
- Marusawa H., Matsuzawa S., Welsh K., Zou H., Armstrong R., Tamm I. and Reed J. C. (2003) HBXIP functions as a cofactor of survivin in apoptosis suppression. *Embo J* 22, 2729-2740.
- Matzuk M. M. and Lamb D. J. (2002) Genetic dissection of mammalian fertility pathways. *Nat Cell Biol* 4 Suppl, s41-49.
- Meng H., Lu C. D., Sun Y. L., Dai D. J., Lee S. W. and Tanigawa N. (2004) Expression level of wild-type survivin in gastric cancer is an independent predictor of survival. *World J Gastroenterol* 10, 3245-3250.
- Mirza A., McGuirk M., Hockenberry T. N., Wu Q., Ashar H., Black S., Wen S. F., Wang L., Kirschmeier P., Bishop W. R., Nielsen L. L., Pickett C. B. and Liu S. (2002) Human survivin is negatively regulated by wild-type p53 and participates in p53-dependent apoptotic pathway. *Oncogene* 21, 2613-2622.
- Monzo M., Rosell R., Felip E., Astudillo J., Sanchez J. J., Maestre J., Martin C., Font A., Barnadas A. and Abad A. (1999) A novel anti-apoptosis gene: Re-expression of survivin messenger RNA as a prognosis marker in non-small-cell lung cancers. *J Clin Oncol* 17, 2100-2104.
- Muller M., Krause H., Heicappell R., Tischendorf J., Shay J. W. and Miller K. (1998) Comparison of human telomerase RNA and telomerase activity in urine for diagnosis of bladder cancer. *Clin Cancer Res* 4, 1949-1954.
- O'Connor D. S., Grossman D., Plescia J., Li F., Zhang H., Villa A., Tognin S., Marchisio P. C. and Altieri D. C. (2000a) Regulation of apoptosis at cell division by p34cdc2 phosphorylation of survivin. *Proc Natl Acad Sci U S A* 97, 13103-13107.
- O'Connor D. S., Schechner J. S., Adida C., Mesri M., Rothermel A. L., Li F., Nath A. K., Pober J. S. and Altieri D. C. (2000b) Control of apoptosis during angiogenesis by survivin expression in endothelial cells. *Am J Pathol* 156, 393-398.
- Old L. J. (2001) Cancer/testis (CT) antigens - a new link between gametogenesis and cancer. *Cancer Immun* 1, 1.
- Oosterhuis J. W. and Looijenga L. H. (2005) Testicular germ-cell tumours in a broader perspective. *Nat Rev Cancer* 5, 210-222.
- Pesce M., Farrace M. G., Piacentini M., Dolci S. and De Felici M. (1993) Stem cell factor and leukemia inhibitory factor promote primordial germ

cell survival by suppressing programmed cell death (apoptosis).  
*Development* 118, 1089-1094.

- Print C. G. and Loveland K. L. (2000) Germ cell suicide: new insights into apoptosis during spermatogenesis. *Bioessays* 22, 423-430.
- Print C. G., Loveland K. L., Gibson L., Meehan T., Stylianou A., Wreford N., de Kretser D., Metcalf D., Kontgen F., Adams J. M. and Cory S. (1998) Apoptosis regulator bcl-w is essential for spermatogenesis but appears otherwise redundant. *Proc Natl Acad Sci U S A* 95, 12424-12431.
- Rajpert-De Meyts E. and Skakkebaek N. E. (1994) Expression of the c-kit protein product in carcinoma-in-situ and invasive testicular germ cell tumours. *Int J Androl* 17, 85-92.
- Reed J. C. (1999) Dysregulation of apoptosis in cancer. *J Clin Oncol* 17, 2941-2953.
- Reya T., Morrison S. J., Clarke M. F. and Weissman I. L. (2001) Stem cells, cancer, and cancer stem cells. *Nature* 414, 105-111.
- Rossi P., Sette C., Dolci S. and Geremia R. (2000) Role of c-kit in mammalian spermatogenesis. *J Endocrinol Invest* 23, 609-615.
- Salz W., Eisenberg D., Plescia J., Garlick D. S., Weiss R. M., Wu X. R., Sun T. T. and Altieri D. C. (2005) A survivin gene signature predicts aggressive tumor behavior. *Cancer Res* 65, 3531-3534.
- Schimmer A. D. (2004) Inhibitor of apoptosis proteins: translating basic knowledge into clinical practice. *Cancer Res* 64, 7183-7190.
- Schmetter B. S., Habicht K. K., Lamm D. L., Morales A., Bander N. H., Grossman H. B., Hanna M. G., Jr., Silberman S. R. and Butman B. T. (1997) A multicenter trial evaluation of the fibrin/fibrinogen degradation products test for detection and monitoring of bladder cancer. *J Urol* 158, 801-805.
- Schmidt S. M., Schag K., Muller M. R., Weck M. M., Appel S., Kanz L., Grunebach F. and Brossart P. (2003) Survivin is a shared tumor-associated antigen expressed in a broad variety of malignancies and recognized by specific cytotoxic T cells. *Blood* 102, 571-576.
- Schrader M., Muller M., Heicappell R., Krause H., Schulze W. and Miller K. (2000) Telomerase activity and expression of telomerase subunits in the testicular tissue of infertile patients. *Fertil Steril* 73, 706-711.
- Schrader M., Muller-Tidow C., Ravnik S., Muller M., Schulze W., Diederichs S., Serve H. and Miller K. (2002) Cyclin A1 and gametogenesis in fertile and infertile patients: a potential new molecular diagnostic marker. *Hum Reprod* 17, 2338-2343.



- Schultz I. J., Kiemeny L. A., Witjes J. A., Schalken J. A., Willems J. L., Swinkels D. W. and de Kok J. B. (2003) Survivin mRNA expression is elevated in malignant urothelial cell carcinomas and predicts time to recurrence. *Anticancer Res* 23, 3327-3331.
- Schulze W., Thoms F. and Knuth U. A. (1999) Testicular sperm extraction: comprehensive analysis with simultaneously performed histology in 1418 biopsies from 766 subfertile men. *Hum Reprod* 14 Suppl 1, 82-96.
- Shariat S. F., Casella R., Khoddami S. M., Hernandez G., Sulser T., Gasser T. C. and Lerner S. P. (2004) Urine detection of survivin is a sensitive marker for the noninvasive diagnosis of bladder cancer. *J Urol* 171, 626-630.
- Shiozaki A., Kataoka K., Fujimura M., Yuki H., Sakai M. and Saito S. (2003) Survivin inhibits apoptosis in cytotrophoblasts. *Placenta* 24, 65-76.
- Simon M. A., Lokeshwar V. B. and Soloway M. S. (2003) Current bladder cancer tests: unnecessary or beneficial? *Crit Rev Oncol Hematol* 47, 91-107.
- Simpson A. J., Caballero O. L., Jungbluth A., Chen Y. T. and Old L. J. (2005) Cancer/testis antigens, gametogenesis and cancer. *Nat Rev Cancer* 5, 615-625.
- Skotheim R. I. and Lothe R. A. (2003) The testicular germ cell tumour genome. *Apmis* 111, 136-150; discussion 150-131.
- Smith S. D., Wheeler M. A., Plescia J., Colberg J. W., Weiss R. M. and Altieri D. C. (2001) Urine detection of survivin and diagnosis of bladder cancer. *Jama* 285, 324-328.
- Swana H. S., Grossman D., Anthony J. N., Weiss R. M. and Altieri D. C. (1999) Tumor content of the antiapoptosis molecule survivin and recurrence of bladder cancer. *N Engl J Med* 341, 452-453.
- Takagi S., Itoh N., Kimura M., Sasao T. and Tsukamoto T. (2001) Spermatogonial proliferation and apoptosis in hypospermatogenesis associated with nonobstructive azoospermia. *Fertil Steril* 76, 901-907.
- Tanaka K., Iwamoto S., Gon G., Nohara T., Iwamoto M. and Tanigawa N. (2000) Expression of survivin and its relationship to loss of apoptosis in breast carcinomas. *Clin Cancer Res* 6, 127-134.
- Tesarik J., Greco E., Cohen-Bacrie P. and Mendoza C. (1998) Germ cell apoptosis in men with complete and incomplete spermiogenesis failure. *Mol Hum Reprod* 4, 757-762.

- Thomas L., Leyh H., Marberger M., Bombardieri E., Bassi P., Pagano F., Pansadoro V., Sternberg C. N., Boccon-Gibod L., Ravery V., Le Guludec D., Meulemans A., Conort P. and Ishak L. (1999) Multicenter trial of the quantitative BTA TRAK assay in the detection of bladder cancer. *Clin Chem* 45, 472-477.
- Thompson C. B. (1995) Apoptosis in the pathogenesis and treatment of disease. *Science* 267, 1456-1462.
- Tran J., Master Z., Yu J. L., Rak J., Dumont D. J. and Kerbel R. S. (2002) A role for survivin in chemoresistance of endothelial cells mediated by VEGF. *Proc Natl Acad Sci U S A* 99, 4349-4354.
- Tureci O., Sahin U., Zwick C., Koslowski M., Seitz G. and Pfreundschuh M. (1998) Identification of a meiosis-specific protein as a member of the class of cancer/testis antigens. *Proc Natl Acad Sci U S A* 95, 5211-5216.
- Tyagi A. K., Agarwal C., Singh R. P., Shroyer K. R., Glode L. M. and Agarwal R. (2003) Silibinin down-regulates survivin protein and mRNA expression and causes caspases activation and apoptosis in human bladder transitional-cell papilloma RT4 cells. *Biochem Biophys Res Commun* 312, 1178-1184.
- Uren A. G., Wong L., Pakusch M., Fowler K. J., Burrows F. J., Vaux D. L. and Choo K. H. (2000) Survivin and the inner centromere protein INCENP show similar cell-cycle localization and gene knockout phenotype. *Curr Biol* 10, 1319-1328.
- van Rhijn B. W., van der Kwast T. H., Vis A. N., Kirkels W. J., Boeve E. R., Jobsis A. C. and Zwarthoff E. C. (2004) FGFR3 and P53 characterize alternative genetic pathways in the pathogenesis of urothelial cell carcinoma. *Cancer Res* 64, 1911-1914.
- Verhagen A. M., Ekert P. G., Pakusch M., Silke J., Connolly L. M., Reid G. E., Moritz R. L., Simpson R. J. and Vaux D. L. (2000) Identification of DIABLO, a mammalian protein that promotes apoptosis by binding to and antagonizing IAP proteins. *Cell* 102, 43-53.
- Wang H., Xi X., Kong X., Huang G. and Ge G. (2004a) The expression and significance of survivin mRNA in urinary bladder carcinomas. *J Cancer Res Clin Oncol* 130, 487-490.
- Wang Y., Suominen J. S., Hakovirta H., Parvinen M., Martinand-Mari C., Toppari J. and Robbins I. (2004b) Survivin expression in rat testis is upregulated by stem-cell factor. *Mol Cell Endocrinol* 218, 165-174.
- Wang Z., Fukuda S. and Pelus L. M. (2004c) Survivin regulates the p53 tumor suppressor gene family. *Oncogene* 23, 8146-8153.

- Weikert S., Christoph F., Schulze W., Schostak M., Hinz S., Miller K. and Schrader M. (2005a) Testicular expression levels of survivin and human telomerase reverse transcriptase (hTERT) are associated with spermatogenic function in infertile patients. *Asian J Androl* in press.
- Weikert S., Krause H., Wolff I., Christoph F., Schrader M., Emrich T., Miller K. and Muller M. (2005b) Quantitative evaluation of telomerase subunits in urine as biomarkers for noninvasive detection of bladder cancer. *Int J Cancer* 117, 274-280.
- Wiener H. G., Vooijs G. P. and van't Hof-Grootenboer B. (1993) Accuracy of urinary cytology in the diagnosis of primary and recurrent bladder cancer. *Acta Cytol* 37, 163-169.
- Wolfes H., Kogawa K., Millette C. F. and Cooper G. M. (1989) Specific expression of nuclear proto-oncogenes before entry into meiotic prophase of spermatogenesis. *Science* 245, 740-743.
- Wurl P., Kappler M., Meye A., Bartel F., Kohler T., Lautenschlager C., Bache M., Schmidt H. and Taubert H. (2002) Co-expression of survivin and TERT and risk of tumour-related death in patients with soft-tissue sarcoma. *Lancet* 359, 943-945.
- Yan W., Suominen J. and Toppari J. (2000) Stem cell factor protects germ cells from apoptosis in vitro. *J Cell Sci* 113 ( Pt 1), 161-168.
- Yan W., Huang J. X., Lax A. S., Pelliniemi L., Salminen E., Poutanen M. and Toppari J. (2003) Overexpression of Bcl-W in the testis disrupts spermatogenesis: revelation of a role of BCL-W in male germ cell cycle control. *Mol Endocrinol* 17, 1868-1879.
- Zaffaroni N., Pennati M. and Daidone M. G. (2005) Survivin as a target for new anticancer interventions. *J Cell Mol Med* 9, 360-372.
- Zaffaroni N., Pennati M., Colella G., Perego P., Supino R., Gatti L., Pilotti S., Zunino F. and Daidone M. G. (2002) Expression of the anti-apoptotic gene survivin correlates with taxol resistance in human ovarian cancer. *Cell Mol Life Sci* 59, 1406-1412.
- Zhao J., Tenev T., Martins L. M., Downward J. and Lemoine N. R. (2000) The ubiquitin-proteasome pathway regulates survivin degradation in a cell cycle-dependent manner. *J Cell Sci* 113 Pt 23, 4363-4371.
- Zhu N., Gu L., Findley H. W., Li F. and Zhou M. (2004) An alternatively spliced survivin variant is positively regulated by p53 and sensitizes leukemia cells to chemotherapy. *Oncogene* 23, 7545-7551.