

## 8 Literaturverzeichnis

Abbott NJ, Bundgaard M, Hughes CCW (1989). Morphology of brain microvessels: a comparative approach. In: Hammersen F, Messmer K.: Cerebral Microcirculation, Prog Appl Microcirc. Vol. 16. Basel: Karger:1-19.

Abbott NJ, Revest PA (1991). Control of brain endothelial permeability. Cerebrovasc Brain Metab Rev 3:39-72.

Adamson RH, Liu B, Fry GN, Rubin LL, Curry FE (1998). Microvascular permeability and number of *tight junctions* are modulated by cAMP. Am J Physiol 274:H1885-1894.

Aguilar-Bryan L, Nichols CG, Wechsler SW, Clement JPt, Boyd AE, 3rd, Gonzalez G, Herrera-Sosa H, Nguy K, Bryan J, Nelson DA (1995). Cloning of the beta cell high-affinity sulfonylurea receptor: a regulator of insulin secretion. Science 268:423-426.

Akiyama H, Kondoh T, Kokunai T, Nagashima T, Saito N, Tamaki N (2000). Blood-brain barrier formation of grafted human umbilical vein endothelial cells in athymic mouse brain. Brain Res 858:172-176.

Alberts MJ, Davis JP, Graffagnino C, McClenny C, DeLong D, Granger C, Herbstreith MH, Boteva K, Marchuk DA, Roses AD (1997). Endoglin gene polymorphism as a risk factor for sporadic intracerebral hemorrhage. Ann Neurol 41:683-686.

Allione A, Wells V, Forni G, Mallucci L, Novelli F (1998). Beta-galactoside-binding protein (beta GBP) alters the cell cycle, up-regulates expression of the alpha- and beta-chains of the IFN-gamma receptor, and triggers IFN-gamma-mediated apoptosis of activated human T lymphocytes. J Immunol 161:2114-2119.

Allt G, Lawrenson JG (2001). Pericytes: cell biology and pathology. Cells Tissues Organs 169:1-11.

Arnheim N, Erlich H (1992). Polymerase chain reaction strategy. Annu Rev Biochem 61:131-156.

Arthur FE, Shivers RR, Bowman PD (1987). Astrocyte-mediated induction of *tight junctions* in brain capillary endothelium: an efficient in vitro model. Brain Res 433:155-159.

Ascherio A, Rimm EB, Hernan MA, Giovannucci EL, Kawachi I, Stampfer MJ, Willett WC (1998). Intake of potassium, magnesium, calcium, and fiber and risk of stroke among US men. Circulation 98:1198-1204.

Aspenström P (1997). A Cdc42 target protein with homology to the nonkinase domain of FER has a potential role in regulating the actin cytoskeleton. Curr Biol 7:479-487.

Aurrand-Lions M, Duncan L, Ballestrem C, Imhof BA (2001). JAM-2, a novel immunoglobulin superfamily molecule, expressed by endothelial and lymphatic cells. J Biol Chem 276:2733-2741.

Babenko AP, Aguilar-Bryan L, Bryan J (1998). A view of sur/KIR6.X, KATP channels. Annu Rev Physiol 60:667-687.

Balabanov R, Dore-Duffy P (1998). Role of the CNS microvascular pericyte in the blood-brain barrier. J Neurosci Res 53:637-644.

Balda MS, Gonzalez-Mariscal L, Macias-Silva M, Torres-Marquez ME, Garcia Sainz JA, Cereijido M (1991). Assembly and sealing of *tight junctions*: possible participation of G-proteins, phospholipase C, protein kinase C and calmodulin. J Membr Biol 122: 193-202.

Balda MS, Anderson JM (1993). Two classes of *tight junctions* are revealed by ZO-1 isoforms. Am J Physiol 264:C918-924.

Balda MS, Gonzalez-Mariscal L, Matter K, Cereijido M, Anderson JM (1993). Assembly of the *tight junction*: the role of diacylglycerol. J Cell Biol 123:293-302.

Barondes SH, Cooper DN, Gitt MA, Leffler H (1994). Galectins. Structure and function of a large family of animal lectins. J Biol Chem 269:20807-20810.

Bazzoni G, Martinez-Estrada OM, Orsenigo F, Cordenonsi M, Citi S, Dejana E (2000). Interaction of junctional adhesion molecule with the *tight junction* components ZO-1, cingulin, and occludin. J Biol Chem 275:20520-20526.

## 8. Literaturverzeichnis

---

- Beck DW, Vinters HV, Hart MN, Cancilla PA (1984). Glial cells influence polarity of the blood-brain barrier. *J Neuropathol Exp Neurol* 43:219-224.
- Bell GI, Kayano T, Buse JB, Burant CF, Takeda J, Lin D, Fukumoto H, Seino S (1990). Molecular biology of mammalian glucose transporters. *Diabetes Care* 13:198-208.
- Bennai F, Morsing P, Paliege A, Ketteler M, Mayer B, Tapp R, Bachmann S (1999). Normalizing the expression of nitric oxide synthase by low-dose AT1 receptor antagonism parallels improved vascular morphology in hypertensive rats. *J Am Soc Nephrol* 10:S104-115.
- Berman DM, Wilkie TM, Gilman AG (1996). GAIP and RGS4 are GTPase-activating proteins for the Gi subfamily of G protein alpha subunits. *Cell* 86:445-452.
- Berman DM, Kozasa T, Gilman AG (1996). The GTPase-activating protein RGS4 stabilizes the transition state for nucleotide hydrolysis. *J Biol Chem* 271:27209-27212.
- Bertossi M, Virgintino D, Errede M, Roncali L (1999). Immunohistochemical and ultrastructural characterization of cortical plate microvasculature in the human fetus telencephalon. *Microvasc Res* 58:49-61.
- Bonev AD, Nelson MT (1996). Vasoconstrictors inhibit ATP-sensitive K<sup>+</sup> channels in arterial smooth muscle through protein kinase C. *J Gen Physiol* 108:315-323.
- Brass LM, Isaacsohn JL, Merikangas KR, Robinette CD (1992). A study of twins and stroke. *Stroke* 23:221-223.
- Brightman MW, Reese TS (1969). Junctions between intimately apposed cell membranes in the vertebrate brain. *J Cell Biol* 40:648-677.
- Brown RD, Whisnant JP, Sicks JD, O'Fallon WM, Wiebers DO (1996). Stroke incidence, prevalence, and survival: secular trends in Rochester, Minnesota, through 1989. *Stroke* 27:373-380.
- Butt AM, Jones HC, Abbott NJ (1990). Electrical resistance across the blood-brain barrier in anaesthetized rats: a developmental study. *J Physiol* 429:47-62.
- Cassatella MA (1995). The production of cytokines by polymorphonuclear neutrophils. *Immunol Today* 16:21-6.
- Castagna M, Takai Y, Kaibuchi K, Sano K, Kikkawa U, Nishizuka Y (1982). Direct activation of calcium-activated, phospholipid-dependent protein kinase by tumor-promoting phorbol esters. *J Biol Chem* 257:7847-7851.
- Cereijido M, Valdes J, Shoshani L, Contreras RG (1998). Role of *tight junctions* in establishing and maintaining cell polarity. *Annu Rev Physiol* 60:161-177.
- Chatterjee TK, Fisher RA (2000). Cytoplasmic, nuclear, and golgi localization of RGS proteins. Evidence for N-terminal and RGS domain sequences as intracellular targeting motifs. *J Biol Chem* 275:24013-24021.
- Chen C, Zheng B, Han J, Lin SC (1997). Characterization of a novel mammalian RGS protein that binds to G $\alpha$  proteins and inhibits pheromone signaling in yeast. *J Biol Chem* 272:8679-8685.
- Chen C, Seow KT, Guo K, Yaw LP, Lin SC (1999). The membrane association domain of RGS16 contains unique amphipathic features that are conserved in RGS4 and RGS5. *J Biol Chem* 274:19799-19806.
- Chinkers M, McKanna JA, Cohen S (1979). Rapid induction of morphological changes in human carcinoma cells A-431 by epidermal growth factors. *J Cell Biol* 83:260-265.
- Chue CH, Yukioka N, Yamada E, Hazama F (1993). The possible role of lysosomal enzymes in the pathogenesis of hypertensive cerebral lesions in spontaneously hypertensive rats. *Acta Neuropathol (Berl)* 85:383-389.
- Chutkow WA, Simon MC, Le Beau MM, Burant CF (1996). Cloning, tissue expression, and chromosomal localization of SUR2, the putative drug-binding subunit of cardiac, skeletal muscle, and vascular KATP channels. *Diabetes* 45:1439-1445.
- Citi S, Sabanay H, Kendrick-Jones J, Geiger B (1989). Cingulin: characterization and localization. *J Cell Sci* 93:107-122.

## 8. Literaturverzeichnis

---

- Citi S, Amorosi A, Franconi F, Giotti A, Zampi G (1991). Cingulin, a specific protein component of *tight junctions*, is expressed in normal and neoplastic human epithelial tissues. *Am J Pathol* 138:781-789.
- Clarke H, Ginanni N, Laughlin KV, Smith JB, Pettit GR, Mullin JM (2000). The transient increase of tight junction permeability induced by bryostatin 1 correlates with rapid downregulation of protein kinase C- $\alpha$ . *Exp Cell Res* 261(1):239-249.
- Clement JPt, Kunjilwar K, Gonzalez G, Schwanstecher M, Panten U, Aguilar-Bryan L, Bryan J (1997). Association and stoichiometry of K(ATP) channel subunits. *Neuron* 18:827-838.
- Coetzee WA, Amarillo Y, Chiu J, Chow A, Lau D, McCormack T, Moreno H, Nadal MS, Ozaita A, Pountney D, Saganich M, Vega-Saenz de Miera E, Rudy B (1999). Molecular diversity of K<sup>+</sup> channels. *Ann N Y Acad Sci* 868:233-285.
- Cooper DN, Barondes SH (1990). Evidence for export of a muscle lectin from cytosol to extracellular matrix and for a novel secretory mechanism. *J Cell Biol* 110:1681-1691.
- Cooper DN, Massa SM, Barondes SH (1991). Endogenous muscle lectin inhibits myoblast adhesion to laminin. *J Cell Biol* 115:1437-1448.
- Cooper DN, Barondes SH (1999). God must love galectins; he made so many of them. *Glycobiology* 9:979-984.
- Cornford EM, Hyman S, Swartz BE (1994). The human brain GLUT1 glucose transporter: ultrastructural localization to the blood-brain barrier endothelia. *J Cereb Blood Flow Metab* 14:106-112.
- Cornford EM, Hyman S, Cornford ME, Landaw EM, Delgado-Escueta AV (1998). Interictal seizure resections show two configurations of endothelial Glut1 glucose transporter in the human blood-brain barrier. *J Cereb Blood Flow Metab* 18:26-42.
- Coso OA, Chiariello M, Yu JC, Teramoto H, Crespo P, Xu N, Miki T, Gutkind JS (1995). The small GTP-binding proteins Rac1 and Cdc42 regulate the activity of the JNK/SAPK signaling pathway. *Cell* 81:1137-1146.
- Crone C, Christensen O (1981). Electrical resistance of a capillary endothelium. *J Gen Physiol* 77:349-371.
- Crone C, Olesen SP (1982). Electrical resistance of brain microvascular endothelium. *Brain Res* 241:49-55.
- Danielson PE, Forss-Petter S, Brow MA, Calavetta L, Douglass J, Milner RJ, Sutcliffe JG (1988). p1B15: a cDNA clone of the rat mRNA encoding cyclophilin. *Dna* 7:261-267.
- Davidson AO, Schork N, Jaques BC, Kelman AW, Sutcliffe RG, Reid JL, Dominiczak AF (1995). Blood pressure in genetically hypertensive rats. Influence of the Y chromosome. *Hypertension* 26:452-459.
- Davson H, Segal MB (1996). Morphological aspects of the barriers. In: *Physiology of the CSF and blood-brain barrier*. CRC Press Boca Raton:93-192.
- De Vries L, Zheng B, Fischer T, Elenko E, Farquhar MG (2000). The regulator of G protein signaling family. *Annu Rev Pharmacol Toxicol* 40:235-271.
- Dejana E, Zanetti A, Del Maschio A (1996). Adhesive proteins at endothelial cell-to-cell junctions and leukocyte extravasation. *Haemostasis* 4:210-219.
- Dejana E, Lampugnani MG, Martinez-Estrada O, Bazzoni G (2000). The molecular organization of endothelial junctions and their functional role in vascular morphogenesis and permeability. *Int J Dev Biol* 44:743-748.
- Del Maschio A, Zanetti A, Corada M, Rival Y, Ruco L, Lampugnani MG, Dejana E (1996). Polymorphonuclear leukocyte adhesion triggers the disorganization of endothelial cell-to-cell adherens junctions. *J Cell Biol* 135:497-510.
- Denker BM, Saha C, Khawaja S, Nigam SK (1996). Involvement of a heterotrimeric G protein  $\alpha$  subunit in *tight junction* biogenesis. *Biol Chem* 271: 25750-25753.
- Denker BM, Nigam SK (1998). Molecular structure and assembly of the *tight junction*. *Am J Physiol* 274:F1-9.

## 8. Literaturverzeichnis

---

- DeRisi JL, Iyer VR, Brown PO (1997). Exploring the metabolic and genetic control of gene expression on a genomic scale. *Science* 278:680-686.
- Diatchenko L, Lau YF, Campbell AP, Chenchik A, Moqadam F, Huang B, Lukyanov S, Lukyanov K, Gurskaya N, Sverdlov ED, Siebert PD (1996). Suppression subtractive hybridization: a method for generating differentially regulated or tissue-specific cDNA probes and libraries. *Proc Natl Acad Sci U S A* 93:6025-6030.
- Diatchenko L, Lukyanov S, Lau YF, Siebert PD (1999). Suppression subtractive hybridization: a versatile method for identifying differentially expressed genes. *Methods Enzymol* 303:349-380.
- Diaz JF, Hachinski VC, Pederson LL, Donald A (1986). Aggregation of multiple risk factors for stroke in siblings of patients with brain infarction and transient ischemic attacks. *Stroke* 17:1239-1242.
- Dietzel C, Kurjan J (1987). Pheromonal regulation and sequence of the *Saccharomyces cerevisiae* SST2 gene: a model for desensitization to pheromone. *Mol Cell Biol* 7:4169-177.
- Donnan GA, Thrift A, You RX, McNeil JJ (1994). Hypertension and stroke. *J Hypertens* 12:865-869.
- Doyle AE, Donnan GA (1990). Stroke as a clinical problem in hypertension. *J Cardiovasc Pharmacol* 15:S34-37.
- Druey KM, Sullivan BM, Brown D, Fischer ER, Watson N, Blumer KJ, Gerfen CR, Scheschonka A, Kehrl JH (1998). Expression of GTPase-deficient G $\alpha$ 2 results in translocation of cytoplasmic RGS4 to the plasma membrane. *J Biol Chem* 273:18405-18410.
- Druey KM, Ugur O, Caron JM, Chen CK, Backlund PS, Jones TL (1999). Amino-terminal cysteine residues of RGS16 are required for palmitoylation and modulation of Gi- and Gq-mediated signaling. *J Biol Chem* 274:18836-18842.
- Easton JD, Hauser SL, Martin JB (1998). Cerebrovascular diseases. In: Fauci AS *et al.* eds. *Harrison's Principles of Internal Medicine*. Vol. 14. New York: McGraw - Hill; 2325-2348.
- Ebisui C, Tsujinaka T, Morimoto T, Fujita J, Ogawa A, Ishidoh K, Kominami E, Tanaka K, Monden M (1995). Changes of proteasomes and cathepsins activities and their expression during differentiation of C2C12 myoblasts. *J Biochem (Tokyo)* 117:1088-1094.
- Edens HA, Parkos CA (2000). Modulation of epithelial and endothelial paracellular permeability by leukocytes. *Adv Drug Deliv Rev* 41:315-28.
- Ehrlich P (1887). *Ther. Monatsh.* 1:88.
- Fanning AS, Mitic LL, Anderson JM (1999). Transmembrane proteins in the *tight junction* barrier. *J Am Soc Nephrol* 10:1337-1345.
- Farrell CL, Pardridge WM (1991). Blood-brain barrier glucose transporter is asymmetrically distributed on brain capillary endothelial luminal and abluminal membranes: an electron microscopic immunogold study. *Proc Natl Acad Sci U S A* 88:5779-5783.
- Ferro T, Neumann P, Gertzberg N, Clements R, Johnson A (2000). Protein kinase C- $\alpha$  mediates endothelial barrier dysfunction induced by TNF- $\alpha$ . *Am J Physiol Lung Cell Mol Physiol* 278:L1107-1117.
- Fischer G, Wittmann-Liebold B, Lang K, Kiefhaber T, Schmid FX (1989). Cyclophilin and peptidyl-prolyl cis-trans isomerase are probably identical proteins. *Nature* 337:476-478.
- Fong CW, Zhang Y, Neo SY, Lin SC (2000). Specific induction of RGS16 (regulator of G-protein signalling 16) mRNA by protein kinase C in CEM leukaemia cells is mediated via tumour necrosis factor alpha in a calcium-sensitive manner. *Biochem J* 3:747-753.
- Fredriksson K, Nordborg C, Kalimo H, Olsson Y, Johansson BB (1988). Cerebral microangiopathy in stroke-prone spontaneously hypertensive rats. An immunohistochemical and ultrastructural study. *Acta Neuropathol (Berl)* 75:241-252.
- Furspan PB, Webb RC (1993). Decreased ATP sensitivity of a K<sup>+</sup> channel and enhanced vascular smooth muscle relaxation in genetically hypertensive rats. *J Hypertens* 11:1067-1072.

## 8. Literaturverzeichnis

---

- Furuse M, Hirase T, Itoh M, Nagafuchi A, Yonemura S, Tsukita S (1993). Occludin: a novel integral membrane protein localizing at *tight junctions*. *J Cell Biol* 123:1777-1788.
- Furuse M, Itoh M, Hirase T, Nagafuchi A, Yonemura S, Tsukita S (1994). Direct association of occludin with ZO-1 and its possible involvement in the localization of occludin at *tight junctions*. *J Cell Biol* 127:1617-1626.
- Furuse M, Fujita K, Hiiiragi T, Fujimoto K, Tsukita S (1998). Claudin-1 and -2: novel integral membrane proteins localizing at *tight junctions* with no sequence similarity to occludin. *J Cell Biol* 141:1539-1550.
- Furuse M, Furuse K, Sasaki H, Tsukita S (2001). Conversion of zonulae occludentes from tight to leaky strand type by introducing claudin-2 into Madin-Darby canine kidney I cells. *J Cell Biol* 153:263-272.
- Gifford AJ (1966). An epidemiological study of cerebrovascular disease. *Am J Public Health Nations Health* 56:452-461.
- Girard JP, Baekkevold ES, Yamanaka T, Haraldsen G, Brandtzaeg P, Amalric F (1999). Heterogeneity of endothelial cells: the specialized phenotype of human high endothelial venules characterized by suppression subtractive hybridization. *Am J Pathol* 155:2043-2055.
- Gold SJ, Ni YG, Dohlman HG, Nestler EJ (1997). Regulators of G-protein signaling (RGS) proteins: region-specific expression of nine subtypes in rat brain. *J Neurosci* 17:8024-8037.
- Goldmann EE (1913). *Abh. Preuss. Akad. Wiss., Phys.-Math. Kl. 1.*
- Graffagnino C, Gasecki AP, Doig GS, Hachinski VC (1994). The importance of family history in cerebrovascular disease. *Stroke* 25:1599-1604.
- Greenberg SM, Rebeck GW, Vonsattel JP, Gomez-Isla T, Hyman BT (1995). Apolipoprotein E epsilon 4 and cerebral hemorrhage associated with amyloid angiopathy. *Ann Neurol* 38:254-259.
- Greenberg SM, Vonsattel JP, Segal AZ, Chiu RI, Clatworthy AE, Liao A, Hyman BT, Rebeck GW (1998). Association of apolipoprotein E epsilon2 and vasculopathy in cerebral amyloid angiopathy. *Neurology* 50:961-5.
- Hademenos GJ, Alberts MJ, Awad I, Mayberg M, Shepard T, Jagoda A, Latchaw RE, Todd HW, Viste K, Starke R, Girgus MS, Marler J, Emr M, Hart N (2001). Advances in the genetics of cerebrovascular disease and stroke. *Neurology* 56:997-1008.
- Hall A (1994). Small GTP-binding proteins and the regulation of the actin cytoskeleton. *Annu Rev Cell Biol* 10:31-54.
- Hansson L, Zanchetti A, Carruthers SG, Dahlof B, Elmfeldt D, Julius S, Menard J, Rahn KH, Wedel H, Westerling S (1998). Effects of intensive blood-pressure lowering and low-dose aspirin in patients with hypertension: principal results of the Hypertension Optimal Treatment (HOT) randomised trial. HOT Study Group. *Lancet* 351:1755-1762.
- Harding MW, Handschumacher RE, Speicher DW (1986). Isolation and amino acid sequence of cyclophilin. *J Biol Chem* 261:8547-8555.
- Harding MW, Handschumacher RE (1988). Cyclophilin, a primary molecular target for cyclosporine. Structural and functional implications. *Transplantation* 46:29S-35S.
- Harik SI, Doull GH, Dick AP (1985). Specific ouabain binding to brain microvessels and choroid plexus. *J Cereb Blood Flow Metab* 5:156-160.
- Haskins J, Gu L, Wittchen ES, Hibbard J, Stevenson BR (1998). ZO-3, a novel member of the MAGUK protein family found at the *tight junction*, interacts with ZO-1 and occludin. *J Cell Biol* 141:199-208.
- Hazama F, Amano S, Haebara H, Okamoto K (1975). Changes in vascular permeability in stroke-prone spontaneously hypertensive rats studied with peroxidase as a tracer. *Acta Pathol Jpn* 25:565-574.
- Hedrick SM, Cohen DI, Nielsen EA, Davis MM (1984). Isolation of cDNA clones encoding T cell-specific membrane-associated proteins. *Nature* 308:149-153.
- Herlitz S, Ruppertsberg JP, Mark MD (1999). New roles for RGS2, 5 and 8 on the ratio-dependent modulation of recombinant GIRK channels expressed in *Xenopus oocytes*. *J Physiol (Lond)* 517:341-352.

## 8. Literaturverzeichnis

---

- Hermann K, McDonald W, Unger T, Lang RE, Ganten D (1984). Angiotensin biosynthesis and concentrations in brain of normotensive and hypertensive rats. *J Physiol (Paris)* 79:471-480.
- Heximer SP, Lim H, Bernard JL, Blumer KJ (2001). Mechanisms governing subcellular localization and function of human RGS2. *J Biol Chem* 276:14195-14203.
- Hill IE, Preston E, Monette R, MacManus JP (1997). A comparison of cathepsin B processing and distribution during neuronal death in rats following global ischemia or decapitation necrosis. *Brain Res* 751:206-216.
- Hirase T, Kawashima S, Wong EY, Ueyama T, Rikitake Y, Tsukita S, Yokoyama M, Staddon JM (2001). Regulation of *tight junction* permeability and occludin phosphorylation by RhoA-p160ROCK-dependent and independent mechanisms. *J Biol Chem* 276:10423-10431.
- Hochstrasser M (1995). Ubiquitin, proteasomes, and the regulation of intracellular protein degradation. *Curr Opin Cell Biol* 7:215-223.
- Hrubec Z, Robinette CD (1984). The study of human twins in medical research. *N Engl J Med* 310:435-441.
- Hubner N, Kreutz R, Takahashi S, Ganten D, Lindpaintner K (1995). Altered angiotensinogen amino acid sequence and plasma angiotensin II levels in genetically hypertensive rats. A study on cause and effect. *Hypertension* 26:279-84.
- Hughes RC (1997). The galectin family of mammalian carbohydrate-binding molecules. *Biochem Soc Trans* 25:1194-1198.
- Inada Y, Wada T, Ojima M, Sanada T, Shibouta Y, Kanagawa R, Ishimura Y, Fujisawa Y, Nishikawa K (1997). Protective effects of candesartan cilexetil (TCV-116) against stroke, kidney dysfunction and cardiac hypertrophy in stroke-prone spontaneously hypertensive rats. *Clin Exp Hypertens* 19:1079-1099.
- Itoh M, Furuse M, Morita K, Kubota K, Saitou M, Tsukita S (1999). Direct binding of three *tight junction*-associated MAGUKs, ZO-1, ZO-2, and ZO-3, with the COOH termini of claudins. *J Cell Biol* 147:1351-1363.
- Jaeger CB, Blight AR (1997). Spinal cord compression injury in guinea pigs: structural changes of endothelium and its perivascular cell associations after blood-brain barrier breakdown and repair. *Exp Neurol* 144:381-399.
- Janigro D, West GA, Gordon EL, Winn HR (1993). ATP-sensitive K<sup>+</sup> channels in rat aorta and brain microvascular endothelial cells. *Am J Physiol* 265:C812-21.
- Janzer RC, Raff MC (1987). Astrocytes induce blood-brain barrier properties in endothelial cells. *Nature* 325:253-257.
- Jeffs B, Clark JS, Anderson NH, Gratton J, Brosnan MJ, Gauguier D, Reid JL, Macrae IM, Dominiczak AF (1997). Sensitivity to cerebral ischaemic insult in a rat model of stroke is determined by a single genetic locus. *Nat Genet* 16:364-367.
- Jesaitis LA, Goodenough DA (1994). Molecular characterization and tissue distribution of ZO-2, a *tight junction* protein homologous to ZO-1 and the Drosophila discs-large tumor suppressor protein. *J Cell Biol* 124:949-961.
- Jin ZG, Melaragno MG, Liao DF, Yan C, Haendeler J, Suh YA, Lambeth JD, Berk BC (2000). Cyclophilin A is a secreted growth factor induced by oxidative stress. *Circ Res* 87:789-796.
- Joberty G, Petersen C, Gao L, Macara IG (2000). The cell-polarity protein Par6 links Par3 and atypical protein kinase C to Cdc42. *Nat Cell Biol* 2:531-539.
- Johansson BB (1999). Hypertension mechanisms causing stroke. *Clin Exp Pharmacol Physiol* 26:563-565.
- Johnatty SE, Dyck JR, Michael LH, Olson EN, Abdellatif M (2000). Identification of genes regulated during mechanical load-induced cardiac hypertrophy. *J Mol Cell Cardiol* 32:805-815.
- Jou TS, Nelson WJ (1998). Effects of regulated expression of mutant RhoA and Rac1 small GTPases on the development of epithelial (MDCK) cell polarity. *J Cell Biol* 142:85-100.

## 8. Literaturverzeichnis

---

- Joutel A, Corpechot C, Ducros A, Vahedi K, Chabriat H, Mouton P, Alamowitch S, Domenga V, Cecillion M, Marechal E, Maci-azek J, Vayssiere C, Cruaud C, Cabanis EA, Ruchoux MM, Weissenbach J, Bach JF, Bousser MG, Tournier-Lasserre E (1996). Notch3 mutations in CADASIL, a hereditary adult-onset condition causing stroke and dementia. *Nature* 383:707-710.
- Katnik C, Adams DJ (1995). An ATP-sensitive potassium conductance in rabbit arterial endothelial cells. *J Physiol* 485:595-606.
- Katnik C, Adams DJ (1997). Characterization of ATP-sensitive potassium channels in freshly dissociated rabbit aortic endothelial cells. *Am J Physiol* 272:H2507-2511.
- Kehrl JH (1998). Heterotrimeric G protein signaling: roles in immune function and fine-tuning by RGS proteins. *Immunity* 8:1-10.
- Kerr S, Brosnan MJ, McIntyre M, Reid JL, Dominiczak AF, Hamilton CA (1999). Superoxide anion production is increased in a model of genetic hypertension: role of the endothelium. *Hypertension* 33:1353-1358.
- Kevil CG, Oshima T, Alexander B, Coe LL, Alexander JS (2000). H<sub>2</sub>O<sub>2</sub>-mediated permeability: role of MAPK and occludin. *Am J Physiol Cell Physiol* 279:C21-30.
- Khaw KT, Barrett-Connor E (1987). Dietary potassium and stroke-associated mortality. A 12-year prospective population study. *N Engl J Med* 316:235-240.
- Kikkawa U, Takai Y, Tanaka Y, Miyake R, Nishizuka Y (1983). Protein kinase C as a possible receptor protein of tumor-promoting phorbol esters. *J Biol Chem* 258:11442-11445.
- Kim E, Niethammer M, Rothschild A, Jan YN, Sheng M (1995). Clustering of Shaker-type K<sup>+</sup> channels by interaction with a family of membrane-associated guanylate kinases. *Nature* 378:85-88.
- Kirsch T, Wellner M, Luft FC, Haller H, Lippoldt A (2001). Altered gene expression in cerebral capillaries of stroke-prone spontaneously hypertensive rats. *Brain Res* 910:106-115.
- Kirsch T, Wellner M, Elger M, Hentschel H, Litteral J, Haller H (2001). Identification of genes expressed in developing nephrons using subtractive cDNA hybridization. *Mount Desert Island Biological Laboratory* 40:102-105.
- Kisselev AF, Goldberg AL (2001). Proteasome inhibitors: from research tools to drug candidates. *Chem Biol* 8:739-758.
- Kistner U, Garner CC, Linial M (1995). Nucleotide binding by the synapse associated protein SAP90. *FEBS Lett* 359:159-163.
- Klungel OH, Stricker BH, Paes AH, Seidell JC, Bakker A, Vok Z, Breteler MM, Anthonius de B (1999). Excess stroke among hypertensive men and women attributable to undertreatment of hypertension. *Stroke* 30:1312-1318.
- Koller KJ, Goeddel DV (1992). Molecular biology of the natriuretic peptides and their receptors. *Circulation* 86:1081-1088.
- Kominami E, Tsukahara T, Bando Y, Katunuma N (1985). Distribution of cathepsins B and H in rat tissues and peripheral blood cells. *J Biochem (Tokyo)* 98:87-93.
- Krieger EM, Yamori Y, Lovenberg WM (1992). Angiotensin converting activity assessed in vivo is increased in hereditary hypertensive rats. *Braz J Med Biol Res* 25:1215-1222.
- Kubo M, Quayle JM, Standen NB (1997). Angiotensin II inhibition of ATP-sensitive K<sup>+</sup> currents in rat arterial smooth muscle cells through protein kinase C. *J Physiol* 503:489-496.
- Lah TT, Babnik J, Schiffmann E, Turk V, Skaleric U (1993). Cysteine proteinases and inhibitors in inflammation: their role in periodontal disease. *J Periodontol* 64:485-491.
- Lahm H, Hoeflich A, Andre S, Sordat B, Kaltner H, Wolf E, Gabius HJ (2000). Gene expression of galectin-9/ecalectin, a potent eosinophil chemoattractant, and/or the insertional isoform in human colorectal carcinoma cell lines and detection of frame-shift mutations for protein sequence truncations in the second functional lectin domain. *Int J Oncol* 17:519-524.

## 8. Literaturverzeichnis

---

- Langheinrich U, Daut J (1997). Hyperpolarization of isolated capillaries from guinea-pig heart induced by K<sup>+</sup> channel openers and glucose deprivation. *J Physiol* 502:397-408.
- Leal-Pinto E, Tao W, Rappaport J, Richardson M, Knorr BA, Abramson RG (1997). Molecular cloning and functional reconstitution of a urate transporter/channel. *J Biol Chem* 272:617-625.
- Lee LG, Connell CR, Bloch W (1993). Allelic discrimination by nick-translation PCR with fluorogenic probes. *Nucleic Acids Res* 21:3761-3766.
- Lee SP, Hwang YS, Kim YJ, Kwon KS, Kim HJ, Kim K, Chae HZ (2001). Cyclophilin a binds to peroxiredoxins and activates its peroxidase activity. *J Biol Chem* 276:29826-29832.
- Li JY, Boado RJ, Pardridge WM (2001). Blood-brain barrier genomics. *J Cereb Blood Flow Metab* 21:61-68.
- Liang P, Pardee AB (1992). Differential display of eukaryotic messenger RNA by means of the polymerase chain reaction. *Science* 257:967-971.
- Liang P, Pardee AB (1995). Recent advances in differential display. *Curr Opin Immunol* 7:274-280.
- Liao D, Myers R, Hunt S, Shahar E, Paton C, Burke G, Province M, Heiss G (1997). Familial history of stroke and stroke risk. The Family Heart Study. *Stroke* 28:1908-12.
- Liebner S, Fischmann A, Rascher G, Duffner F, Grote EH, Kalbacher H, Wolburg H (2000a). Claudin-1 and claudin-5 expression and *tight junction* morphology are altered in blood vessels of human glioblastoma multiforme. *Acta Neuropathol (Berl)* 100:323-331.
- Liebner S, Kniesel U, Kalbacher H, Wolburg H (2000b). Correlation of *tight junction* morphology with the expression of *tight junction* proteins in blood-brain barrier endothelial cells. *Eur J Cell Biol* 79:707-717.
- Lin D, Edwards AS, Fawcett JP, Mbamalu G, Scott JD, Pawson T (2000). A mammalian PAR-3-PAR-6 complex implicated in Cdc42/Rac1 and aPKC signalling and cell polarity. *Nat Cell Biol* 2:540-547.
- Lipkowitz MS, Leal-Pinto E, Rappaport JZ, Najfeld V, Abramson RG (2001). Functional reconstitution, membrane targeting, genomic structure, and chromosomal localization of a human urate transporter. *J Clin Invest* 107:1103-1115.
- Lippoldt A, Jansson A, Kniesel U, Andbjør B, Andersson A, Wolburg H, Fuxe K, Haller H (2000a). Phorbol ester induced changes in tight and adherens junctions in the choroid plexus epithelium and in the ependyma. *Brain Res* 854:197-206.
- Lippoldt A, Liebner S, Kirsch T, Busjahn A, Kniesel U, Haller H, Wolburg H. G-protein signaling is important for maintenance of tight junction structure in blood-brain barrier endothelial cells of the rat (eingereicht).
- Lippoldt A, Kniesel U, Liebner S, Kalbacher H, Kirsch T, Wolburg H, Haller H (2000b). Structural alterations of *tight junctions* are associated with loss of polarity in stroke-prone spontaneously hypertensive rat blood-brain barrier endothelial cells. *Brain Res* 885:251-261.
- Lockhart DJ, Dong H, Byrne MC, Follettie MT, Gallo MV, Chee MS, Mittmann M, Wang C, Kobayashi M, Horton H, Brown EL (1996). Expression monitoring by hybridization to high-density oligonucleotide arrays. *Nat Biotechnol* 14:1675-1680.
- MacMahon S, Peto R, Cutler J, Collins R, Sorlie P, Neaton J, Abbott R, Godwin J, Dyer A, Stamler J (1990). Blood pressure, stroke, and coronary heart disease. Part 1, Prolonged differences in blood pressure: prospective observational studies corrected for the regression dilution bias. *Lancet* 335:765-774.
- Madara JL (1998). Regulation of the movement of solutes across *tight junctions*. *Annu Rev Physiol* 60:143-159.
- Marcus BC, Wyble CW, Hynes KL, Gewertz BL (1996). Cytokine-induced increases in endothelial permeability occur after adhesion molecule expression. *Surgery* 120:411-6; discussion 416-7.
- Marcus BC, Hynes KL, Gewertz BL (1997). Loss of endothelial barrier function requires neutrophil adhesion. *Surgery* 122:420-6; discussion 426-427.
- Marshall J (1971). Familial incidence of cerebrovascular disease. *J Med Genet* 8:84-89.
-

## 8. Literaturverzeichnis

---

- Marshall A, Hodgson J (1998). DNA chips: an array of possibilities. *Nat Biotechnol* 16:27-31.
- Martin-Padura I, Lostaglio S, Schneemann M, Williams L, Romano M, Fruscella P, Panzeri C, Stoppacciaro A, Ruco L, Villa A, Simmons D, Dejana E (1998). Junctional adhesion molecule, a novel member of the immunoglobulin superfamily that distributes at intercellular junctions and modulates monocyte transmigration. *J Cell Biol* 142:117-127.
- Massa SM, Cooper DN, Leffler H, Barondes SH (1993). L-29, an endogenous lectin, binds to glycoconjugate ligands with positive cooperativity. *Biochemistry* 32:260-267.
- Matsumoto R, Matsumoto H, Seki M, Hata M, Asano Y, Kanegasaki S, Stevens RL, Hirashima M (1998). Human ecalectin, a variant of human galectin-9, is a novel eosinophil chemoattractant produced by T lymphocytes. *J Biol Chem* 273:16976-16984.
- McIntyre M, Hamilton CA, Rees DD, Reid JL, Dominiczak AF (1997a). Sex differences in the abundance of endothelial nitric oxide in a model of genetic hypertension. *Hypertension* 30:1517-1524.
- McIntyre M, Dominiczak AF (1997b). Nitric oxide and cardiovascular disease. *Postgrad Med J* 73:630-634.
- McLaughlin SK, McKinnon PJ, Margolskee RF (1992). Gustducin is a taste-cell-specific G protein closely related to the transducins. *Nature* 357:563-569.
- Mebius RE, Bauer J, Twisk AJ, Breve J, Kraal G (1991). The functional activity of high endothelial venules: a role for the subcapsular sinus macrophages in the lymph node. *Immunobiology* 182:277-291.
- Mehta D, Rahman A, Malik AB (2001). Protein kinase C- $\alpha$  signals rho-guanine nucleotide dissociation inhibitor phosphorylation and rho activation and regulates the endothelial cell barrier function. *J Biol Chem* 276:22614-22620.
- Mellstrom K, Heldin CH, Westermark B (1988). Induction of circular membrane ruffling on human fibroblasts by platelet-derived growth factor. *Exp Cell Res* 177:347-359.
- Michalski ML, Weil GJ (1999). Gender-specific gene expression in *Brugia malayi*. *Mol Biochem Parasitol* 104:247-257.
- Mies G, Hermann D, Ganten U, Hossmann KA (1999). Hemodynamics and metabolism in stroke-prone spontaneously hypertensive rats before manifestation of brain infarcts. *J Cereb Blood Flow Metab* 19:1238-1246.
- Mikkelsen T, Yan PS, Ho KL, Sameni M, Sloane BF, Rosenblum ML (1995). Immunolocalization of cathepsin B in human glioma: implications for tumor invasion and angiogenesis. *J Neurosurg* 83:285-290.
- Minden A, Lin A, Claret FX, Abo A, Karin M (1995). Selective activation of the JNK signaling cascade and c-Jun transcriptional activity by the small GTPases Rac and Cdc42Hs. *Cell* 81:1147-1157.
- Mitic LL, Van Itallie CM, Anderson JM (2000). Molecular physiology and pathophysiology of *tight junctions* I. *Tight junction* structure and function: lessons from mutant animals and proteins. *Am J Physiol Gastrointest Liver Physiol* 279:G250-254.
- Mohr JP (1992). Sickle cell anemia, stroke, and transcranial Doppler studies. *N Engl J Med* 326:637-639.
- Mollgard K, Saunders NR (1986). The development of the human blood-brain and blood-CSF barriers. *Neuropathol Appl Neurobiol* 12:337-358.
- Morita K, Sasaki H, Furuse M, Tsukita S (1999). Endothelial claudin: claudin-5/TMVCF constitutes *tight junction* strands in endothelial cells. *J Cell Biol* 147:185-194.
- Morris AJ, Malbon CC (1999). Physiological regulation of G protein-linked signaling. *Physiol Rev* 79:1373-1430.
- Mueckler M, Caruso C, Baldwin SA, Panico M, Blench I, Morris HR, Allard WJ, Lienhard GE, Lodish HF (1985). Sequence and structure of a human glucose transporter. *Science* 229:941-945.
- Mullin JM, Laughlin KV, Ginanni N, Marano CW, Clarke HM, Peralta Soler A (2000). Increased tight junction permeability can result from protein kinase C activation/translocation and act as a tumor promotional event in epithelial cancers. *Ann N Y Acad Sci* 915:231-236.
-

## 8. Literaturverzeichnis

---

- Nabeshima S, Reese TS, Landis DM, Brightman MW (1975). Junctions in the meninges and marginal glia. *J Comp Neurol* 164:127-169.
- Nag S (1984). Cerebral changes in chronic hypertension: combined permeability and immunohistochemical studies. *Acta Neuropathol (Berl)* 62:178-184.
- Nagaoka A, Iwatsuka H, Suzuoki Z, Okamoto K (1976). Genetic predisposition to stroke in spontaneously hypertensive rats. *Am J Physiol* 230:1354-1359.
- Nagaoka A, Shino A, Shibota M, Fujita T, Iwatsuka H (1979). Pathogenesis of cerebral stroke in stroke-prone spontaneously hypertensive rats; importance of renal perfusion pressure [proceedings]. *Jpn Heart J* 20:712.
- Neer EJ, Clapham DE (1988). Roles of G protein subunits in transmembrane signalling. *Nature* 333:129-134.
- Newton AC (1995). Protein kinase C: structure, function, and regulation. *J Biol Chem* 270:28495-28498.
- Newton AC, Johnson JE (1998). Protein kinase C: a paradigm for regulation of protein function by two membrane-targeting modules. *Biochim Biophys Acta* 1376:155-172.
- Nilius B, Szucs G, Heinke S, Voets T, Droogmans G (1997). Multiple types of chloride channels in bovine pulmonary artery endothelial cells. *J Vasc Res* 34:220-228.
- Nishikawa K, Toker A, Johannes FJ, Songyang Z, Cantley LC (1997). Determination of the specific substrate sequence motifs of protein kinase C isozymes. *J Biol Chem* 272:952-960.
- Nishikawa K (1998). Angiotensin AT1 receptor antagonism and protection against cardiovascular end-organ damage. *J Hum Hypertens* 12:301-309.
- Novelli F, Allione A, Wells V, Forni G, Mallucci L (1999). Negative cell cycle control of human T cells by beta-galactoside binding protein (beta GBP): induction of programmed cell death in leukaemic cells. *J Cell Physiol* 178:102-108.
- Nusrat A, Giry M, Turner JR, Colgan SP, Parkos CA, Carnes D, Lemichez E, Boquet P, Madara JL (1995). Rho protein regulates *tight junctions* and perijunctional actin organization in polarized epithelia. *Proc Natl Acad Sci U S A* 92:10629-10633.
- Ogata J, Fujishima M, Tamaki K, Nakatomi Y, Ishitsuka T, Omae T (1980). Stroke-prone spontaneously hypertensive rats as an experimental model of malignant hypertension. I. A light- and electron-microscopic study of the brain. *Acta Neuropathol (Berl)* 51:179-184.
- Ogata J, Fujishima M, Tamaki K, Nakatomi Y, Ishitsuka T, Omae T (1982). Stroke-prone spontaneously hypertensive rats as an experimental model of malignant hypertension. A pathological study. *Virchows Arch A Pathol Anat Histol* 394:185-194.
- Okamoto K, Yamori Y, Nagaoka A (1974). Establishment of the Stroke-prone Spontaneously Hypertensive Rats (SHR). *Circ Res* 34/35:1143-1153.
- Olesen C, Hansen C, Bendtsen E, Byskov AG, Schwinger E, Lopez-Pajares I, Jensen PK, Kristoffersson U, Schubert R, Van Assche E, Wahlstroem J, Lespinasse J, Tommerup N (2001). Identification of human candidate genes for male infertility by digital differential display. *Mol Hum Reprod* 7:11-20.
- Olson MF, Ashworth A, Hall A (1995). An essential role for Rho, Rac, and Cdc42 GTPases in cell cycle progression through G1. *Science* 269:1270-1272.
- Palmeri D, van Zante A, Huang CC, Hemmerich S, Rosen SD (2000). Vascular endothelial junction-associated molecule, a novel member of the immunoglobulin superfamily, is localized to intercellular boundaries of endothelial cells. *J Biol Chem* 275:19139-19145.
- Pardridge WM (1993). Transport of insulin-related peptides and glucose across the blood-brain barrier. *Ann N Y Acad Sci* 692:126-37.
- Perillo NL, Pace KE, Seilhamer JJ, Baum LG (1995). Apoptosis of T cells mediated by galectin-1. *Nature* 378:736-739.
- Perry HM, Roccella EJ (1998). Conference report on stroke mortality in the southeastern United States. *Hypertension* 31:1206-1215.

## 8. Literaturverzeichnis

---

- Pikielny CW, Hasan G, Rouyer F, Rosbash M (1994). Members of a family of *Drosophila* putative odorant-binding proteins are expressed in different subsets of olfactory hairs. *Neuron* 12:35-49.
- Pope B, Kent HM (1996). High efficiency 5 min transformation of *Escherichia coli*. *Nucleic Acids Res* 24:536-537.
- Puche AC, Poirier F, Hair M, Bartlett PF, Key B (1996). Role of galectin-1 in the developing mouse olfactory system. *Dev Biol* 179:274-287.
- Qiu RG, Abo A, Steven Martin G (2000). A human homolog of the *C. elegans* polarity determinant Par-6 links Rac and Cdc42 to PKC $\zeta$  signaling and cell transformation. *Curr Biol* 10:697-707.
- Quayle JM, Nelson MT, Standen NB (1997). ATP-sensitive and inwardly rectifying potassium channels in smooth muscle. *Physiol Rev* 77:1165-1232.
- Rastenyte D, Tuomilehto J, Sarti C (1998). Genetics of stroke--a review. *J Neurol Sci* 153:132-145.
- Reese TS, Karnovsky MJ (1967). Fine structural localization of a blood-brain barrier to exogenous peroxidase. *J Cell Biol* 34:207-217.
- Risau W, Engelhardt B, Wekerle H (1990). Immune function of the blood-brain barrier: incomplete presentation of protein (auto-)antigens by rat brain microvascular endothelium in vitro. *J Cell Biol* 110:1757-1766.
- Rubattu S, Volpe M, Kreutz R, Ganten U, Ganten D, Lindpaintner K (1996). Chromosomal mapping of quantitative trait loci contributing to stroke in a rat model of complex human disease [see comments]. *Nat Genet* 13:429-434.
- Rubattu S, Lee-Kirsch MA, DePaolis P, Gilberti R, Gigante B, Lombardi A, Volpe M, Lindpaintner K (1999a). Altered structure, regulation, and function of the gene encoding the atrial natriuretic peptide in the stroke-prone spontaneously hypertensive rat. *Circ Res* 85:900-905.
- Rubattu S, Ridker P, Stampfer MJ, Volpe M, Hennekens CH, Lindpaintner K (1999b). The gene encoding atrial natriuretic peptide and the risk of human stroke. *Circulation* 100:1722-1726.
- Rubin LL, Staddon JM (1999). The cell biology of the blood-brain barrier. *Annu Rev Neurosci* 22:11-28.
- Sacco RL, Benjamin EJ, Broderick JP, Dyken M, Easton JD, Feinberg WM, Goldstein LB, Gorelick PB, Howard G, Kittner SJ, Manolio TA, Whisnant JP, Wolf PA (1997). American Heart Association Prevention Conference. IV. Prevention and Rehabilitation of Stroke. Risk factors. *Stroke* 28:1507-1517.
- Saha C, Nigam SK, Denker BM (1998). Involvement of Galphai2 in the maintenance and biogenesis of epithelial cell tight junctions. *J Biol Chem* 273: 21629-21633.
- Saha C, Nigam SK, Denker BM (2001). Expanding role of G proteins in tight junction regulation: Galphai(s) stimulates TJ assembly. *Biochem Biophys Res Commun* 285: 250-256.
- Saito N, Mukaino S, Ogino K, Kawai C (1976). Vascular lesions in hypertensive rats under salt loading: kidney renin and lysosomal enzymes. *Clin Sci Mol Med Suppl* 3:49s-51s.
- Saitou M, Furuse M, Sasaki H, Schulzke JD, Fromm M, Takano H, Noda T, Tsukita S (2000). Complex phenotype of mice lacking occludin, a component of *tight junction* strands. *Mol Biol Cell* 11:4131-4142.
- Sakura H, Ammala C, Smith PA, Gribble FM, Ashcroft FM (1995). Cloning and functional expression of the cDNA encoding a novel ATP-sensitive potassium channel subunit expressed in pancreatic beta-cells, brain, heart and skeletal muscle. *FEBS Lett* 377:338-344.
- Sato S, Burdett I, Hughes RC (1993). Secretion of the baby hamster kidney 30-kDa galactose-binding lectin from polarized and nonpolarized cells: a pathway independent of the endoplasmic reticulum-Golgi complex. *Exp Cell Res* 207:8-18.
- Sattler R, Tymianski M (2000). Molecular mechanisms of calcium-dependent excitotoxicity. *J Mol Med* 78:3-13.
- Schena M, Shalon D, Davis RW, Brown PO (1995). Quantitative monitoring of gene expression patterns with a complementary DNA microarray. *Science* 270:467-470.

## 8. Literaturverzeichnis

---

- Schmelz M, Moll R, Kuhn C, Franke WW (1994). Complexus adhaerentes, a new group of desmoplakin-containing junctions in endothelial cells: II. Different types of lymphatic vessels. *Differentiation* 57:97-117.
- Schnitzler MM, Derst C, Daut J, Preisig-Muller R (2000). ATP-sensitive potassium channels in capillaries isolated from guinea-pig heart. *J Physiol* 2:307-317.
- Shalon D, Smith SJ, Brown PO (1996). A DNA microarray system for analyzing complex DNA samples using two-color fluorescent probe hybridization. *Genome Res* 6:639-645.
- Shuman S (1991). Recombination mediated by vaccinia virus DNA topoisomerase I in *Escherichia coli* is sequence specific. *Proc Natl Acad Sci U S A* 88:10104-10108.
- Shuman S (1994). Novel approach to molecular cloning and polynucleotide synthesis using vaccinia DNA topoisomerase. *J Biol Chem* 269:32678-32684.
- Songyang Z, Fanning AS, Fu C, Xu J, Marfatia SM, Chishti AH, Crompton A, Chan AC, Anderson JM, Cantley LC (1997). Recognition of unique carboxyl-terminal motifs by distinct PDZ domains. *Science* 275:73-77.
- StBA, Statistisches Bundesamt (2001). Gesundheitswesen: Diagnosedaten der Krankenhauspatienten 1999. Statistisches Bundesamt, Wiesbaden. Zweigstelle Bonn, Gruppe VIII A - Gesundheit/Gesundheitsberichterstattung.
- Stevenson BR, Siliciano JD, Mooseker MS, Goodenough DA (1986). Identification of ZO-1: a high molecular weight polypeptide associated with the *tight junction* (zonula occludens) in a variety of epithelia. *J Cell Biol* 103:755-66.
- Stevenson BR, Keon BH (1998). The *tight junction*: morphology to molecules. *Annu Rev Cell Dev Biol* 14:89-109.
- Suenobu N, Shichiri M, Iwashina M, Marumo F, Hirata Y (1999). Natriuretic peptides and nitric oxide induce endothelial apoptosis via a cGMP-dependent mechanism. *Arterioscler Thromb Vasc Biol* 19:140-146.
- Tagami M, Nara Y, Kubota A, Fujino H, Yamori Y (1990). Ultrastructural changes in cerebral pericytes and astrocytes of stroke-prone spontaneously hypertensive rats. *Stroke* 21:1064-1071.
- Tagami M, Kubota A, Nara Y, Yamori Y (1991). Detailed disease processes of cerebral pericytes and astrocytes in stroke-prone SHR. *Clin Exp Hypertens A* 13:1069-10675.
- Takaba H, Nagao T, Ibayashi S, Kitazono T, Fujii K, Fujishima M (1996). Altered cerebrovascular response to a potassium channel opener in hypertensive rats. *Hypertension* 28:143-146.
- Takemori K, Ito H, Suzuki T (2000). Effects of the AT1 receptor antagonist on adhesion molecule expression in leukocytes and brain microvessels of stroke-prone spontaneously hypertensive rats. *Am J Hypertens* 13:1233-1241.
- Tanaka K, Suzuki T, Chiba T (1998). The ligation systems for ubiquitin and ubiquitin-like proteins. *Mol Cells* 8:503-512.
- Tanaka A, Leung PS, Kenny TP, Au-Young J, Prindiville T, Coppel RL, Ansari AA, Gershwin ME (2001). Genomic analysis of differentially expressed genes in liver and biliary epithelial cells of patients with primary biliary cirrhosis. *J Autoimmun* 17:89-98.
- Terent A (1988). Increasing incidence of stroke among Swedish women. *Stroke* 19:598-603.
- Tobian L, Lange JM, Ulm KM, Wold LJ, Iwai J (1984). Potassium prevents death from strokes in hypertensive rats without lowering blood pressure. *J Hypertens Suppl* 2:S363-366.
- Tontsch U, Bauer HC (1991). Glial cells and neurons induce blood-brain barrier related enzymes in cultured cerebral endothelial cells. *Brain Res* 539:247-53.
- Tournier-Lasserre E, Joutel A, Melki J, Weisenbach J, Lathrop GM, Chabriat H, Mas JL, Cabanis EA, Baudrimont M, Maciazek J, et al (1993). Cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy maps to chromosome 19q12. *Nat Genet* 3:256-259.
- Tsukita S, Furuse M (2000). Pores in the wall: claudins constitute *tight junction* strands containing aqueous pores. *J Cell Biol* 149:13-16.
- Tsukita S, Furuse M, Itoh M (2001). Multifunctional strands in *tight junctions*. *Nat Rev Mol Cell Biol* 2:285-293.

## 8. Literaturverzeichnis

---

- van den Brule FA, Buicu C, Baldet M, Sobel ME, Cooper DN, Marschal P, Castronovo V (1995). Galectin-1 modulates human melanoma cell adhesion to laminin. *Biochem Biophys Res Commun* 209:760-767.
- van Deurs B, Koehler JK (1979). *Tight junctions* in the choroid plexus epithelium. A freeze-fracture study including complementary replicas. *J Cell Biol* 80:662-673.
- van Meer G, Simons K (1986). The function of *tight junctions* in maintaining differences in lipid composition between the apical and the basolateral cell surface domains of MDCK cells. *Embo J* 5:1455-1464.
- Vane JR, Botting RM (1992). Secretory functions of the vascular endothelium. *J Physiol Pharmacol* 43:195-207.
- Volpe M, Camargo MJ, Mueller FB, Campbell WG, Jr (1990)., Sealey JE, Pecker MS, Sosa RE, Laragh JH. Relation of plasma renin to end organ damage and to protection of K<sup>+</sup> feeding in stroke-prone hypertensive rats. *Hypertension* 15:318-326.
- Volpe M, S R (1994). Pathophysiological aspects of genetically determined hypertension in rats with special emphasis on stroke-prone spontaneously hypertensive rats. In: Ganten D, De Jong W, eds. *Handbook of hypertension. Experimental and genetic models of hypertension*. Amsterdam: Elsevier Science, 1994:365-394.
- Volpe M, Iaccarino G, Vecchione C, Rizzoni D, Russo R, Rubattu S, Condorelli G, Ganten U, Ganten D, Trimarco B, Lindpaintner K (1996). Association and cosegregation of stroke with impaired endothelium-dependent vasorelaxation in stroke prone, spontaneously hypertensive rats. *J Clin Invest* 98:256-261.
- Wada J, Kanwar YS (1997). Identification and characterization of galectin-9, a novel beta-galactoside-binding mammalian lectin. *J Biol Chem* 272:6078-6086.
- Warlow CP (1998). Epidemiology of stroke. *Lancet* 352:S111-4.
- Wegener J, Hakvoort A, Galla HJ (2000). Barrier function of porcine choroid plexus epithelial cells is modulated by cAMP-dependent pathways in vitro. *Brain Res* 853:115-124.
- Weibel ER (1974). On pericytes, particularly their existence on lung capillaries. *Microvasc Res* 8:218-235.
- Welin L, Svardsudd K, Wilhelmsen L, Larsson B, Tibblin G (1987). Analysis of risk factors for stroke in a cohort of men born in 1913. *N Engl J Med* 317:521-526.
- Willems AR, Lanker S, Patton EE, Craig KL, Nason TF, Mathias N, Kobayashi R, Wittenberg C, Tyers M (1996). Cdc53 targets phosphorylated G1 cyclins for degradation by the ubiquitin proteolytic pathway. *Cell* 86:453-463.
- Wolburg H, Neuhaus J, Kniesel U, Krauss B, Schmid EM, Ocalan M, Farrell C, Risau W (1994). Modulation of *tight junction* structure in blood-brain barrier endothelial cells. Effects of tissue culture, second messengers and cocultured astrocytes. *J Cell Sci* 107:1347-1357.
- Wolf PA (1998). Prevention of stroke. *Lancet* 352:S1115-18.
- Wolff B, Sanglier JJ, Wang Y (1997). Leptomycin B is an inhibitor of nuclear export of nucleocytoplasmic translocation of the human immunodeficiency virus type 1 (HIV-1) Rev protein and Rev-dependent mRNA. *Chem Biol* 4 :139-147.
- Yamada E, Chue CH, Yukioka N, Hazama F (1994). Causative role of lysosomal enzymes in the pathogenesis of cerebral lesions due to brain edema under chronic hypertension. *Acta Neurochir Suppl* 60:83-85.
- Yamagata K, Tagami M, Nara Y, Fujino H, Kubota A, Numano F, Kato T, Yamori Y (1987). Faulty induction of blood-brain barrier functions by astrocytes isolated from stroke-prone spontaneously hypertensive rats. *Clin Exp Pharmacol Physiol* 24:686-91.
- Yamori Y, Horie R, Tanase H, Fujiwara K, Nara Y, Lovenberg W (1984). Possible role of nutritional factors in the incidence of cerebral lesions in stroke-prone spontaneously hypertensive rats. *Hypertension* 6:49-53.
- Yamori Y (1989). Predictive and preventive pathology of cardiovascular diseases. *Acta Pathol Jpn* 39:683-705.

## 8. Literaturverzeichnis

---

Ye Z, Connor JR (2000). Identification of iron responsive genes by screening cDNA libraries from suppression subtractive hybridization with antisense probes from three iron conditions. *Nucleic Acids Res* 28:1802-1807.

Yeung YG, Soldera S, Stanley ER (1998). A novel macrophage actin-associated protein (MAYP) is tyrosine-phosphorylated following colony stimulating factor-1 stimulation. *J Biol Chem* 273:30638-30642.

Yokoshiki H, Sunagawa M, Seki T, Sperelakis N (1998). ATP-sensitive K<sup>+</sup> channels in pancreatic, cardiac, and vascular smooth muscle cells. *Am J Physiol* 274:C25-37.

Zanders ED, Goulden MG, Kennedy TC, Kempell KE (2000). Analysis of immune system gene expression in small rheumatoid arthritis biopsies using a combination of subtractive hybridization and high-density cDNA arrays. *J Immunol Methods* 233:131-140.

Zhang JH, Barr VA, Mo Y, Rojkova AM, Liu S, Simonds WF (2001). Nuclear localization of G protein beta 5 and regulator of G protein signaling 7 in neurons and brain. *J Biol Chem* 276:10284-10289.

Zheng B, De Vries L, Gist Farquhar M (1999). Divergence of RGS proteins: evidence for the existence of six mammalian RGS subfamilies. *Trends Biochem Sci* 24:411-414.

Zhong Y, Enomoto K, Isomura H, Sawada N, Minase T, Oyamada M, Konishi Y, Mori M (1994). Localization of the 7H6 antigen at *tight junctions* correlates with the paracellular barrier function of MDCK cells. *Exp Cell Res* 214:614-620.

Zhou J, Moroi K, Nishiyama M, Usui H, Seki N, Ishida J, Fukamizu A, Kimura S (2001). Characterization of RGS5 in regulation of G protein-coupled receptor signaling. *Life Sci* 68:1457-1469.