

## 9 Literatur

Agre P, Preston GM, Smith BL, Jung JS, Raina S, Moon C, Guggino WB, Nielsen S. Aquaporin CHIP: the archetypal molecular water channel. *Am J Physiol.* 1993, 265: F463-476.

Alto N, Carlisle Michel JJ, Dodge KL, Langeberg LK, Scott JD. Intracellular targeting of protein kinases and phosphatases. *Diabetes* 2002, 51: S385-388.

Alto NM, Soderling SH, Hoshi N, Langeberg LK, Fayos R, Jennings PA, Scott JD. Bioinformatic design of A-kinase anchoring protein-in silico: a potent and selective peptide antagonist of type II protein kinase A anchoring. *Proc Natl Acad Sci U S A* 2003, 100: 4445-4450.

Amieux P S, Cummings DE, Motamed K, Brandon EP, Wailes LA, Le K, Idzerda RL, McKnight GS. Compensatory regulation of RI $\alpha$  protein levels in protein kinase A mutant mice. *J Biol Chem* 1997, 272: 3993-3998.

Angelo, R., Rubin, C.S. Molecular characterization of an anchor protein (AKAP<sub>CE</sub>) that binds the RI subunit (R<sub>CE</sub>) of type I protein kinase A from *Caenorhabditis elegans*. *J Biol Chem* 1998, 273: 14633-14643.

Banky P, Huang LJ, Taylor SS. Dimerization/docking domain of the type Ialpha regulatory subunit of cAMP-dependent protein kinase. Requirements for dimerization and docking are distinct but overlapping. *J Biol Chem* 1998, 273: 35048-35055.

Banky, P., Newlon, M.G., Roy, M., Garrod, S., Jennings, P.A. Isoform-specific differences between the type I $\alpha$  and II $\alpha$  PKA anchoring domains revealed by solution NMR. *J Biol Chem* 2000, 275: 35146-35152.

Beavo JA, Conti M, Heaslip RJ. Multiple cyclic nucleotide phosphodiesterases. Mol Pharmacol 1994, 46: 399-405.

Beebe, S.J., Øyen, O., Sandberg, M., Frøysa, A., Hansson, V., JahnSEN, T. Molecular cloning of a tissue-specific protein kinase (C $\gamma$ ) from human testis, representing a third isoform for the catalytic subunit of cAMP-dependent protein kinase. Mol Endocrinol 1990, 4: 465-475.

Beitz E, Schultz JE. The mammalian aquaporin water channel family: A promising new drug target. Curr Med Chem 1999; 6: 457-467.

Birnbaumer M, Seibold A, Gilbert S, Ishido M, Barberis C, Antaramian A, Brabet P, Rosenthal W. Molecular cloning of the receptor for human antidiuretic hormone. Nature 1992, 357: 333-335.

Brown RL, August SL, Williams CJ, Moss SB. AKAP7gamma is a nuclear RI-binding AKAP. Biochem Biophys Res Commun 2003, 306: 394-401.

Burns-Hamuro LL, Ma Y, Kammerer S, Reineke U, Self C, Cook C, Olson GL, Cantor CR, Braun A, Taylor SS. Designing isoform-specific peptide disruptors of protein kinase A localization. Proc Natl Acad Sci U S A 2003, 100: 4072-4077.

Cantrell AR, Tibbs VC, Yu FH, Murphy BJ, Sharp EM, Qu Y, Catterall WA, Scheuer T. Molecular mechanism of convergent regulation of brain Na(+) channels by protein kinase C and protein kinase A anchored to AKAP-15. Mol Cell Neurosci 2002, 21: 63-80.

Carr DW, Hausken ZE, Fraser ID, Stofko-Hahn RE, Scott JD. Association of the type II cAMP-dependent protein kinase with a human thyroid RII-anchoring protein. Cloning and characterization of the RII-binding domain. J Biol Chem 1992a, 267: 13376-13382.

Carr, D.W., Stofko-Hahn, R.E., Fraser, I.D.C., Cone, R.D., Scott, J.D. Localization of the cAMP-dependent protein kinase to the postsynaptic densities by A-kinase anchoring proteins: characterization of AKAP79. *J Biol Chem* 1992b, 267: 16816-16823.

Carr DW, Scott JD. Blotting and band-shifting: techniques for studying protein-protein interactions. *Trends Biochem Sci* 1992, 17: 246-249.

Chen, Q., Lin, R.Y., Rubin, C.S. Organelle-specific targeting of protein kinase A II (PKAII). *J Biol Chem* 1997, 272: 15247-15257.

Cheng A, van Hoek AN, Yeager M, Verkman AS, Mitra AK. Three-dimensional organization of a human water channel. *Nature* 1997, 387: 627-630.

Coghlan VM, Perrino BA, Howard M, Langeberg LK, Hicks JB, Gallatin WM, Scott JD. Association of protein kinase A and protein phosphatase 2B with a common anchoring protein. *Science* 1995, 267(5194): 108-111.

Colledge M, Dean RA, Scott GK, Langeberg LK, Huganir RL, Scott JD. Targeting of PKA to glutamate receptors through a MAGUK-AKAP complex. *Neuron* 2000, 27(1): 107-119.

Colledge M, Scott JD. AKAPs: from structure to function. *Trends Cell Biol* 1999, 9: 216-221.

Corbin JD, Keely SL, Park CR. The distribution and dissociation of cyclic adenosine 3':5'-monophosphate-dependent protein kinases in adipose, cardiac, and other tissues. *J Biol Chem* 1975, 250(1): 218-225

Daaka Y, Luttrell LM, Lefkowitz RJ. Switching of the coupling of the beta2-adrenergic receptor to different G proteins by protein kinase A. *Nature* 1997, 390: 88-91

Deen PM, Verdijk MA, Knoers NV, Wieringa B, Monnens LA, van Os CH, van Oost BA. Requirement of human renal water channel aquaporin-2 for vasopressin-dependent concentration of urine. *Science* 1994, 264: 92-95.

Dell'Acqua ML, Faux MC, Thorburn J, Thorburn A, Scott JD. Membrane-targeting sequences on AKAP79 bind phosphatidylinositol-4, 5-bisphosphate. *EMBO J* 1998, 17: 2246-2260.

Dell'Acqua ML, Scott JD. Protein kinase A anchoring. *J Biol Chem* 1997, 272: 12881-12884.

DiGiovanni SR, Nielsen S, Christensen EI, Knepper MA. Regulation of collecting duct water channel expression by vasopressin in Brattleboro rat. *Proc Natl Acad Sci U S A*. 1994, 91: 8984-8988

Diviani D, Scott JD. AKAP-Lbc anchors protein kinase A and nucleates Galpha 12-selective Rho-mediated stress fiber formation. *J Biol Chem* 2001, 276: 44247-44257.

Diviani D, Scott JD. AKAP signaling complexes at the cytoskeleton. *J Cell Sci* 2001, 114: 1431-1437.

Dodge KL, Carr DW, Yue C, Sanborn BM. Role for AKAP (A kinase anchoring protein) scaffolding in the loss of a cyclic adenosine 3',5'-monophosphate inhibitory response in late pregnant rat myometrium. *Mol Endocrinol* 1999, 13: 1977-1987.

Dodge KL, Carr DW, Sanborn BM. Protein kinase A anchoring to the myometrial plasma membrane is required for cyclic adenosine 3',5'-monophosphate regulation of phosphatidylinositide turnover. *Endocrinology* 1999b, 140: 5165-5170

Dong, F., Feldmesser, M., Casadevall, A., Rubin, C.S. Molecular characterization of a cDNA that encodes six isoforms of a novel murine A kinase anchor protein. *J Biol Chem* 1998, 273: 6533-6541.

Downward J. SR: KSR: A novel player in the RAS pathway. *Cell* 1995, 83: 831-834.

Echevarria M, Ilundain AA. Aquaporins. *J Physiol Biochem* 1998, 54: 107-118.

Edemir, B.. Charakterisierung zweier für AKAPs, AKAP-9.1 und RnHT31, kodierender cDNAs aus der Ratte. Diplomarbeit, 1999, Freie Universität Berlin.

Edemir, B., Bouchaala, C., Klussmann, E., Maric, K., and Rosenthal, W. Cloning and characterization of a new splice variant of AKAP18 potentially involved in vasopressin-mediated water reabsorption. 41st Spring Meeting Deutsche Gesellschaft für experimentelle und klinische Pharmakologie und Toxikologie, Mainz, March 21st-23rd. *Naunyn-Schmiedeberg's Arch. Pharmacol.*, suppl. to 361 (4), abstr. 258, 2000.

Edemir, B., Henn, V., Stefan, E., Schmitt, R., Storm, R., Rosenthal, W., and Klussmann, E. AKAP18 $\delta$  and AKAP18 $\epsilon$  are potentially involved in the vasopressin-mediated translocation of aquaporin-2 into the plasma membrane of renal principal cells. Second International Göttingen Meeting on Protein and Membrane Transport in the Secretory Pathway. Max-Planck-Institute for Biophysical Chemistry, Germany, December 4<sup>th</sup>-6<sup>th</sup>, 2002.

Erlichman, J., Sarkar, D., Fleischer, N., Rubin, C.S. Identification of two subclasses of type II cAMP-dependent protein kinases. Neural-specific and non-neural protein kinases. *J Biol Chem* 1980, 255: 8179-8184.

Faux MC, Scott JD. More on target with protein phosphorylation: conferring specificity by location. *Trends Biochem Sci* 1996, 21: 312-315.

Feliciello, A., Gottesman, M.E., Avvedimento, E.V. The biological functions of A-kinase anchor proteins. *J Mol Biol* 2001, 308: 99-114.

Feliciello, A., Rubin, C.S., Avvedimento, E.V., Gottesman, M.E. Expression of A kinase anchor protein 121 is regulated by hormones in thyroid and testicular germ cells. *J Biol Chem* 1998, 273: 23361-23366.

Francis SH, Poteet-Smith C, Busch JL, Richie-Jannetta R, Corbin JD. Mechanisms of autoinhibition in cyclic nucleotide-dependent protein kinases. *Front Biosci* 2002, 7: d580-592.

Fraser ID, Cong M, Kim J, Rollins EN, Daaka Y, Lefkowitz RJ, Scott JD. Assembly of an A kinase-anchoring protein-beta(2)-adrenergic receptor complex facilitates receptor phosphorylation and signaling. *Curr Biol* 2000, 10: 409-412

Fraser, I.D.C., Scott, J.D. Modulation of ion channels: a ‘current’ view of AKAPs. *Neuron* 1999, 23: 423-426.

Fraser, I.D.C., Tavalin, S.J., Lester, L.B., Langeberg, L.K., Westphal, A.M., Dean, R.A., Marrion, N.V., Scott, J.D. A novel lipid-anchored A-kinase anchoring protein facilitates cAMP-responsive membrane events. *EMBO J* 1998, 17: 2261-2272.

Frokiaer J, Marples D, Valtin H, Morris JF, Knepper MA, Nielsen S. Low aquaporin-2 levels in polyuric DI +/- severe mice with constitutively high cAMP-phosphodiesterase activity. *Am J Physiol* 1999, 276: F179-190.

Gamm DM, Baude EJ, Uhler MD. The major catalytic subunit isoforms of cAMP-dependent protein kinase have distinct biochemical properties in vitro and in vivo. *J Biol Chem* 1996, 271: 15736-15742.

Garrington TP, Johnson GL. Organization and regulation of mitogen-activated protein kinase signaling pathways. *Curr Opin Cell Biol* 1999, 11: 211-218.

Hasler U, Mordasini D, Bens M, Bianchi M, Cluzeaud F, Rousselot M, Vandewalle A, Feraille E, Martin PY. Long term regulation of aquaporin-2 expression in vasopressin-responsive renal collecting duct principal cells. *J Biol Chem* 2002, 277: 0379-0386.

Hausken ZE, Coglan VM, Hastings CA, Reimann EM, Scott JD. Type II regulatory subunit (RII) of the cAMP-dependent protein kinase interaction with A-kinase anchor proteins requires isoleucines 3 and 5. *J Biol Chem* 1994, 269: 24245-24251.

Hausken ZE, Coglan VM, Scott JD. Overlay, ligand blotting, and band-shift techniques to study kinase anchoring. *Methods Mol Biol* 1998, 88: 47-64.

Hausken ZE, Dell'Acqua ML, Coglan VM, Scott JD. Mutational analysis of the A-kinase anchoring protein (AKAP)-binding site on RII. Classification Of side chain determinants for anchoring and isoform selective association with AKAPs. *J Biol Chem* 1996, 271: 29016-29022.

Henn V, Edemir B, Stefan E, Schmitt R, Vossebein L, Lorenz D, Tamma G, Beyermann M, Krause E, Herberg F W., Valenti G, Bachmann S, Rosenthal W and Klussmann E. Identification of novel A-kinase anchoring protein 18 isoforms-evidence for a role in the vasopressin-induced aquaporin-2 shuttle in renal principal cells. Manuskript eingereicht

Huang LJ, Durick K, Weiner JA, Chun J, Taylor SS. D-AKAP2, a novel protein kinase A anchoring protein with a putative RGS domain. *Proc Natl Acad Sci U S A* 1997a, 94: 11184-11189.

Huang LJ, Durick K, Weiner JA, Chun J, Taylor SS. Identification of a novel protein kinase A anchoring protein that binds both type I and type II regulatory subunits. *J Biol Chem* 1997b, 272: 8057-8064.

Huang, L.J., Wang, L., Ma, Y., Durick, K., Perkins, G., Deerinck, T.J., Ellisman, M.H., Taylor, S.S. NH<sub>2</sub>-terminal targeting motifs direct dual specificity A-kinase-anchoring protein 1 (D-AKAP1) to either mitochondria or endoplasmic reticulum. *J Cell Biol* 1999, 145: 951-959.

Hulme JT, Ahn M, Hauschka SD, Scheuer T, Catterall WA. A novel leucine zipper targets AKAP15 and cyclic AMP-dependent protein kinase to the C terminus of the skeletal muscle Ca<sup>2+</sup> channel and modulates its function. *J Biol Chem* 2002, 277(6): 4079-4087.

Ishibashi, K., R. Kuriyama, Y. Gu, M. Kuwahara, S. Sasaki, and F. Marumo. Cloning and expression of two new aquaporins from testis. *J Am Soc Nephrol* 1997, 8: 714-718,

Jahnsen T, Hedin L, Kidd VJ, Beattie WG, Lohmann SM, Walter U, Durica J, Schulz TZ, Schiltz E, Browner M. Molecular cloning, cDNA structure, and regulation of the regulatory subunit of type II cAMP-dependent protein kinase from rat ovarian granulosa cells. *J Biol Chem* 1986, 261: 12352-12361

Jo I, Ward DT, Baum MA, Scott JD, Coghlan VM, Hammond TG, Harris HW. AQP2 is a substrate for endogenous PP2B activity within an inner medullary AKAP-signaling complex. *Am J Physiol Renal Physiol* 2001, 281: F958-965.

Kashishian A, Howard M, Loh C, Gallatin WM, Hoekstra MF, Lai Y. AKAP79 inhibits calcineurin through a site distinct from the immunophilin-binding region. *J Biol Chem* 1998, 273: 27412-27419.

Katsura T, Verbavatz JM, Farinas J, Ma T, Ausiello DA, Verkman AS, Brown D. Constitutive and regulated membrane expression of aquaporin 1 and aquaporin 2 water channels in stably transfected LLC-PK1 epithelial cells. *Proc Natl Acad Sci U S A* 1995, 92: 7212-7216.

Kennelly, P.J., Krebs, E.G. Consensus sequences as substrate specificity determinants for protein kinases and protein phosphatases. *J Biol Chem* 1991, 266: 15555-15558.

King LS, Agre P. Pathophysiology of the aquaporin water channels. *Annu Rev Physiol* 1996, 58: 619-648.

Klauck TM, Faux MC, Labudda K, Langeberg LK, Jaken S, Scott JD. Coordination of three signaling enzymes by AKAP79, a mammalian scaffold protein. *Science* 1996, 271: 1589-1592.

Klussmann, E., Edemir, B., Pepperle, B., Tamma, G., Klauschenz, E., Hundsrucker, C., Maric, K., Rosenthal, W. Ht31: The first protein kinase A anchoring protein to integrate protein kinase A and Rho signaling. *FEBS Lett* 2001a, 507: 264-268.

Klussmann E, Tamma G, Lorenz D, Wiesner B, Maric K, Hofmann F, Aktories K, Valenti G, Rosenthal W. An inhibitory role of Rho in the vasopressin-mediated translocation of aquaporin-2 into cell membranes of renal principal cells. *J Biol Chem* 2001b, 276:20451-20457.

Klussmann, E., Maric, K., Wiesner, B., Beyermann, M., Rosenthal, W. Protein kinase A anchoring proteins are required for vasopressin-mediated translocation of aquaporin-2 into cell membranes of renal principal cells. *J Biol Chem* 1999, 274: 4934-4938.

Koch CA, Anderson D, Moran MF, Ellis C, Pawson T. H2 and SH3 domains: elements that control interactions of cytoplasmic signaling proteins. *Science* 1991, 252: 668-674.

Kolch W. Meaningful relationships: the regulation of the Ras/Raf/MEK/ERK pathway by protein interactions. *Biochem J* 2000, 351: 289-305.

Kozak M. Interpreting cDNA sequences: some insights from studies on translation. Mamm Genome 1996, 7: 563-574.

Krebs, E.G. The phosphorylation of proteins: a major mechanism for biological regulation. Biochem Soc Trans 1985, 13: 813-820.

Laemmli UK. Cleavage of structural proteins during the assembly of the head of bacteriophage T4. Nature 1970, 227: 680-685.

Lande MB, Jo I, Zeidel ML, Somers M, Harris HW Jr. Phosphorylation of aquaporin-2 does not alter the membrane water permeability of rat papillary water channel-containing vesicles. J Biol Chem 1996, 271: 5552-5557.

Landsverk HB, Carlson CR, Steen RL, Vossebein L, Herberg FW, Tasken K, Collas P. Regulation of anchoring of the RIIalpha regulatory subunit of PKA to AKAP95 by threonine phosphorylation of RIIalpha: implications for chromosome dynamics at mitosis. J Cell Sci 2001, 114: 3255-3264.

Lester LB, Scott JD. Anchoring of protein kinase A facilitates hormone-mediated insulin secretion. Proc Natl Acad Sci USA 1997, 94: 14942-14947

Li Y, Rubin CS. Mutagenesis of the regulatory subunit (RII beta) of cAMP-dependent protein kinase II beta reveals hydrophobic amino acids that are essential for RII beta dimerization and/or anchoring RII beta to the cytoskeleton. J Biol Chem 1995, 270: 1935-1944.

Lin, J.W., Wyszynski, M., Madhavan, R., Sealock, R., Kim, U.J., Sheng, M. Yotiao, a novel protein of neuromuscular junction and brain that interacts with specific splice variants of NMDA receptor subunit NR1. J Neurosci 1998, 18: 2017-2027.

Lin, R.Y., Moss, S.B., Rubin, C.S. Characterization of S-AKAP84, a novel developmentally regulated A kinase anchor protein of male germ cells. J Biol Chem 1995, 270: 27804-27811.

Lohmann SM, DeCamilli P, Einig I, Walter U. High-affinity binding of the regulatory subunit (RII) of cAMP-dependent protein kinase to microtubule-associated and other cellular proteins. Proc Natl Acad Sci U S A 1984, 81: 6723-6277.

Luo, Z., Shafit-Zagardo, B., Erlichman, J. Identification of the MAP2- and P75-binding domain in the regulatory subunit (RII beta) of type II cAMP-dependent protein kinase. Cloning and expression of the cDNA for bovine brain RII beta. J Biol Chem 1990, 265: 21804-21810.

Mandon B, Chou C L, Nielsen S, and Knepper M A. Syntaxin-4 is localized to the apical plasma membrane of rat renal collecting duct cells: possible role in aquaporin-2 trafficking. J Clin Invest 1996, 98: 906-913

Maric K, Oksche A, Rosenthal W. Aquaporin-2 expression in primary cultured rat inner medullary collecting duct cells. Am J Physiol 1998, 275: F796-801.

Marbles D, Knepper M A, Christensen E I and Nielsen S. Redistribution of aquaporin-2 water channels induced by vasopressin in rat kidney inner medullary collecting duct. Am J Physiol 1995, 269: C655-664

Mons N, Harry A, Dubourg P, Premont RT, Iyengar R, Cooper DM. Immunohistochemical localization of adenylyl cyclase in rat brain indicates a highly selective concentration at synapses. Proc Natl Acad Sci U S A 1995, 92: 8473-8477.

Nantel A, Mohammad-Ali K, Sherk J, Posner BI, Thomas DY. Interaction of the Grb10 adapter protein with the Raf1 and MEK1 kinases. J Biol Chem 1998, 273: 10475-10484.

Newlon, M.G., Roy, M., Hausken, Z.E., Scott, J.D., Jennings, P.A. The A-kinase anchoring domain of type II $\alpha$  cAMP-dependent protein kinase is highly helical. Biol Chem 1997, 272: 23637-23644.

Newlon, M.G., Roy, M., Morikis, D., Carr, D.W., Westphal, R., Scott, J.D., Jennings, P.A. A novel mechanism of PKA anchoring revealed by solution structures of anchoring complexes. *EMBO J* 2001, 20: 1651-1662.

Newlon, M.G., Roy, M., Morikis, D., Hausken, Z.E., Coghlan, V., Scott, J.D., Jennings, P.A.. The molecular basis for protein kinase A anchoring revealed by solution NMR. *Nature Struct Biol* 1999, 6: 222-227.

Nielsen S, Marples D, Birn H, Mohtashami M, Dalby NO, Trimble M, Knepper M. Expression of VAMP-2-like protein in kidney collecting duct intracellular vesicles. Colocalization with Aquaporin-2 water channels. *J Clin Invest* 1995, 96: 1834-1844.

Oksche A, Rosenthal W. The molecular basis of nephrogenic diabetes insipidus. *J Mol Med* 1998, 76: 326-337.

Oliveria SF, Gomez LL, Dell'Acqua ML. Imaging kinase--AKAP79--phosphatase scaffold complexes at the plasma membrane in living cells using FRET microscopy. *J Cell Biol* 2003, 160: 101-112.

Pawson T, Scott JD. Signaling through scaffold, anchoring, and adaptor proteins. *Science* 1997, 278: 2075-2080.

Rosenthal W, Seibold A, Antaramian A, Lonergan M, Arthus MF, Hendy GN, Birnbaumer M, Bichet DG. Molecular identification of the gene responsible for congenital nephrogenic diabetes insipidus. *Nature* 1992, 359: 233-235.

Rubino D, Driggers P, Arbit D, Kemp L, Miller B, Coso O, Pagliai K, Gray K, Gutkind S, Segars J, Characterization of Brx, a novel Dbl family member that modulates estrogen receptor action. *Oncogene* 1998, 16: 2513-2526.

Ruehr ML, Zakhary DR, Damron DS, Bond M. Cyclic AMP-dependent protein kinase binding to A-kinase anchoring proteins in living cells by fluorescence resonance energy transfer of green fluorescent protein fusion proteins. *J Biol Chem* 2003, 278: 24831-24836.

Sambrook,J., and Russel,D.W. (2001) Molecular cloning: a laboratory manual. 3<sup>rd</sup> d. Cold Spring Harbor laboratory Press, Cold Spring Harbor, New York.

Sandberg, M., Taskén K.A., Øyen, O., Hansson, V., Jahnson, T. Molecular cloning, cDNA structure and deduced amino acid sequence for a type I regulatory subunit of cAMP-dependent protein kinase from human testis. *Biochem Biophys Res Commun.* 1987, 149: 939-945.

Sander EE, Collard JG. Rho-like GTPases: their role in epithelial cell-cell adhesion and invasion. *Eur J Cancer* 1999, 35: 1905-1911.

Schaeffer HJ, Catling AD, Eblen ST, Collier LS, Krauss A, Weber MJ. MP1: a MEK binding partner that enhances enzymatic activation of the MAP kinase cascade. *Science* 1998, 281: 1668-1671.

Schillace RV, Scott JD. Organization of kinases, phosphatases, and receptor signaling complexes. *J Clin Invest* 1999, 103: 761-765.

Schillace RV, Voltz JW, Sim AT, Shenolikar S, Scott JD. Multiple interactions within the AKAP220 signaling complex contribute to protein phosphatase 1 regulation. *J Biol Chem* 2001, 276: 12128-12134.

Schmidt, P.H., Dransfield, D.T., Claudio, J.O., Hawley, R.G., Trotter, K.W., Milgram, S.L., Goldenring, J.R. AKAP350, a multiply spliced protein kinase A-anchoring protein associated with centrosomes. *J Biol Chem* 1999, 274: 3055-3066.

Scott JD, Stofko RE, McDonald JR, Comer JD, Vitalis EA, Mangili JA. Type II regulatory subunit dimerization determines the subcellular localization of the cAMP-dependent protein kinase. *J Biol Chem* 1990, 265: 21561-21566.

Scott JD. Dissection of protein kinase and phosphatase targeting interactions. *Soc Gen Physiol Ser* 1997, 52: 227-239.

Scott, J.D. Cyclic nucleotide-dependent protein kinases. *Pharmacol Ther* 1991, 50: 123-145.

Sheng M, Sala C. PDZ domains and the organization of supramolecular complexes. *Annu Rev Neurosci* 2001, 24: 1-29.

Skålhegg, B.S., Taskén K.A. Specificity in the cAMP/PKA signaling pathway. Differential expression, regulation, and subcellular localization of subunits of PKA. *Front Biosci* 2000, 5: D678-693.

Solberg, R., Taskén K.A., Keisrud, A., Jahnson, T. Molecular cloning, cDNA structure and tissue-specific expression of the human regulatory subunit RI $\beta$  of cAMP-dependent protein kinases. *Biochem Biophys Res Commun* 1991, 176: 166-172.

Stein, J.C., Farooq, M., Norton, W.T., Rubin, C.S. Differential expression of isoforms of the regulatory subunit of type II cAMP-dependent protein kinase in rat neurons, astrocytes and oligodendrocytes. *J Biol Chem* 1987, 262: 3002-3006.

Storm R, Klussmann E, Geelhaar A, Rosenthal W, Maric K. Osmolality and solute composition are strong regulators of AQP2 expression in renal principal cells. *Am J Physiol Renal Physiol* 2003, 284: F189-198.

Takahashi M, Shibata H, Shimakawa M, Miyamoto M, Mukai H, Ono Y. Characterization of a novel giant scaffolding protein, CG-NAP, that anchors multiple signaling enzymes to centrosome and the golgi apparatus. *J Biol Chem* 1999, 274: 17267-17274.

Tapon N, Hall A. Rho, Rac and Cdc42 GTPases regulate the organization of the actin cytoskeleton. *Curr Opin Cell Biol* 1997, 9: 86-92.

Tasken K, Skalhegg BS, Tasken KA, Solberg R, Knutsen HK, Levy FO, Sandberg M, Orstavik S, Larsen T, Johansen AK, Vang T, Schrader HP, Reinton NT, Torgersen KM, Hansson V, Jahnsen T. Structure, function, and regulation of human cAMP-dependent protein kinases. *Adv Second Messenger Phosphoprotein Res* 1997, 31: 191-204.

Taylor SS, Buechler JA, Yonemoto W. cAMP-dependent protein kinase: framework for a diverse family of regulatory enzymes. *Annu Rev Biochem* 1990, 59: 971-1005.

Terris J, Ecelbarger CA, Marples D, Knepper MA, Nielsen S. Distribution of aquaporin-4 water channel expression within rat kidney. *Am J Physiol* 1995, 269: F775-785.

Tibbs VC, Gray PC, Catterall WA, Murphy BJ. AKAP15 anchors cAMP-dependent protein kinase to brain sodium channels. *J Biol Chem* 1998, 273: 25783-25788.

Trotter, K W , Fraser, I D C , Scott, G K , Stutts, M J , Scott, J D Alternative splicing regulates the subcellular localization of A-kinase anchoring protein 18 isoforms. *J Cell Biol* 1999, 147: 1481-1492.

Uhler, M D , Carmichael, D F , Lee, D C , Chrivia, J C , Krebs, E G , McKnight, G S Isolation of cDNA clones coding for the catalytic subunit of mouse cAMP-dependent protein kinase. *Proc Natl Acad Sci USA*, 1986a, 83: 1300-1304.

Uhler, M D, Chrivia, J C , McKnight, G S Evidence for a second isoform of the catalytic subunit of cAMP-dependent protein kinase. *J Biol Chem* 1986b, 261: 15360-15363.

Van Aelst L, D'Souza-Schorey C. Rho GTPases and signaling networks. *Genes Dev* 1997, 11: 2295-2322.

Van Criekinge W, Beyaert R. Yeast Two-Hybrid: State of the Art. *Biol Proced Online* 1999, 2: 1-38.

van Hoek AN, Yang B, Kirmiz S, Brown D. Freeze-fracture analysis of plasma membranes of CHO cells stably expressing aquaporins 1-5. *J Membr Biol* 1998, 165: 243-254.

Verbavatz JM, Brown D, Sabolic I, Valenti G, Ausiello DA, Van Hoek AN, Ma T, Verkman AS. Tetrameric assembly of CHIP28 water channels in liposomes and cell membranes: a freeze-fracture study. *J Cell Biol* 1993, 123: 605-618.

Vijayaraghavan S, Liberty G A, Mohan J, Winfrey V P, Olson G E, Carr D W. Isolation and molecular characterization of AKAP110, a novel, sperm-specific protein kinase A-anchoring protein. *Mol Endocrinol* 1999, 13: 705-717.

Witczak O, Skålhegg B S, Keryer G, Bornens M, Taskén K, Jahnsen T, Ørstavik S Cloning and characterization of a cDNA encoding an A-kinase anchoring protein located in the centrosome, AKAP450. *EMBO J* 1999, 18: 1858-1868.

Yasui M, Kwon TH, Knepper MA, Nielsen S, Agre P. Aquaporin-6: An intracellular vesicle water channel protein in renal epithelia. *Proc Natl Acad Sci U S A* 1999, 96: 5808-5813.

Zaccolo M, Pozzan T. Discrete microdomains with high concentration of cAMP in stimulated rat neonatal cardiac myocytes. *Science*. 2002, 295: 1711-1715.

Zakhary D R, Bond M. Differences in the RII-binding domains of AKAPs regulate affinity of RII binding: analysis by SPR. *Biophys J* 2000, 78: 1459-1464.

Zhang J, Ma Y, Taylor SS, Tsien RY. Genetically encoded reporters of protein kinase A activity reveal impact of substrate tethering. *Proc Natl Acad Sci U S A* 2001, 98: 14997-5002