

References

Adachi M, Yang YY, Furuichi Y, Miyamoto C (1991). Cloning and characterization of cDNA encoding human A-type endothelin receptor. *Biochem Biophys Res Comm* **180**: 1265-1272.

Akiyama N, Hiraoka O, Fujii Y, Terashima H, Satoh M, Wada K, Furuichi Y (1992). Biotin derivatives of endothelin: utilization for affinity purification of endothelin receptor. *Protein Expr Purific* **3** : 427-433.

Andersen NH, Chen CP, Marschner TM, Krystek SR Jr, Bassolino DA (1992). Conformational isomerism of endothelin in acidic aqueous media: a quantitative NOESY analysis. *Biochemistry* **31**: 1280-1295.

Andrew ER, Bradbury A, Eades RG (1958). Nuclear magnetic resonance spectra from a crystal rotated at high speed. *Nature* **182**: 1659.

Arai H, Hori S, Aramori I, Ohkubo H, Nakanishi S (1990). Cloning and expression of a cDNA encoding an endothelin receptor. *Nature* **348**: 730-732.

Arai H, Nakao K, Takaya K, Hosoda K, Ogawa Y, Nakanishi S, Imura H (1993). The human endothelin-B receptor gene. *J Biol Chem* **268**: 3463-3470.

Aumelas A, Chiche L, Mahe E, Le-Nguyen D, Sizun P, Berthault P, Perly B (1991). Determination of the structure of [Nle⁷]-endothelin by ¹H NMR. *Int J Pept Protein Res* **37** : 315-324.

Auricchio A, Casari G, Staiano A, Ballabio A (1996). Endothelin-B receptor mutations in patients with isolated Hirschsprung disease from a non-inbred population. *Hum Mol Genet* **5**: 351-354.

Bhatnagar S, Rao GS (2000). Molecular modelling of the complex of endothelin-1 (ET-1) with the endothelin type A (ET_A) receptor and the rational design of a peptide antagonist. *J Biomol Struct Dynam* **17**: 957-964.

- Bdolah A, Wollberg Z, Ambar I, Kloog Y, Sokolovsky M, Kochva E (1989). Disturbances in the cardiovascular system caused by endothelin and sarafotoxin. *Biochem Pharmacol* **38**: 3145-3146.
- Becker A, Dowdle EB, Hechler U, Kauser K, Donner P, Schleuning WD (1993). Bibrotoxin, a novel member of the endothelin/ sarafotoxin peptide family, from the venom of the burrowing asp *Atractaspis bibroni*. *FEBS Lett* **315**: 100-103.
- Becker A, Theuring F, Gottwald M, Kauser K, Schleuning WD, Donner P (1994). Purification of Human Big Endothelin 1 Derived through Cleavage with Collagenase and Dipeptidylpeptidase IV from a Fusion Protein Expressed in *Escherichia coli*. *Protein Expr Purif* **5**: 50-56.
- Bennes R, Calas B, Chabrier PE, Demaille J, Heitz F (1990). Evidence for aggregation of endothelin 1 in water. *FEBS Lett* **276**: 21-24.
- Blight MA, Chervaux C, Holland IB (1994). Protein secretion pathway in *Escherichia coli*. *Curr Opin Biotechnol* **5** : 468-474.
- Bockaert J, Pin JP (1999). Molecular tinkering of G protein-coupled receptors: an evolutionary success. *EMBO J* **18**: 1723-1729.
- Boulanger Y, Biron E, Khiat A, Fournier A (1999). Conformational analysis of biologically active truncated linear analogs of endothelin-1 using NMR and molecular modeling. *J Pept Res* **53**: 214-222.
- Bouvier M, Ménard L, Dennis M, Marullo S (1998). Expression and recovery of functional G-protein-coupled receptors using baculovirus expression systems. *Curr Opin Biotechnol* **9**: 522-527.
- Castellani F, van Rossum B, Diehl A, Schubert M, Rehbein K, Oschkinat H (2002). Structure of a protein determined by solid-state magic angle spinning NMR spectroscopy. *Nature* **420**: 98-102.

- Chiou WJ, Magnuson SR, Dixon D, Sundy S, Opgenorth TJ, Wu-Wong JR (1997). Dissociation characteristics of endothelin receptor agonists and antagonists in cloned human type-B endothelin receptor. *Endothelium* **5** : 179-189.
- Cid GM, Nugent PG, Davenport AP, Kuc RE, Wallace BA (2000). Expression and characterization of the human endothelin-A receptor in *Pichia pastoris*: influence of N-terminal epitope tags. *J Cardiovasc Pharmacol* **36**: S55-S57.
- Clozel M, Breu V, Gray GA, Kalina B, Loffler BM, Burri K, Cassal JM, Hirth G, Muller M, Neidhart W (1994). Pharmacological characterization of bosentan, a new potent orally active nonpeptide endothelin receptor antagonist. *J Pharmacol Exp Ther* **270**: 228-235.
- Cole HBR, Torchia DA (1991). An NMR study of the backbone dynamics of staphylococcal nuclease in the crystalline state. *Chem Phys* **158**: 271-281.
- Coles M, Munro SLA, Craik DJ (1994). The solution structure of a monocyclic analogue of endothelin [1, 15 Aba]-ET-1 determined by ¹H NMR spectroscopy. *J Med Chem* **37** : 656-664.
- Collins-Racie LA, McColgan JM, Grant KL, DiBlasio-Smith EA, McCoy JM, LaVallie ER (1995). Production of recombinant bovine enterokinase catalytic subunit in *Escherichia coli* using the novel secretory fusion partner DsbA. *Bio/Technology* **13** : 982-987.
- Dalgarno DC, Slater L, Chackalamannil, S, Senior MM (1992). Solution conformation of endothelin and point mutants by nuclear magnetic resonance spectroscopy. *Int J Peptide Protein Res* **40**: 515-523.
- Davenport AP (2000). Endothelin receptors. Iuphar compendium of receptor characterization and classification, 2nd edition. Iuphar Media, London, UK: 182-188.
- Davenport AP, Maguire JJ (2002). Of mice and men: advances in endothelin research and first antagonist gains FDA approval. *Trends Pharmacol Sci* **23**: 155-157.

- DeCaluwé LLJ, van Oostrum J, Janssen JJM, DeGrip WJ (1993). In vitro synthesis of bovine rhodopsin using recombinant virus. *Methods Neurosci* **15**: 307-321.
- Detken A, Hardy EH, Ernst M, Kainosho M, Kawakami T, Aimoto S, Meier BH (2001). Methods for sequential resonance assignment in solid, uniformly ^{13}C , ^{15}N labelled peptides: quantification and application to antamanide. *J Biomol NMR* **20**: 203-221.
- Dixon RA, Kobilka BK, Strader DJ, Benovic JL, Dohlman HG, Frielle T, Bolanowski MA, Bennett CD, Rands E, Diehl RE, Mumford RA, Slater EE, Sigal IS, Caron MG, Lefkowitz RJ, Strader CD (1986). Cloning of the gene and cDNA for mammalian beta-adrenergic receptor and homology with rhodopsin. *Nature* **321**: 75-79.
- D'Orleans-Juste P, Plante M, Honore JC, Carrier E, Labonte J (2003). Synthesis and degradation of endothelin-1. *Can J Physiol Pharmacol* **81** : 503-510.
- Doi T, Hiroaki Y, Arimoto I, Fujiyoshi Y, Okamoto T, Satoh M, Furuichi Y (1997). Characterization of human endothelin B receptor and mutant receptors expressed in insect cells. *Eur J Biochem* **248**: 139-148.
- Doi T, Sugimoto H, Arimoto I, Hiroaki Y, Fujiyoshi, Y (1999). Interactions of Endothelin Receptor Subtypes A and B with Gi, Go, and Gq in Reconstituted Phospholipid Vesicles. *Biochemistry* **38**: 3090-3099.
- Efimov VA, Fradkov AF, Raskind AB, Khristin MS, Klimov VV, Chakhmadkhcheva OG (1994). Expression of the barley *psbA* gene in *Escherichia coli* yields a functional *in vitro* photosystem II protein D1. *FEBS Lett* **348**: 153-157.
- Elshourbagy NA, Korman DR, Wu HL, Sylvester DR, Lee JA, Nuthalaganti P, Bergsma DJ, Kumar CS, Nambi P (1993). Molecular characterization and regulation of the human endothelin receptors. *J Biol Chem* **268**: 3873-3879.
- Endo S, Inooka H, Ishibashi Y, Kitada C, Mizuta E, Fujino M (1989). Solution conformation of endothelin determined by nuclear magnetic resonance and distance geometry. *FEBS Lett* **257**: 149-154.

- Fassina G, Merli S, Germani S, Ciliberto G, Cassani G (1994). High yield expression and purification of human endothelin-1. *Protein Expr Purif* **5**: 559-568.
- Fischli W, Clozel M, Guilly C (1989). Specific receptors for endothelin on membranes from human placenta. Characterization and use in a binding assay. *Life Sci* **44**: 1429-1436.
- Flower DR (1999). Modelling G-protein-coupled receptors for drug design. *Biochem Biophys Acta* **1422**: 207-234.
- Fredriksson R, Lagerström MC, Liundin LG, Schiöth HB (2003). The G-Protein-coupled receptors in the human genome form five main families. Phylogenetic analysis, paralogon groups and fingerprints. *Mol Pharmacol* **63**: 1256-1272.
- Galantino M, de Castiglione R, Cristiani F, Vaghi F, Liu W, Zhang JW, Tam JP (1995). D-amino acid scan of endothelin: importance of amino acids adjacent to cysteinyl residues in isomeric selectivity. *Pept Res* **8**: 154-159.
- Galié N, Manes A, Branzi A (2004). The endothelin system in pulmonary arterial hypertension. *Cardiovasc Res* **61**: 227-237.
- Gellissen G (2000). Heterologous protein production in methylotrophic yeasts. *Appl Microbiol Biotechnol* **54**: 741-750.
- Gether U (2000). Uncovering Molecular Mechanisms Involved in Activation of G Protein-Coupled Receptors. *Endocrine Reviews* **21**: 90-113.
- Gimpl G, Klein U, Reiländer H, Fahrenholz F (1995). Expression of the human oxytocin receptor in baculovirus-infected insect cells: high-affinity binding is induced by a cholesterol-cyclodextrin complex. *Biochemistry* **34**: 13794-13801.
- Grantcharova E, Furkert J, Reusch HP, Krell HW, Papsdorf G, Beyermann M, Schülein R, Rosenthal W, Oksche A (2002). The extracellular N-terminus of the endothelin B (ETB) receptor is cleaved by a metalloprotease in an agonist-dependent process. *J Biol Chem* **277**: 43933-43941.

Guan XM, Kobilka TS, Kobilka BK (1992). Enhancement of membrane insertion and function in a type IIIb membrane protein following introduction of a cleavable signal peptide. *J Biol Chem* **267**: 21995-21998.

Gudermann T, Nurnberg B, Schultz G (1995). Receptors and G proteins as primary components of transmembrane signal transduction. Part 1. G-protein-coupled receptors: structure and function. *J Mol Med* **73**: 51-63.

Gullion T & Schaefer J (1989). Rotational-echo double resonance NMR. *J Magn Reson* **81**: 196-200.

Haendler B, Hechler U, Becker A, Schleuning WD (1993). Expression of human endothelin receptor ET_B by *Escherichia coli* transformants. *Biochem Biophys Res Comm* **191**: 633-638.

Hechler U, Becker A, Haendler B, Schleuning WD (1993). Stable expression of human endothelin receptors ET_A and ET_B by transfected baby hamster kidney cells. *Biochem Biophys Res Comm* **194**: 1305-1310.

Hewage CM, Jiang L, Parkinson JA, Ramage R, Sadler IH (1999). Solution structure of a novel ET_B receptor agonist ET1-21 [Cys(Acm)1,15, Aib3,11, Leu7] by nuclear magnetic resonance spectroscopy and molecular modelling. *J Pept Res* **53**: 223-233.

Hewage CM, Jiang L, Parkinson JA, Ramage R, Sadler IH (2002). Design of ET(B) receptor agonists: NMR spectroscopic and conformational studies of ET7-21[Leu7, Aib11, Cys(Acm)15]. *Protein Eng* **15**: 161-167.

Hick S, Heidemann I, Soskic V, Müller-Esterl W, Godovac-Zimmermann J (1995). Isolation of the endothelin B receptor from bovine lung. Structure, signal sequence, and binding site. *Eur J Biochem* **234**: 251-257.

Hiley CR, Jones CR, Pelton JT, Miller RC (1990). Binding of [¹²⁵I]-endothelin-1 to rat cerebellar homogenates and its interactions with some analogues. *Br J Pharmacol* **101**: 319-324.

- Hiller M, Krabben L, Vinothkumar KR, Castellani F, van Rossum BJ, Kuhlbrandt W, Oschkinat H (2005). Solid-state magic-angle spinning NMR of outer-membrane protein G from *Escherichia coli*. *Chembiochem* **6**: 1679-1684.
- Howard AD, McAllister G, Feighner SD, Liu Q, Nargund RP, Van der Ploeg LH, Patchett AA (2001). Orphan G-protein coupled receptors and natural ligand discovery. *Trends Pharmacol Sci* **22** : 132-140.
- Houssami S, Findlay DM, Brady CL, Myers DE, Martin TJ, Sexton PM (1994). Isoforms of the rat calcitonin receptor: consequences for ligand binding and signal transduction. *Endocrinology* **135**: 183-190.
- Hulme EC (1990). Receptor Biochemistry: A Practical Approach, Oxford University Press, New York.
- Ihara M, Ishikawa K, Fukuroda T, Saeki T, Funabashi K, Fukami T, Suda H, Yano M (1992). In vitro biological profile of a highly potent novel endothelin (ET) antagonist BQ-123 selective for the ET_A receptor. *J Cardiovasc Pharmacol* **44**: 1348-1356.
- Inooka H, Ohtaki T, Kitahara O, Ikegami T, Endo S, Kitada C et al. (2001). Conformation of a peptide ligand bound to its G-protein coupled receptor. *Nat Struct Biol* **8**: 161-165.
- Ishikawa K, Ihara M, Noguchi K, Mase T, Mino N, Saeki T, Fukuroda T, Fukami T, Ozaki S, Nagase T, Nishikibe M, Yano M (1994). Biochemical and pharmacological profile of a potent and selective endothelin B-receptor antagonist, BQ-788. *Proc Natl Acad Sci USA* **91**: 4892-4896.
- Janes RW, Peapus DH, Wallace BA (1994). The crystal structure of human endothelin. *Nat Struct Biol* **1**, 311-319.
- Kadonaga JT, Gautier AE, Straus DR, Charles AD, Edge MD, Knowles JR (1984). The role of the beta-lactamase signal sequence in the secretion of proteins by *Escherichia coli*. *J Biol Chem* **259**: 2149-2154.

- Katahira R, Umemura I, Takai M, Oda K, Okada T, Nosaka AY (1998). Structural studies on endothelin receptor subtype B specific agonist IRL 1620 [suc-[Glu⁹, Ala^{11,15}]ET-1(8-21)] and its analogs with dipalmitoyl phosphatidylcholine vesicles by NMR spectroscopy. *J Pept Res* **51**: 155-164.
- Kedzierski RM, Yanagisawa M (2001). Endothelin system : the double-edged sword in health and disease. *Annu Rev Pharmacol Toxicol* **41**: 851-876.
- Kern R, Malki A, Holmgren A, Richarme G (2003). Chaperone properties of *Escherichia coli* thioredoxin and thioredoxin reductase. *Biochem J* **371**: 965-972.
- Kitazumi K, Shiba T, Nishiki K, Furukawa Y, Takasaki C, Tasaka K (1990). Structure-activity relationship in vasoconstrictor effects of sarafotoxins and endothelin-1. *FEBS Lett* **260**: 269-272.
- Klein U, Fahrenholz F (1994). Reconstitution of the myometrial oxytocin receptor into proteoliposomes. Dependence of oxytocin binding on cholesterol. *Eur J Biochem* **220** : 559-567.
- Kloog Y, Ambar I, Sokolovsky M, Kochva E, Bdolah A, Wollberg Z (1988). Sarafotoxin, a novel vasoconstrictor peptide : phosphoinositide hydrolysis in rat heart and brain. *Science* **242**: 268-270.
- Kloog Y and Sokolovsky M (1989). Similarities in mode and sites of action of sarafotoxins and endothelins. *Trends Pharmacol Sci* **10**: 212-214.
- Koshimizu T, Tsujimoto G, Ono K, Masaki T, Sakamoto A (1995). Truncation of the receptor carboxyl terminus impairs membrane signaling but not ligand binding of human ET_B endothelin receptor. *Biochem Biophys Res Comm* **217**: 354-362.
- Kozuka M, Ito T, Hirose S, Lodhi KM, Hagiwara H (1991). Purification and characterization of bovine lung endothelin receptor. *J Biol Chem* **266**: 16892-16896.

- Krystek SR Jr, Bassolino DA, Novotny J, Chen C, Marschner TM, Andersen NH (1991). Conformation of endothelin in aqueous ethylene glycol determined by ¹H-NMR and molecular dynamics simulations. *FEBS Lett* **281**: 212-218.
- Kumagaye S, Kuroda H, Nakajima K, Watanabe TX, Kimura T, Masaki T, Sakakibara S (1988). Synthesis and disulfide structure determination of porcine endothelin: An endothelium-derived vasoconstricting peptide. *Int J Peptide Protein Res* **32**: 519-526.
- Kusserow H, Unger T (2004). Vasoactive peptides, their receptors and drug development. *Basic Clin Pharmacol Toxicol* **94**: 5-12.
- LaVallie ER, DiBlasio EA, Kovacic S, Grant KL, Schendel PF & McCoy JM (1993). A thioredoxin gene fusion expression system that circumvents inclusion body formation in the *E. coli* cytoplasm. *Bio/Technology* **11**: 187-193.
- Laws DD, Bitter HM, Jerschow A (2002). Solid-state NMR spectroscopic methods in chemistry. *Angew Chem Int Ed* **41**: 3096-3129.
- Lee GM, Chen C, Marschner TM, Andersen NH (1994). Does the solid-state structure of endothelin-1 provide insights concerning the solution-state conformational equilibrium? *FEBS Lett* **355**: 140-146.
- Lee DS, Nguyen QT, Lapointe N, Austin PC, Ohlsson A, Tu JV, Stewart DJ, Rouleau JL (2003). Meta-analysis of the effects of endothelin receptor blockade on survival in experimental heart failure. *J Cardiac Fail* **9**: 368-374.
- Lenhard T, Maul G, Haase W, Reiländer H, Michel H (1996). A new set of versatile vectors for the heterologous expression of foreign genes using the baculovirus system (1996). *Gene* **169**: 187-190.
- Levin ER (1995). Mechanisms of disease: Endothelins. *N Engl J Med* **333**: 356-363.

- Licari PJ, Bailey JE (1992). Modeling the population dynamics of baculovirus-infected insect cells: Optimizing infection strategies for enhanced recombinant protein yields. *Biotechnol Bioeng* **39**: 432-441.
- Lin SH, Civelli O (2004). Orphan G protein-coupled receptors: targets for new therapeutic interventions. *Ann Med* **36**: 204-214.
- Loisel TP, Ansanay H, St-Onge S, Gay B, Boulanger P, Strosberg AD, Marullo S, Bouvier M (1997). Recovery of homogeneous and functional beta2-adrenergic receptors from extracellular baculovirus particles. *Nat Biotechnol* **15**: 1300-1304.
- Lorch M, Fahem S, Kaiser C, Weber I, Mason AJ, Bowie JU, Glaubitz C (2005). How to Prepare Membrane Proteins for Solid-State NMR: A Case Study on the α -Helical Integral Membrane Protein Diacylglycerol Kinase from *E. coli*. *ChemBioChem* **6**: 1693-1700.
- Luca S, Filippov DV, van Boom JH, Oschkinat H, de Groot HJM, Baldus M (2001). Secondary chemical shifts in immobilized peptides and proteins: a qualitative basis for structure refinement under magic angle spinning. *J Biomol NMR* **20**: 325-331.
- Luca S, White JF, Sohal AK, Filippov DV, van Boom JH, Grisshammer R, Baldus M (2003). The conformation of neurotensin bound to its G protein-coupled receptor. *Proc Natl Acad Sci USA* **100**: 10706-10711.
- Lundström K, Schweitzer C, Rotmann D, Hermann D, Schneider EM, Ehrenguber MU (2001). Semliki Forest virus vectors: efficient vehicles for in vitro and in vivo gene delivery. *FEBS Lett* **504**: 99-103.
- Lundström K (2003). Semliki Forest virus vectors for rapid and high-level expression of integral membrane proteins. *Biochem Biophys Acta* **1610**: 90-96.
- Luscher TF, Barton M (2000). Endothelins and endothelin receptor antagonists: therapeutic considerations for a novel class of cardiovascular drugs. *Circulation* **102**: 2434-2440.

Mac TT, Beyermann M, Pires JR, Schmieder P, Oschkinat H (2006). High yield expression and purification of isotopically labelled human ET-1 for use in NMR studies (in press).

Marston, FA (1986). The purification of eukaryotic polypeptides synthesized in *Escherichia coli*. *Biochem. J.* **240**: 1-12.

Masaki T, Ninomiya H, Sakamoto A, Okamoto Y (1999). Structural basis of the function of endothelin receptor. *Molecular and Cellular Biochemistry* **190**: 153-156.

Masaki T (2000). The Endothelin Family: An Overview. *J Cardiovasc Pharmacol* **35**: S3-S5.

Masaki T (2004). Historical review: Endothelin. *Trends in Pharmacol Sci* **25**: 219-224.

Massotte D, Pereira CA, Pouliquen Y, Pattus F (1999). Parameters influencing human mu opioid receptor over-expression in baculovirus-infected insect cells. *J Biotechnol* **69**: 39-45.

McDermott A, Polenova T, Bockmann A, Zilm KW, Paulsen EK, Martin RW, Montelione GT, Paulsen EK (2000). Partial NMR assignments for uniformly (¹³C, ¹⁵N)-enriched BPTI in the solid state. *J Biomol NMR* **16**: 209-219.

Mertens I, Vandingenen A, Meeusen T, DeLoof A, Schoofs L (2004). Postgenomic characterization of G-protein-coupled receptors. *Pharmacogenomics* **5**: 657-672.

Miasiro N, de Castiglione R, Paiva ACM (1995). Role of positions 9 and 10 in the endothelin molecule for biological activity and discrimination of receptor subtypes. *Eur J Pharmacol* **278**: 103-109.

Missiakas D, Schwager F, Raina S (1995). Identification and characterization of a new disulfide isomerase-like protein (DsbD) in *Escherichia coli*. *EMBO J* **14**: 3415-3424.

Munro S, Craik D, McConville C, Hall J, Searle M, Bicknell W, Scanlon D, Chandler C (1991). Solution conformation of endothelin, a potent vaso-constricting bicyclic peptide. A combined use of ¹H NMR spectroscopy and distance geometry calculations. *FEBS Lett* **278**: 9-13.

- Nambi P, Pullen M, Kincaid J, Nuthulaganti P, Aiyar N, Brooks DP, Gellai M, Kumar C (1997). Identification and characterization of a novel endothelin receptor that binds both ET_A- and ET_B- selective ligands. *Mol Pharmacol* **52**: 582-589.
- Nathans J, Hogness DS (1983). Isolation, sequence analysis, and intron-exon arrangement of the gene encoding bovine rhodopsin. *Cell* **34**: 807-814.
- Nelson J, Bagnato A, Battistini B, Nisen P (2003). The endothelin axis: emerging role in cancer. *Nature Reviews Cancer* **3**: 110-116.
- Nilges M, Clore GM, Groenborn AM (1988). Determination of three-dimensional structures of proteins from interproton distance data by hybrid distance geometry-dynamical simulated annealing calculations. *FEBS Lett* **229**: 317-324.
- Oh P, Schnitzer JE (2001). Segregation of heterotrimeric G proteins in cell surface microdomains. G (q) binds caveolin to concentrate in caveolae, whereas G (i) and G (s) target lipid rafts by default. *Mol Biol Cell* **12**: 685-698.
- Ohashi H, Katsuta-Enomoto Y, Yasufuku K, Okada K, Yano M (1991). Synthesis of human Big endothelin-1 by sequence specific proteolysis of a fusion protein in *Escherichia coli*. *J Biochem* **110**: 628-634.
- Ohashi H, Yasufuku K, Yano M (1994). High-yield production of human big endothelin-1 by a combination of chemical modification and proteolysis of a fusion protein in *Escherichia coli*. *Appl Microbiol Biotechnol* **41**: 677-683.
- Ohlstein EH, Elliott JD, Feuerstein GZ, Ruffolo RR Jr (1996). Endothelin receptors: receptor classification, novel receptor antagonists, and potential therapeutic targets. *Med Res Rev* **16**: 365-390.
- Okamoto Y, Ninomiya H, Tanioka M, Sakamoto A, Miwa S, Masaki T (1997). Palmitoylation of human endothelin B. *J Biol Chem* **272**: 589-596.

Oksche A, Boese G, Horstmeyer A, Furkert J, Beyermann M, Bienert M, Rosenthal W (2000). Late endosomal/lysosomal targeting and lack of recycling of the ligand-occupied endothelin B receptor. *Mol Pharmacol* **57**: 1104-1113.

O'Reilly DR, Miller LK, Luckow VA (1992). Baculovirus expression vectors: A laboratory manual. W. H. Freeman and Co., New York.

O'Reilly DR, Miller LK, Luckow VA (1994). Characterizing recombinant gene expression (p. 185). Recombinant baculovirus expression vectors: A laboratory manual. Oxford University Press, Oxford, UK.

Orry AJ, Wallace BA (2000). Modeling and docking the endothelin G-protein-coupled receptor. *Biophys J* **79**: 3083-3094.

Palczewski K, Kumasaka T, Hori T, Behnke CA, Motoshima H, Fox BA, Le Trong I, Teller DC, Okada T, Stenkamp RE, Yamamoto M, Miyano M (2000). Crystal structure of rhodopsin: A G protein-coupled receptor. *Science* **289**: 739-745.

Parker EM, Kameyama K, Higashijima T, Ross EM: Reconstitutively active G protein-coupled receptors purified from baculovirus-infected insect cells (1991). *J Biol Chem* **266**: 519-526.

Pauli J, van Rossum B, Forster H, de Groot HJ, Oschkinat H (2000). Sample optimization and identification of signal patterns of amino acid side chains in 2D RFDR spectra of the alpha-spectrin SH3 domain. *J Magn Reson* **143**: 411-416.

Pauli J, Baldus M, van Rossum B, de Groot HJM, Oschkinat H (2001). Backbone and side-chain ¹³C and ¹⁵N signal assignments of the α-spectrin SH3 domain by magic angle spinning solid-state NMR at 17.6 Tesla. *Chembiochem* **2**: 272-281.

Perkins TDJ, Hider RC, Barlow DJ (1990). Proposed solution structure of endothelin. *Int J Pept Protein Res* **36**: 128-133.

Perret BG, Wagner R, Lecat S, Brillet K, Rabut G, Bucher B, Pattus F (2003). Expression of EGP-amino-tagged human mu opioid receptor in *Drosophila* Schneider cells: a potential expression system for large-scale production of G-protein coupled receptors. *Protein Expr Purif* **31**: 123-132.

Peterson GL (1983). Determination of total protein. *Methods Enzymol* **91**: 95-121.

Reif B, van Rossum BJ, Castellani F, Rehbein K, Diehl A, Oschkinat H (2003). Characterization of ^1H - ^1H distances in a uniformly [^2H , ^{15}N]-labeled SH3 domain by MAS solid-state NMR spectroscopy. *J Am Chem Soc* **125**: 1488-1489.

Reily MD, Dunbar JB Jr (1991). The conformation of endothelin-1 in aqueous solution: NMR-derived constraints combined with distance geometry and molecular dynamics calculations. *Biochem Biophys Res Commun* **178**: 570-577.

Remuzzi G, Perico N, Benigni A (2002). New therapeutics that antagonize endothelin: promises and frustrations. *Nature Rev Drug Disc* **1**: 986-1001.

Roos M, Soskic V, Poznanovic S, Godovac-Zimmermann J (1998). Post-translational modifications of endothelin receptor B from bovine lungs analyzed by mass spectrometry. *J Biol Chem* **273**: 924-931.

Rubanyi GM, Polokoff MA (1994). Endothelins: molecular biology, biochemistry, pharmacology, and pathophysiology. *Pharmacol Rev* **46**: 325-415.

Saeki T, Ihara M, Fukuroda T, Yamagiwa M, Yano M (1991). [Ala^{1,3,11,15}]endothelin-1 analogs with ETB agonistic activity. *Biochem Biophys Res Comm* **179**: 286-292.

Saeki T, Ihara M, Fukuroda T, Yano M (1992). Structure-activity relationship for ETB agonism in truncated endothelin-1 analogs. *Biochem Int* **28**: 305-312.

Saida K and Mitsui Y (1991). Structure of the precursor for vasoactive intestinal contractor (VIC): its comparison with those of endothelin-1 and endothelin-3. *J Cardiovasc Pharmacol* **17** Suppl 7: S55-58.

- Saito Y, Mizuno T, Itakura M, Suzuki Y, Ito T, Hagiwara H, Hirose S (1991). Primary structure of bovine endothelin ETB receptor and identification of signal peptidase and metal proteinase cleavage sites. *J Biol Chem* **266**: 23433-23437.
- Sakamoto A, Yanagisawa M, Sakurai T, Takuwa Y, Yanagisawa H, Masaki T (1991). Cloning and functional expression of human cDNA for the ETB endothelin receptor. *Biochem Biophys Res Commun* **178**: 656-663.
- Sakamoto A, Yanagisawa M, Sawamura T, Enoki T, Ohtani T, Sakurai T, Nakao K, Toyooka T, Masaki T (1993a). Distinct subdomains of human endothelin receptors determine their selectivity to endothelinA-selective antagonist and endothelinB-selective agonists. *J Biol Chem* **268**: 8547-8553.
- Sakamoto A, Yanagisawa M, Sakurai T, Nakao K, Toyooka T, Yano M, Masaki T (1993b). The Ligand-Receptor Interactions of the Endothelin Systems Are Mediated by Distinct 'Message' and 'Address' Domains. *J Cardiovasc Pharmacol* **22**: S113-S116.
- Sakurai T, Yanagisawa M, Takuwa Y, Miyazaki H, Kimura S, Goto K, Masaki T (1990). Cloning of a cDNA encoding a non-isopeptide-selective subtype of the endothelin receptor. *Nature* **348**: 732-735.
- Sarramegna V, Talmont F, Demange P, Milon A (2003). Heterologous expression of G-protein-coupled receptors: comparison of expression systems from the stand point of large-scale production and purification. *Cell Mol Life Sci* **60**: 1529-1546.
- Satoh M, Miyamoto C, Terashima H, Tachibana Y, Wada K, Watanabe T, Hayes AE, Gentz R, Furuichi Y (1997). Human endothelin receptors ET(A) and ET(B) expressed in baculovirus-infected insect cells—direct application for signal transduction analysis. *Eur J Biochem* **249**: 803-811.
- Saudek V, Hoflack J, Pelton JT (1989). ¹H-NMR study of endothelin, sequence-specific assignment of the spectrum and a solution structure. *FEBS Lett* **257**: 145-148.

- Schiller H, Haase W, Molsberger E, Janssen P, Michel H, Reiländer H (2000). The Human ET_B Endothelin Receptor Heterologously Produced in the Methylophilic Yeast *Pichia pastoris* Shows High-Affinity Binding and Induction of Stacked Membranes. *Receptors and Channels* **7**: 93-107.
- Schiller H, Molsberger E, Janssen P, Michel H, Reiländer H (2001). Solubilization and purification of the human ET_B endothelin receptor produced by high-level fermentation in *Pichia pastoris*. *Receptors Channels* **7**: 453-469.
- Schwartz TW (1994). Locating ligand-binding sites in 7TM receptors by protein engineering. *Curr Opin Biotechnol* **5**: 434-444.
- Singh V (1999). Disposable bioreactor for cell culture using wave-induced agitation. *Cytotechnology* **30**: 149-158.
- Sorensen HP, Mortensen KK (2005). Soluble expression of recombinant proteins in the cytoplasm of *Escherichia coli*. *Microb Cell Fact* **4**: 1.
- Stavros FD, Hasel KW, Okun I, Freriks K (1993). COS-7 cells stably transfected to express the human ET_B receptor provide a useful screen for endothelin receptor antagonists. *J Cardiovasc Pharmacol* **22 Suppl 8**: S43-47.
- Sudjarwo SA, Hori M, Tanaka T, Matsuda Y, Okada T, Karaki H (1994). Subtypes of endothelin ET_A and ET_B receptors mediating venous smooth muscle contraction. *Biochem Biophys Res Commun* **200**: 627-633.
- Takashima H, Mimura N, Ohkubo T, Yoshida T, Tamaoki H, Kobayashi Y (2004a). Distributed computing and NMR constraint-based high-resolution structure determination: applied for bioactive peptide endothelin-1 to determine C-terminal folding. *J Am Chem Soc* **126**: 4504-4505.
- Takashima H, Tamaoki H, Teno N, Nishi Y, Uchiyama S, Fukui K, Kobayashi Y (2004b). Hydrophobic core around tyrosine for human endothelin-1 investigated by photochemically

induced dynamic nuclear polarization nuclear magnetic resonance and matrix-assisted laser desorption ionization time-of-flight mass spectrometry. *Biochemistry* **43**: 13932-13936.

Takasuka T, Horii I, Furuichi Y, Watanabe T (1991). Detection of an endothelin-1 binding protein complex by low temperature SDS/PAGE. *Biochem Biophys Res Comm* **176**: 392-400.

Takasuka T, Adachi M, Miyamoto C, Furuichi Y, Watanabe T (1992). Characterization of endothelin receptors ET_A and ET_B expressed in COS cells. *J Biochem* **112**: 396-400.

Takasuka T, Sakurai T, Goto K, Furuichi Y, Watanabe T (1994). Human endothelin receptor ET_B. Amino acid requirements for super stable complex formation with its ligand. *J Biol Chem* **269**: 7509-7513.

Tam JP, Liu W, Zhang JW, Galantino M, Bertolero F, Cristiani C, Vaghi F, de Castiglione R (1994). Alanine scan of endothelin: importance of aromatic residues. *Peptides* **15**: 703-708.

Tamaoki H, Kobayashi Y, Nishimura S, Ohkubo T, Kyogoku Y, Nakajima K, Kumagaye SI, Kimura T, Sakakibara S (1991). Solution conformation of endothelin determined by means of ¹H-NMR spectroscopy and distance geometry calculations. *Protein Eng* **4**: 509-518.

Tate CG, Haase J, Baker C, Boorsma M, Magnani F, Vallis Y, Williams DC (2003). Comparison of seven different heterologous protein expression systems for the production of the serotonin transporter. *Biochim Biophys Acta* **1610**: 141-163.

Van der Walle CF, Barlow DJ (1998). Investigations of structural requirements for endothelin antagonism. *Curr Med Chem* **5**: 321-335.

Wada K, Hashido k, Terashima H, Adachi M, Fujii Y, Hiraoka O, Furuichi Y, Miyamoto C (1995). Ligand Binding Domain of the Human Endothelin-B Subtype Receptor. *Protein Expr Purif* **6**: 228-236.

Wallace BA, Janes RW, Bassolino DA, Krystek SR Jr (1995). A comparison of X-ray and NMR structures for human endothelin-1. *Protein Sci* **4**: 75-83.

Wallace BA, Janes RW (1995). The crystal structure of human endothelin-1 and how it relates to receptor binding. *J Cardiovasc Pharmacol* **26** Suppl **3**: S250-S253.

Watanabe T, Itoh Y, Ogi K, Kimura C, Suzuki N, Onda H (1989). Synthesis of human endothelin-1 precursors in *Escherichia coli*. *FEBS Lett* **251**: 257-260.

Watanabe TX, Itahara Y, Nakajima K, Kumagaye S, Kimura T, Sakakibara S (1991). The biological activity of endothelin-1 analogues in three different assay systems. *J Cardiovasc Pharmacol* **17**: S5-S9.

Watts A (1999). NMR of drugs and ligands bound to membrane receptors. *Curr Opin Biotechnol* **10**: 48-53.

Wickham TJ, Davis T, Granados RR, Hammer DA, Shuler ML, Wood HA (1991). Baculovirus defective interfering particles are responsible for variations in recombinant protein production as a function of multiplicity of infection. *Biotechnol Lett* **13**: 483-488.

Wiesner B, Beyermann M, Oksche A (2005). Live cell imaging of G protein-coupled receptors. *Methods Mol Biol* **306**: 173-202.

Williams DL Jr, Jones KL, Pettibone DJ, Lis EV, Clineschmidt BV (1991). Sarafotoxin S6c: an agonist which distinguishes between endothelin receptor subtypes. *Biochem Biophys Res Commun* **175**: 556-561.

Williamson PTF, Watts JA, Addona GH, Miller KW, Watts A (2001). Dynamics and orientation of N(CD3)3-bromoacetylcholine bound to its binding site on the nicotinic acetylcholine receptor. *Proc Natl Acad Sci USA* **98**: 2346-2351.

Wise A, Jupe SC, Rees S (2004). The identification of ligands at orphan G-protein coupled receptors. *Annu Rev Pharmacol Toxicol* **44**: 43-66.

Wüthrich K (1986). *NMR of Proteins and Nucleic Acids*. Wiley, New York, NY, USA.

Yanagisawa M, Kurihara H, Kimura S, Tomobe Y, Kobayashi M, Mitsui Y, Yazaki Y, Goto K, Masaki T (1988). A novel potent vasoconstrictor peptide produced by vascular endothelial cells. *Nature* **332**: 411-415.

Yasufuku K, Ohashi H, Katsuta-Enomoto Y, Fukuroda T, Noguchi K, Yano M (1992). High-yield production of recombinant endothelin-1. *J Biochem* **112**: 360-365.

Zemanová L, Schenk A, Hunt N, Nienhaus GU, Heilker R (2004). Endothelin Receptor in Virus-Like Particles: Ligand Binding Observed by Fluorescence Fluctuation Spectroscopy. *Biochemistry* **43**: 9021-9028.

Zhang H, Neal S, Wishart DS (2003). RefDB: A database of uniformly referenced protein chemical shifts. *J Biomol NMR* **25**: 173-195.