



## Publikationen der Arbeitsbereich Experimentelle und Klinische Pharmakologie des Instituts für Experimentelle und Klinische Pharmakologie und Toxikologie

2005, 2006, 2007, 2008, 2009, 2010

### 2010

#### Originalarbeiten

Werner U, Werner D, Heinbüchner S, Graf B, Ince H, Kische S, Thürmann P, König J, Fromm MF, Zolk O. Gender is an important determinant of the disposition of the loop diuretic torasemide. *J Clin Pharmacol* 2010; 50:160-168.

Böger RH, Diemert A, Schwedhelm E, Lüneburg N, Maas R, Hecher K. The role of nitric oxide synthase inhibition by asymmetric dimethylarginine in the pathophysiology of preeclampsia. *Gynecol Obstet Invest* 2010; 69:1-13.

Carrier L, Schlossarek S, Willis MS, Eschenhagen T. Ubiquitin-proteasome system and nonsense-mediated mRNA decay in hypertrophic cardiomyopathy. *Cardiovasc Res* 2010; 85:330-338.

Mearini G, Gedicke C, Schlossarek S, Witt CC, Krämer E, Cao P, Gomes MD, Lecker SH, Labeit S, Willis MS, Eschenhagen T, Carrier L. Atrogin-1 and MuRF1 regulate cardiac MyBP-C levels via different mechanisms. *Cardiovasc Res* 2010; 85:357-366.

### 2009

#### Originalarbeiten

El-Armouche A, Eschenhagen T. Beta-adrenergic stimulation and myocardial function in the failing heart. *Heart Fail Rev* 2009;14:225-241.

Rau T, Wuttke H, Michels LM, Werner U, Bergmann K, Kreft M, Fromm MF, Eschenhagen T. Impact of the CYP2D6 genotype on the clinical effects of Metoprolol: A prospective longitudinal study. *Clin Pharmacol Ther* 2009; 85:269-272.

Greiser M, Neuberger HR, Harks E, El-Armouche A, Boknik P, de Haan S, Verheyen F, Verheule S, Schmitz W, Ravens U, Nattel S, Allessie MA, Dobrev D, Schotten U. Distinct contractile and molecular differences between two goat models of atrial dysfunction: AV-block-induced atrial dilatation and atrial fibrillation. *J Mol Cell Cardiol* 2009; 46:385-394.

Schmechel A, Grimm M, El-Armouche A, Höppner G, Schwoerer AP, Ehmke H, Eschenhagen T. Treatment with atorvastatin partially protects the rat heart from harmful catecholamine effects. *Cardiovasc Res* 2009; 82:100-106.

Johnsen SA, GÜngör C, Prenzel T, Riethdorf S, Riethdorf L, Taniguchi-Ishigaki N, Rau T, Tursun B, Furlow JD, Sauter G, Scheffner M, Pantel K, Gannon F, Bach I. Regulation of estrogen-dependent transcription by the LIM cofactors CLIM and RLIM in breast cancer. *Cancer Res* 2009; 69:128-136.

Schulze F, Vollert J, Maas R, Müller R, Schwedhelm E, Müller C, Böger RH, Möckel M. Asymmetric dimethylarginine predicts outcome and time of stay in hospital in patients attending an internal medicine emergency room. *Clin Chim Acta* 2009; 401:20-24.

Van Dijk SJ, Dooijes D, dos Remedios C, Michels M, Lamers JMJ, Winegrad S, Schlossarek S, Carrier L, ten Cate FJ, Stienen GJM, van der Velden J. Cardiac myosin-binding protein C mutations and hypertrophic cardiomyopathy. Haploinsufficiency, deranged phosphorylation, and cardiomyocyte dysfunction. *Circulation* 2009; 119:1473-1483.

Werner D, Werner U, Wuerfel A, Grosch A, Lestin HG, Eschenhagen T, Rau T. Pharmacogenetic characteristics of patients with complicated phenprocoumon dosing. *Eur J Clin Pharmacol* 2009; 65:783-788.

Friedrich F, Bausero P, Sun Y, Treszl A, Krämer E, Juhr D, Richard P, Wegscheider K, Schwartz K, Brito D, Arbustini E, Waldenström A, Isnard R, Komajda M, Eschenhagen T, Carrier L, for the EUROGENE Heart Failure Project. A new polymorphism in human calmodulin III gene promoter is a potential modifier gene for familial hypertrophic cardiomyopathy. *Eur Heart J* 2009; 30:1648-1655.

Böger RH, Sullivan LM, Schwedhelm E, Wang TJ, Maas R, Benjamin EJ, Schulze F, Xanthakis V, Benndorf RA, RS Vasan. Plasma asymmetric dimethylarginine and incidence of cardiovascular disease and death in the community. *Circulation* 2009; 119:1592-1600.

Pierre S, Eschenhagen T, Geisslinger G, Scholich K. Capturing adenylyl cyclases as potential drug targets. *Nat Rev Drug Discov* 2009; 8:321-335.

Duncker D, Boontje NM, Merkus D, Versteilen A, Krysiak J, Mearini G, El-Armouche A, de Beer VJ, Lamers JMJ, Carrier L, Walker LA, Linke WA, Stienen GJM, van der Velden J. Prevention of myofilament dysfunction by  $\beta$ -blocker therapy in postinfarct remodeling. *Circ Heart Fail* 2009; 2:233-242.

Lieb W, Benndorf RA, Benjamin EJ, Sullivan LM, Maas R, Xanthakis V, Schwedhelm E, Aragam J, Schulze F, Böger RH, Vasan RS. Plasma asymmetric dimethylarginine, L-arginine and left ventricular structure and function in a community-based sample. *Atherosclerosis* 2009; 204:282-287.

Benndorf RA, Krebs C, Hirsch-Hoffmann B, Schwedhelm E, Cieslar G, Schmidt-Haupt R, Steinmetz OM, Meyer-Schwesinger C, Thaiss F, Haddad M, Fehr S, Heilmann A, Helmchen U, Hein L, Ehmke H, Stahl RA, Böger RH, Wenzel UO. Angiotensin II type 2 receptor deficiency aggravates renal injury and reduces survival in chronic kidney disease in mice. *Kidney International* 2009; 75:1039-1049.

Sibal L, Agarwal SC, Schwedhelm E, Lüneburg N, Böger RH, Home PD. A study of endothelial function and circulating asymmetric dimethylarginine levels in people with Type I diabetes without macrovascular disease or microalbuminuria. *Cardiovascular Diabetology* 2009; 8:27.

Vignier N, Schlossarek S, Fraysse B, Mearini G, Krämer E, Pointu H, Mougnot N, Guiard J, Reimer R, Hohenberg H, Schwartz K, Vernet M, Eschenhagen T, Carrier L. Nonsense-mediated mRNA decay and ubiquitin-proteasome system regulate cardiac myosin-binding protein C mutant levels in cardiomyopathic mice.

Circ Res 2009; 105:239-248.

Schulze F, Glos S, Petruschka D, Altenburg C, Maas R, Benndorf R, Schwedhelm E, Beil U, Böger RH.

L-Arginine enhances the triglyceride-lowering effect of simvastatin in patients with elevated plasma triglycerides.

Nutrition Research 2009; 29:291-297.

Schwedhelm E, Xanthakis V, Maas R, Sullivan LM, Schulze F, Riederer U, Benndorf RA, Böger RH, Vasani RS. Asymmetric dimethylarginine reference intervals determined with liquid chromatography - Tandem mass spectrometry: Results from the Framingham Offspring Cohort.

Clin Chem 2009; 55:1539-1545.

Pikula A, Böger RH, Beiser AS, Maas R, DeCarli C, Schwedhelm E, Himali JJ, Schulze F, Au R, Kelly-Hayes M, Kase CS, Vasani RS, Wolf PA, Seshadri S. Association of plasma ADMA levels with MRI markers of vascular brain injury. Framingham Offspring Study.

Stroke 2009; 40:2959-2964.

Bergmann IP, Böger RH, Marti E, Frey FJ, Schwedhelm E, Eisenberger U. Renal resistance index in renal allograft recipients: A role for ADMA.

Am J Kidney Dis 2009; 54:327-333.

Ostad MA, Eggeling S, Tschentscher P, Schwedhelm E, Böger R, Wenzel P, Meinertz T, Münzel T, Warnholtz A. Flow-mediated dilation in patients with coronary artery disease is enhanced by high dose atorvastatin compared to combined low dose atorvastatin and ezetimibe: Results of the CEZAR study. Atherosclerosis 2009; 205:227-232.

Leypoldt F, Choe C-U, Gelderblom M, von Leitner E-C, Atzler D, Schwedhelm E, Gerloff C, Sydow K, Böger RH, Magnus T. Dimethylarginine dimethylaminohydrolase-1 transgenic mice are not protected from ischemic stroke.

PLoS ONE 2009; 4(11):e7337

Choe C-U, Lewerenz J, Fischer G, Ulasz TF, Espey MG, Hummel FC, King SB, Schwedhelm E, Böger RH, Gerloff C, Hewett SJ, Magnus T, Donzelli S. Nitroxyl exacerbates ischemic cerebral injury and oxidative neurotoxicity.

J Neurochem 2009; 110:1766-1773.

Broedbaek K, Poulsen HE, Weimann A, Kom GD, Schwedhelm E, Nielsen P, Böger RH. Urinary excretion of biomarkers of oxidatively damaged DNA and RNA in hereditary hemochromatosis.

Free Radical Biology & Medicine 2009; 47:1230-1233.

Weiss J, Sauer A, Herzog M, Böger RH, Haefeli WE, Benndorf RA. Interaction of thiazolidinediones (glitazones) with the ATP-binding cassette transporters P-glycoprotein and breast cancer resistance protein.

Pharmacology 2009; 84:264-270.

Böger RH. Asymmetric dimethylarginine: Understanding the physiology, genetics, and clinical relevance of this novel biomarker. Proceedings of the 4<sup>th</sup> International Symposium on ADMA.

Pharmacol Res 2009; 60:447.

Maas R, Böger R, Lüneburg N. ADMA and the role of the genes: Lessons from genetically modified animals and human gene polymorphisms.

Pharmacol Res 2009; 60:475-480.

Böger RH, Maas R, Schulze F, Schwedhelm E. Asymmetric dimethylarginine (ADMA) as a prospective marker of cardiovascular disease and mortality – An update on patient populations with a wide range of cardiovascular risk.

Pharmacol Res 2009; 60:481-487.

Maas R, Erdmann J, Lüneburg N, Stritzke J, Schwedhelm E, Meisinger C, Peters A, Weil J, Schunkert H, Böger RH, Lieb W. Polymorphisms in the promoter region of the dimethylarginine dimethylaminohydrolase 2 gene are associated with prevalence of hypertension. *Pharmacol Res* 2009; 60:488-493.

Schwedhelm E, von Leitner E-C, Atzler D, Schmitz C, Jacobi J, Meinertz T, Münzel T, Baldus S, Cooke JP, Böger RH, Maas R, Sydow K. Extensive characterization of the human DDAH1 transgenic mice. *Pharmacol Res* 2009; 60:494-502.

Deuse T, Peter C, Fedak PWM, Doyle T, Reichenspurner H, Zimmermann WH, Eschenhagen T, Stein W, Wu JC, Robbins RC, Schrepfer S. Hepatocyte growth factor or vascular endothelial growth factor gene transfer maximizes mesenchymal stem cell-based myocardial salvage after acute myocardial infarction. *Circulation* 2009; 120[suppl 1]:S247-S254.

Reimann M, Ziemssen T, Huisman HW, Schutte R, Malan L, Van Rooyen JM, Böger RH, Malan NT, Schutte AE. Ethnic-specific correlations of visfatin with circulating markers of endothelial inflammation and function. *Obesity* 2009; 17:2210-2215.

Hu X, Xu X, Guangshuo Z, Atzler D, Kimoto M, Chen J, Schwedhelm E, Lüneburg N, Böger RH, Zhang P, Chen Y. Vascular endothelial-specific dimethylarginine dimethylaminohydrolase-1-deficient mice reveal that vascular endothelium plays an important role in removing asymmetric dimethylarginine. *Circulation* 2009; 120:2222-2229.

Aucella F, Maas R, Vigilante M, Tripepi G, Schwedhelm E, Margaglione M, Gesualdo L, Boeger R, Zoccali C. Methylarginines and mortality in patients with end stage renal disease: A prospective cohort study. *Atherosclerosis* 2009; 207:541-545.

Maas R, Xanthakis V, Polak JF, Schwedhelm E, Sullivan LM, Benndorf R, Vasani RS, Wolf PA, Schulze F, Böger RH, Seshadri S. Association of the endogenous nitric oxide synthase inhibitor ADMA with carotid artery intimal media thickness in the Framingham Heart Study Offspring Cohort. *Stroke* 2009; 40:2715-2719.

Rudolph V, Rudolph TK, Kubala L, Claubert N, Maas R, Pekarova M, Klinker A, Lau D, Szöcs K, Meinertz T, Böger RH, Baldus S. A myeloperoxidase promoter polymorphism is independently associated with mortality in patients with impaired left ventricular function. *Free Radic Biol Med*. 2009; 47:1584-1590.

Schulze F, Carter AM, Schwedhelm E, Ajjan R, Maas R, von Holtzen RA, Atzler D, Grant PJ, Böger RH. Symmetric dimethylarginine predicts all-cause mortality following ischemic stroke. *Atherosclerosis* 2009; *in press*.

## **Übersichten**

Carrier L. European Perspectives in Cardiology. Spotlight: Lucie Carrier. *Circulation* 2009; 120:f25-f27.

Eschenhagen T. Pharmakogenetik des adrenergen Systems – vorhersehbare Wirkungen und Nebenwirkungen? *Der Bayr. Int.* 2009; 29(1):1-7.

Eschenhagen T. Pharmakogenetik des adrenergen Systems – vorhersehbare Wirkungen und Nebenwirkungen? *Herzmedizin* 2009; 26(1):14-20.

Rau T. Pharmakogenetik oraler Vitamin-K-Antagonisten: neues Licht auf vertraute Probleme. *Herzmedizin* 2009; 26(1):21-26.

Eschenhagen T. Medikamentöse Therapie der Herzinsuffizienz. Kompendium Herz-Kreislauf 2009; 5(1):6-8.

Hansen A, Eschenhagen T. Rauchstopp: Helfen Medikamente? Sonderdruck Deutsche Herzstiftung Juni 2009; 7-11.

Friedrich F, Eschenhagen T. Fingolimod – ein neuer Immunmodulator. Dtsch Med Wochenschr 2009; 134:2127-2131.

Zimmermann W-H, Eschenhagen T. Wie wichtig sind Medikamente? Sonderheft Deutsche Stiftung für Herzforschung „Das schwache Herz“; Diagnose und Therapie der Herzinsuffizienz heute. Okt. 2009;39-45.

## 2008

### Originalarbeiten

Schwedhelm E, Maas R, Freese R, Jung D, Lukacz Z, Jambrecina A, Schulze F, Böger RH. Pharmacokinetic and pharmacodynamic properties of oral L-citrulline and L-arginine: Impact on nitric oxide metabolism. Br J Clin Pharmacol 2008; 65:51-59.

Eijssen LMT, van den Bosch BJC, Vignier N, Lindsey PJ, van den Burg CMM, Carrier L, Doevendans PA, van der Vusse GJ, Smeets HJM. Altered myocardial gene expression reveals maladaptive processes in cardiac myosin binding protein C knockout mice. Genomics 2008; 91:52-60.

Zhang YH, Zhang MH, Sears CE, Emanuel K, Redwood C, El-Armouche A, Kranias EG, Casadei B. Reduced phospholamban phosphorylation is associated with impaired relaxation in left ventricular myocytes from neuronal NO synthase-deficient mice. Circ Res 2008; 102:242-249.

Krüger M, Sachse C, Zimmermann WH, Eschenhagen T, Klede S, Linke WA. Thyroid hormone regulates developmental titin isoform transitions via the phosphatidylinositol-3-kinase/AKT pathway. Circ Res 2008; 102: 439-447.

Maas R, Schwedhelm E, Kahl L, Li H, Benndorf R, Lüneburg N, Förstermann U, Böger RH. Simultaneous assessment of endothelial function, nitric oxide synthase activity, nitric oxide-mediated signaling, and oxidative stress in individuals with and without hypercholesterolemia. Clin Chem 2008; 54: 292-300.

Böger RH. L-Arginine therapy in cardiovascular pathologies: beneficial or dangerous? Curr Opin Clin Nutr Metab Care 2008; 11:55-61.

Wasmeier GH, Zimmermann WH, Schineis N, Melnychenko I, Voigt JU, Eschenhagen T, Flachskampf FA, Daniel WG, Nixdorff U. Real-time myocardial contrast echocardiography for assessing perfusion and function in healthy and infarcted wistar rats. Ultrasound Med Biol 2008; 34:47-55.

Hüllner MW, Schrepfer S, Weyand M, Weiner H, Wimplinger I, Eschenhagen T, Rau T. Inhibition of aldehyde dehydrogenase type 2 attenuates vasodilatory action of nitroglycerin in human veins. FASEB 2008; 22:2561-2568.

Jacobi J, Maas R, Cordasic N, Koch K, Schmieder RE, Böger RH, Hilgers KF. Role of asymmetric dimethylarginine for angiotensin II-induced target organ damage in mice. Am J Physiol Heart Circ Physiol 2008; 294:H1058-H1066.

Pexa A, Böger RH, Henle T, Schwedhelm E, Deussen A. Effects of moderate hyperhomocysteinaemia induced by 4 weeks methionine-enriched diet on metabolite profile and mesenteric artery function in rats. Brit J Nutr 2008; 99:993-999.

Schwörer A, Melnychenko I, Goltz D, Hedinger N, Broichhausen I, El-Armouche A, Eschenhagen T, Volk T, Ehmke H. Unloaded rat hearts in vivo express a hypertrophic phenotype of cardiac repolarization.

J Mol Cell Cardiol 2008; 45:633-641.

Lecarpentier Y, Vignier N, Oliviero P, Guellich A, Cortes-Morichetti M, Carrier L, Coirault C. Cardiac myosin-binding protein C modulates the tuning of the molecular motor in the heart.

Biophys J 2008; 95:720-728.

Bierend A, Rau T, Maas R, Schwedhelm E, Böger RH. P2Y(12) polymorphisms and antiplatelet effects of aspirin in patients with coronary artery disease.

Br J Clin Pharmacol 2008; 65:540-547.

Benndorf RA, Böger RH. Pleiotropic effects of telmisartan: still more to come?

J Hypertens 2008; 26:854-856.

Galle J, Schwedhelm E, Pinnetti S, Böger RH, Wanner C (VIVALDI). Antiproteinuric effects of angiotensin receptor blockers: telmisartan versus valsartan in hypertensive patients with type 2 diabetes mellitus and overt nephropathy.

Nephrol Dial Transplant 2008; 23:3174-3183.

Solbach TF, Paulus B, Weyand M, Eschenhagen T, Zolk O, Fromm MF. ATP-binding cassette transporters in human heart failure.

Naunyn-Schmiedeberg's Arch Pharmacol 2008; 377:231-243.

Kockskämper J, Khafaga M, Grimm M, Elgner A, Walther S, Kockskämper A, von Lewinski D, Post H, Grossmann M, Dörge H, Gottlieb PA, Sachs F, Eschenhagen T, Schündube FA, Pieske B.

Angiotensin II and myosin light-chain phosphorylation contribute to the stretch-induced slow force response in human atrial myocardium.

Cardiovasc Res 2008; 79:642-651.

Kockskämper J, von Lewinski D, Khafaga M, Elgner A, Grimm M, Eschenhagen T, Gottlieb PA, Sachs F, Pieske B. The slow force response to stretch in atrial and ventricular myocardium from human heart: Functional relevance and subcellular mechanisms.

Prog Biophys Mol Biol 2008; 97:250-267.

Grote-Wessels S, Baba HA, Boknik P, El-Armouche A, Fabritz L, Gillmann HJ, Kucerova D, Matus M, Müller FU, Neumann J, Schmitz M, Stümpel F, Theilmeier G, Wohlschlaeger J, Schmitz W, Kirchhefer U. Inhibition of protein phosphatase 1 by inhibitor-2 exacerbates progression of cardiac failure in a model with pressure overload.

Cardiovasc Res 2008; 79:464-471.

Düngen H-D, Apostolovic S, Inkrot S, Tahirovic E, Krackhardt F, Pavlovic M, Putnikovic B, Lainscak M, Gelbrich G, Edelmann F, Wachter R, Eschenhagen T, Waagstein F, Follath F, Rauchhaus M, Haverkamp W, Osterziel K-J, Dietz R on behalf of the CIBIS-ELD investigators. Bisoprolol vs. carvedilol in elderly patients with heart failure: rationale and design of the CIBIS-ELD trial.

Clin Res Cardiol 2008; 97:578-586.

Arlt S, Schulze F, Eichenlaub M, Maas R, Lehmebeck JT, Schwedhelm E, Jahn H, Böger RH.

Asymmetrical dimethylarginine is increased in plasma and decreased in cerebrospinal fluid of patients with Alzheimer's disease.

Dement Geriatr Cogn Disord 2008; 26:58-64.

Mearini G, Schlossarek S, Willis MS, Carrier L. The ubiquitin-proteasome system in cardiac dysfunction.

Biochim Biophys Acta 2008; 1782(12):749-763.

El-Armouche A, Wittköpper K, Degenhardt F, Weinberger F, Didié M, Melnychenko I, Grimm M, Peeck M, Zimmermann WH, Unsöld B, Hasenfuss G, Dobrev D, Eschenhagen T. Phosphatase inhibitor-1-deficient mice are protected from catecholamine-induced arrhythmias and myocardial hypertrophy.

Cardiovasc Res 2008; 80:396-406.

Zolk O, Solbach TF, Eschenhagen T, Weidemann A, Fromm MF. Activation of negative regulators of the hypoxia-inducible factor (HIF) pathway in human end-stage heart failure. *Biochem Biophys Res Commun* 2008; 376:315-320.

Bahrudin U, Morisaki H, Morisaki T, Ninomiya H, Higaki K, Nanba E, Igawa O, Takashima S, Mizuta E, Miake J, Yamamoto Y, Shirayoshi Y, Kitakaze M, Carrier L, Hisatome I. Ubiquitin-proteasome system impairment caused by a missense cardiac myosin-binding protein C mutation and associated with cardiac dysfunction in hypertrophic cardiomyopathy. *J Mol Biol* 2008; 384:896-907.

Benndorf RA, Schwedhelm E, Gnann A, Taheri R, Kom G, Didié M, Steenpass A, Ergün S, Böger RH. Isoprostanes inhibit vascular endothelial growth factor-induced endothelial cell migration, tube formation, and cardiac vessel sprouting in vitro, as well as angiogenesis in vivo via activation of the thromboxane A<sub>2</sub> receptor. *Circ Res* 2008; 103:1037-1046.

Schwoerer AP, Neuber C, Schmechel A, Melnychenko I, Mearini G, Boknik P, Kirchhefer U, Schmitz W, Ehmke H, Eschenhagen T, El-Armouche A. Mechanical unloading involves marked changes in the kinase-phosphatase balance. *J Mol Cell Cardiol* 2008; 45:846-852.

Köllermann J, Weikert S, Schostak M, Kempkensteffen C, Kleinschmidt K, Rau T, Pantel K. Prognostic significance of disseminated tumor cells in the bone marrow of prostate cancer patients treated with neoadjuvant hormone treatment. *J Clin Oncol* 2008; 26:4928-4933.

Schneider C, Krause K, Jaquet K, Geidel S, Malisius R, Boczor S, Rau T, Zienkiewicz T, Hennig D, Kuck KH. Intramyocardial transplantation of bone marrow-derived stem cells: ultrasonic strain rate imaging in a model of hibernating myocardium. *J Card Fail* 2008; 14:861-872.

## Übersichten

Eschenhagen T.  $\beta$ -adrenergic signaling in heart failure – adapt or die. *Nat Med* 2008; 14:485-487.

Hansen A, Eschenhagen T. Rauchstopp: Helfen Medikamente? *Herz heute* 2008; 3/2008:10-14.

Zimmermann W-H, Eschenhagen T. Herzschwäche: Wie wichtig sind Medikamente? *Herz heute* 2008; 4/2008:8-13.

Wittköpper K, El-Armouche A, Eschenhagen T. Olanzapin. *DMW* 2008; 133:1958-1962.

Eschenhagen T, Rau T. Zahlreiche Innovationen: Sind Sie up to date? *MMW-Fortschr Med* 2008; 48:131-134.

Pergolizzi J, Böger RH, Budd K, Dahan A, Erdine S, Hans G, Kress HG, Langford R, Likar R, Raffa RB, Sacerdote P. Opioids and the management of chronic severe pain in the elderly: consensus statement of an international expert panel with focus on the six clinically most often used WHO step III opioids (buprenorphine, fentanyl, hydromorphone, methadone, morphine, oxycodone). *Pain Practice* 2008; 8:287-313.

**2007**

**Originalarbeiten**

Schrepfer S, Deuse T, Sultan KR, Haddad M, Böger RH, Münzel T, Schäfer H, Pelletier MP, Robbins RC, Reichenspurner H. Inhibition of restenosis development after mechanical injury: a new field of application for malononitrilamides ?  
Cardiology 2007; 108:128-137.

Warnholtz A, Ostad MA, Heitzer T, Thüneke F, Fröhlich M, Tschentscher P, Schwedhelm E, Böger RH, Meinertz T, Münzel T. AT1-receptor blockade with irbesartan improves peripheral but not coronary endothelial dysfunction in patients with stable coronary artery disease.  
Atherosclerosis 2007; 194:439-445.

Kom GD, Schwedhelm E, Maas R, Schneider L, Benndorf R, Böger RH. Impact of atorvastatin treatment on platelet activating factor acetylhydrolase and 15-F<sub>2trans</sub>-isoprostane in hypercholesterolemic patients.  
Br J Clin Pharmacol 2007; 63:672-679.

Benndorf RA, Gehling UM, Appel D, Maas R, Schwedhelm E, Schlagner K, Silberhorn E, Hossfeld DK, Rogiers X., Böger RH. Mobilization of putative high-proliferative-potential endothelial colony-forming cells during antihypertensive treatment in patients with essential hypertension.  
Stem Cells Dev 2007; 16:329-338.

Bajcetic M, Benndorf RA, Appel D, Schwedhelm E, Schulze F, Riekhof D, Maas R, Böger RH. Pharmacokinetics of oral doses of telmisartan and nisoldipine, given alone and in combination, in patients with essential hypertension.  
J Clin Pharmacol 2007; 47:295-304.

Zoccali C, Maas R, Cutrupi S, Pizzini P, Finocchiaro P, Cambareri F, Panuccio V, Martorano C, Schulze F, Tripepi G, Böger RH. Asymmetric dimethylarginine (ADMA) response to inflammation in acute infections.  
Nephrol Dial Transplant 2007; 22:801-806.

Maas R, Tan-Andresen J, Schwedhelm E, Schulze F, Böger RH. A stable-isotope based technique for the determination of dimethylarginine dimethylaminohydrolase (DDAH) activity in mouse tissue.  
J Chromatogr B 2007; 851:220-228.

Maas R, Schulze F, Baumert J, Löwel H, Hamraz K, Schwedhelm E, Koenig W, Böger RH. Asymmetric dimethylarginine (ADMA), smoking and risk of coronary heart disease in apparently healthy men: Prospective analysis from the population-based MONICA/KORA Augsburg Study and experimental data.  
Clin Chem 2007; 53:4; 53(4):693-701.

Maas R, Quitzau K, Schwedhelm E, Spieker L, Rafflenbeul W, Steenpaß A, Lüscher TL, Böger RH. Asymmetrical dimethylarginine (ADMA) and coronary endothelial function in patients with coronary artery disease and mild hypercholesterolemia.  
Atherosclerosis 2007; 191:211-219.

Schwedhelm E, Maas R, Tan-Andresen J, Schulze F, Riederer U, Böger RH. High-throughput liquid chromatographic-tandem mass spectrometric determination of arginine and dimethylated arginine derivatives in human and mouse plasma.  
J Chromatogr B 2007; 851:211-219

Garcia RG, Perez M, Maas R, Schwedhelm E, Böger RH, Lopez-Jaramillo P. Plasma concentrations of asymmetric dimethylarginine (ADMA) in metabolic syndrome.  
Int J Cardiol 2007; 122:176-178.

Weber T, Maas R, Auer J, Lamm G, Lassnig E, Rammer M, O'Rourke MF, Böger RH, Eber B. Arterial wave reflections and determinants of endothelial function.  
AJH 2007; 20:256-262.

Böger RH. The pharmacodynamics of L-arginine<sup>1-3</sup>.  
J Nutr 2007; 137:1650S-1655S.

Riethdorf S, Fritsche H, Müller V, Rau T, Schindlbeck C, Rack B, Janni W, Coith C, Beck K, Jänicke F, Jackson S, Gornet T, Cristofanilli M, Pantel K. Detection of circulating tumor cells in peripheral blood of patients with metastatic breast cancer: A validation study of the CellSearch system.  
Clin Cancer Res 2007; 13: 920-928.

Schneider C, Jaquet K, Malisius R, Geidel S, Bahlmann E, Boczor S, Rau T, Antz M, Kuck K-H, Krause K. Attenuation of cardiac remodelling by endocardial injection of erythropoietin: ultrasonic strain-rate imaging in a model of hibernating myocardium.  
Eur Heart J 2007; 28:499-509.

Wasmeier GH, Melnychenko I, Voigt JU, Zimmermann WH, Eschenhagen T, Schineis N, Reulbach U, Flachskampf FA, Daniel WG, Nixdorff U. Reproducibility of transthoracic echocardiography in small animals using clinical equipment.  
Coron Artery Dis 2007; 18:283-291.

Grimm M, El-Armouche A, Zhang R, Anderson ME, Eschenhagen T. Reduced contractile response to alpha1-adrenergic stimulation in atria from mice with chronic cardiac calmodulin kinase II inhibition.  
J Mol Cell Cardiol 2007; 42:643-652.

Hippe HJ, Lüdde M, Lutz S, Köhler H, Eschenhagen T, Frey N, Katus HA, Wieland T, Niroomand F. Regulation of cardiac cAMP synthesis and contractility by nucleoside diphosphate kinase B/G protein beta gamma dimer complexes.  
Circ Res 2007; 100:1191-1199.

El-Armouche A, Pohlmann L, Schlossarek S, Starbatty J, Yeh YH, Nattel S, Dobrev D, Eschenhagen T, Carrier L. Decreased phosphorylation levels of cardiac myosin-binding protein-C in human and experimental heart failure.  
J Mol Cell Cardiol 2007; 43:223-229.

El-Armouche A, Singh J, Naito H, Wittköpper K, Didié M, Laatsch A, Zimmermann WH, Eschenhagen T. Adenovirus-delivered short hairpin RNA targeting PKCalpha improves contractile function in reconstituted heart tissue.  
J Mol Cell Cardiol 2007; 43:371-376.

Pohlmann L, Kröger I, Vignier N, Schlossarek S, Krämer E, Coirault C, Sultan KR, El-Armouche A, Winegrad S, Eschenhagen T, Carrier L. Cardiac myosin-binding protein C is required for complete relaxation intact myocytes.  
Circ Res 2007;101:928-938.

Yildirim Y, Naito H, Didié M, Karikkineth BC, Biermann D, Eschenhagen T, Zimmermann WH. Development of a biological ventricular assist device: preliminary data from a small animal model.  
Circulation 2007; 116:116-23.

Böger GI, Rudolph TK, Maas R, Schwedhelm E, Dumbadze E, Bierend A, Benndorf RA, Böger RH. Asymmetric dimethylarginine determines the improvement of endothelium-dependent vasodilation by simvastatin.  
J Am Coll Cardiol 2007; 49:2274-2282.

Maas R, Dentz L, Schwedhelm E, Thoms W, Kuss O, Hiltmeyer N, Haddad M, Klöss T, Standl T, Böger RH. Elevated plasma concentrations of the endogenous nitric oxide synthase inhibitor asymmetric dimethylarginine predict adverse events in patients undergoing noncardiac surgery.  
Crit Care Med 2007; 35:1-6 [Epub ahead of print].

Maas R, Baschat A, Hecher K, Böger RH. Asymmetrisches Dimethylarginin (ADMA): Ein endogener Hemmstoff der NO-Synthase – und auch ein Risikomarker der Präeklampsie?  
Geburtsh Frauenheilk 2007; 67:611-619.

Reimann M, Schutte AE, Malan NT, Schwarz PEH, Benndorf RA, Schulze F, Böger RH. Asymmetric dimethylarginine is associated with parameters of glucose metabolism in Caucasian but not in African women from South Africa.  
Exp Clin Endocrinol Diabetes 2007; 115:600-605.

Rudolph TK, Ruempler K, Schwedhelm E, Tan-Andresen J, Riederer U, Böger RH, Maas R. Acute effects of various fast-food meals on vascular function and cardiovascular disease risk markers: the Hamburg Burger Trial<sup>1-3</sup>.  
Am J Clin Nutr 2007; 86:334-340.

Schwedhelm E, Benndorf RA, Böger RH, Tsikas D. Mass spectrometric analysis of F<sub>2</sub>-isoprostanes: Markers and mediators in human disease.  
Curr Pharm Analysis 2007; 3:39-51.

Benndorf RA, Appel D, Maas R, Schwedhelm E, Wenzel UO, Böger RH. Telmisartan improves endothelial function in patients with essential hypertension.  
J Cardiovasc Pharmaol 2007; 50:367-371.

El-Armouche A, Gocht F, Jaeckel E, Wittköpper K, Peeck M, Eschenhagen T. Long-term beta-adrenergic stimulation leads to downregulation of protein phosphatase inhibitor-1 in the heart.  
Eur J Heart Fail 2007; 9:1077-1080.

## Übersichten

Carrier L. Cardiac myosin-binding protein C in the heart.  
Arch Mal Coeur Vaiss 2007; 100:238-243.

Zimmermann WH, Eschenhagen T. Embryonic stem cells for Cardiac muscle engineering.  
Trends Cardiovasc Med 2007; 17:135-140.

Rau T, Eschenhagen T. Aldosteron und Aldosteronrezeptorantagonisten in der Herzinsuffizienztherapie.  
Clin Res Cardiol 2007; 2 (Suppl 1):55-64.

Eschenhagen T. Kommentar zum vorläufigen Abschlussbericht des IQWiG zur medikamentösen Therapie der arteriellen Hypertonie.  
Clin Res Cardiol 2007; 2 (Suppl):144-146.

El-Armouche A, Rau T, Eschenhagen T. Dopaminagonisten – nicht alle sind gleich!  
Dtsch Med Wochenschr 2007; 132 (12):598.

El-Armouche A, Eschenhagen T. Dopamin: geringer Stellenwert in der Notfallmedizin?  
Dtsch Med Wochenschr 2007; 132:2654.

Eschenhagen T. Stammzellen.  
Herz heute 2007; 1/2007:31.

Tousoulis D, Böger RH, Antoniades C, Siasos G, Stefanadi E, Stefanadis C. Mechanisms of disease: L-arginine in coronary atherosclerosis – a clinical perspective.  
Nature Clin Pract Cardiovasc Med 2007; 4:274-283.

Zimmermann WH, Tiburcy M, Eschenhagen T. Cardiac tissue engineering: a clinical perspective.  
Future Cardiol 2007; 3:435-445.

Eschenhagen T. Die häufigsten Fehlerquellen beim Verschreiben von Arzneimitteln.  
KVH aktuell 2007; 12(4):16-20.

Böger RH. Die Schwangerschaftshypertonie: Über die Bedeutung der endothelialen Stickstoffmonoxid-Bildung bei Präeklampsie – Rolle von ADMA für die Diagnostik und L-Arginin für die Prävention.  
REPORT Naturheilkunde 2007; 11(6):19-26.

**2006**

**Originalarbeiten**

Cazorla O, Szilagyi S, Vignier N, Salazar G, Krämer E, Vassort G, Carrier L, Lacampagne A. Length and PKA modulation of cardiac myofilaments in cardiac myosin-binding protein C deficient mice. *Cardiovasc Res* 2006; 69:370-380.

Kom GD, Schwedhelm E, Nielsen P, Böger RH. Increased urinary excretion of 8-iso-prostaglandin F2 $\alpha$  in patients with HFE-related hemochromatosis. A case-control study. *Free Rad Biol Med* 2006; 40:1194-1200.

Zimmermann WH, Melnychenko I, Wasmeier G, Didié M, Naito H, Nixdorff U, Hess A, Budinsky L, Brune K, Michaelis B, Dhein S, Schwoerer A, Ehmke H, Eschenhagen T. Engineered heart tissue grafts improve systolic and diastolic function in infarcted rat hearts. *Nat Med* 2006; 12:452-458.

Mühlhäuser U, Zolk O, Rau T, Münzel F, Wieland T, Eschenhagen T. Atorvastatin desensitizes beta-adrenergic signaling in cardiac myocytes via reduced isoprenylation of G-protein gamma-subunits. *FASEB J* 2006; 20:785-787.

Weil J, Zolk O, Griepentrog J, Wenzel U, Zimmermann WH, Eschenhagen T. Alterations of the preproenkephalin system in cardiac hypertrophy and its role in atrioventricular conduction. *Cardiovasc Res* 2006; 69:412-422.

Böger RH. Asymmetric dimethylarginine (ADMA): A novel risk marker in cardiovascular medicine and beyond. *Ann Med* 2006; 38:126-136.

Naito H, Melnychenko I, Didié M, Schneiderbanger K, Schubert P, Rosenkranz S, Eschenhagen T, Zimmermann W-H. Optimizing engineered heart tissue for therapeutic applications as surrogate heart muscle. *Circulation* 2006; 114[suppl I]:I-72-I-78.

Meyer zu Schwabedissen C, Mevissen V, Schmitz F, Woodruff S, Langebartels G, Rau T, Zerres K, Hoffmann R, Ortlepp JR. Obesity is associated with a slower response to initial phenprocoumon therapy whereas CYP2C9 genotypes are not. *Eur J Clin Pharmacol* 2006; [Epub ahead of print]

Lilje C, Rázek V, Joyce JJ, Rau T, Finckh BF, Weiss F, Habermann CR, Rice JC, Weil J. Complications of non-compaction of the left ventricular myocardium in a paediatric population: a prospective study. *Eur Heart J* 2006; 27:1855-1860.

El-Armouche A, Boknik P, Eschenhagen T, Carrier L, Knaut M, Ravens U, Dobrev D. Molecular determinants of altered Ca<sup>2+</sup> handling in human chronic atrial fibrillation. *Circulation* 2006; 114:670-680.

Grimm M, Mahnecke N, Soja F, El-Armouche A, Haas P, Treede H, Reichenspurner H, Eschenhagen T. The MLCK-mediated  $\alpha(1)$ -adrenergic inotropic effect in atrial myocardium is negatively modulated by PKC $\epsilon$  signaling. *Br J Pharmacol* 2006; 148:991-1000.

El-Armouche A, Bednorz A, Pamminger T, Ditz D, Didié M, Dobrev D, Eschenhagen T. Role of calcineurin and protein phosphatase-2A in the regulation of phosphatase inhibitor-1 in cardiac myocytes. *Biochem Biophys Res Commun* 2006; 346:700-706.

Sahin B, Shu H, Fernandez J, El-Armouche A, Molkentin JD, Nairn AC, Bibb JA. Phosphorylation of protein phosphatase inhibitor-1 by protein kinase C. *J Biol Chem* 2006; [Epub ahead of print]

Benndorf RA, Rudolph T, Appel D, Schwedhelm E, Maas R, Schulze F, Silberhorn E, Böger RH. Telmisartan improves insulin sensitivity in nondiabetic patients with essential hypertension. *Metabolism* 2006; 55:1159-1164.

Schulze F, Lenzen H, Hanefeld C, Bartling A, Osterziel KJ, Goudeva L, Schmidt-Lucke C, Kusus M, Maas R, Schwedhelm E, Strödter D, Simon BC, Mügge A, Daniel WG, Tillmanns H, Maisch B, Streichert T, Böger RH. Asymmetric dimethylarginine is an independent risk factor for coronary heart disease: Results from the multicenter coronary artery risk determination investigating the influence of ADMA concentration (CARDIAC) study. *Am Heart J* 2006; 152:493.e1-493.e8.

Cracowski JL, Kom GD, Salvat-Melis M, Renversez JP, McCord G, Boignard A, Carpentier PH, Schwedhelm E. Postocclusive reactive hyperemia inversely correlates with urinary 15-F<sub>2t</sub>-isoprostane levels in systemic sclerosis. *Free Rad Biol Med* 2006; 40:1732-1737.

Rau T, Erney B, Göres R, Eschenhagen T, Beck J, Langer T. High-dose methotrexate in pediatric acute lymphoblastic leukemia: Impact of *ABCC2* polymorphisms on plasma concentrations. *Clin Pharmacol Ther* 2006; 80:468-476.

Rau T, Diepenbruck S, Diepenbruck I, Eschenhagen T. The 2988G>A polymorphism affects splicing of a CYP2D6 minigene. *Clin Pharmacol Ther* 2006; 80:555-558.

Heitzer T, Baldus S, Schwedhelm E, Sydow K, Karstens M, Rudolph V, Tschentscher P, Meinertz T, Böger RH. Clopidogrel improves systemic endothelial nitric oxide bioavailability in patients with coronary artery disease. Evidence for anti-oxidant and anti-inflammatory effects. *Arterioscler Thromb Vasc Biol* 2006; 26:1648-1652.

Patten M, Maas R, Karim A, Muller HW, Simonovsky R, Meinertz T. Event-recorder monitoring in the diagnosis of atrial fibrillation in symptomatic patients: subanalysis of the SOPAT trial. *J Cardiovasc Electrophysiol* 2006; 17:1216-1220.

## Übersichten

Lenzen H, Tsikas D, Böger RH. Asymmetric dimethylarginine (ADMA) and the risk for coronary heart disease: the multicenter CARDIAC study. *Eur J Clin Pharmacol* 2006; 62:45-49.

Eschenhagen T. Trotz aller Leitlinien: Absetzen mindert das Risiko. *KVH aktuell* 2006; 1:16-19.

Eschenhagen T. Betablocker: Wie gut sind sie? *Herz heute* 2006; 1/2006:7-9.

Zimmermann W-H, Didié M, Döker S, Melnychenko I, Naito H, Rogge C, Tiburcy M, Eschenhagen T. Heart muscle engineering: An update on cardiac muscle replacement therapy. *Cardiovasc Res* 2006; 71:419-429.

Böger RH. Letter to the editor re: JAMA article on L-arginine therapy in acute myocardial infarction. *Altern Med Rev* 2006; 11:91-92.

Böger RH. Renal impairment: a challenge for opioid treatment? The role of buprenorphine. *Palliat Med* 2006; 20 Suppl 1:s17-23.

Meinertz T, Eschenhagen T.  $\beta$ -Rezeptorenblocker bei kardiovaskulären Erkrankungen. *Clin Res Cardiol* 2006; Suppl 1, 43-54.

Eschenhagen T, Zimmermann WH, Kleber AG. Electrical coupling of cardiac myocyte cell sheets to the heart. *Circ Res* 2006; 98:573-575.

Böger RH. Live and let die: asymmetric dimethylarginine and septic shock. *Crit Care* 2006; 10:169

2005

### Originalarbeiten

Grimm M, Haas P, Willipinski-Stapelfeldt B, Zimmermann W-H, Rau T, Pantel K, Weyand M, Eschenhagen T. Key role of myosin light chain (MLC) kinase-mediated MLC2a phosphorylation in the  $\alpha_1$ -adrenergic positive inotropic effect in human atrium. *Cardiovasc Res* 2005; 65:211-220.

Vu Manh TP, Mokrane M, Georgenthum E, Flavigny J, Carrier L, Sémériva M, Piovant M, Röder L. Expression of cardiac myosin binding protein C (cMyBP-C) in *Drosophila* as a model for the study of human cardiomyopathies. *Hum Mol Genet* 2005; 14:7-17.

Sarikas A, Carrier L, Schenke C, Doll D, Flavigny J, Lindenberg KS, Eschenhagen T, Zolk O. Impairment of the ubiquitin-proteasome system by truncated cardiac myosin binding protein C mutants. *Cardiovasc Res* 2005; 66:33-44.

Hinz B, Chevts J, Renner B, Wuttke H, Rau T, Schmidt A, Szelenyi I, Brune K, Werner U. Bioavailability of diclofenac potassium at low doses. *Br J Clin Pharmacol* 2005; 59:80-84.

Guse AH, Gu X, Zhang L, Weber K, Krämer E, Yang Z, Jin H, Carrier L, Zhang L. A minimal structural analogue of cyclic ADP-ribose: synthesis and calcium release activity in mammalian cells. *J Biol Chem* 2005; 280:15952-15959.

Tsikakos D, Schwedhelm E, Frölich JC. Unusual collision-induced dissociation of fluorated and non-fluorated alpha-nitrotoluene analogs in a gas chromatograph triple-stage quadrupole mass spectrometer under electron-capturing negative-ion chemical ionization conditions. *J Chromatogr A* 2005; 1067:337-45.

Krempl TK, Kähler J, Maas R, Silberhorn L, Meinertz T, Böger RH. Elevation of asymmetric dimethylarginine in patients with unstable angina and recurrent cardiovascular events. *Eur Heart J* 2005; 26:1846-1851.

Castro L, Mialet-Perez J, Guillemeau A, Stillitano F, Zolk O, Eschenhagen T, Lezoualc'h F, Bochet P, Fischmeister R. Differential functional effects of two 5-HT(4) receptor isoforms in adult cardiomyocytes. *J Mol Cell Cardiol* 2005; 39:335-344.

Forissier JF, Charron P, Terenes du Montcel S, Hagège AA, Isnard R, Carrier L, Richard P, Desnos M, Bouhour JB, Schwartz K, Komajda M, Dubourg O. Diagnostic accuracy of a 2D left ventricle hypertrophy score for familial hypertrophic cardiomyopathy. *Eur Heart J* 2005; 26:1882-1886.

Schwedhelm E, Tan-Andresen J., Maas R, Riederer U, Schulze F, Böger RH. Liquid chromatography-tandem mass spectrometry method for the analysis of asymmetric dimethylarginine in human plasma. *Clin Chem* 2005; 51:1268-1271.

Münzel F, Mühlhäuser U, Zimmermann W-H, Didié M, Schneiderbanger K, Schubert P, Engmann S, Eschenhagen T, Zolk O. Endothelin-1 and isoprenaline co-stimulation causes contractile failure which is partially reversed by MEK inhibition. *Cardiovasc Res* 2005; 68:464-474.

Willipinski-Stapelfeldt B, Riethdorf S, Assmann V, Woelfle U, Rau T, Sauter G, Heukeshoven J, Pantel K. Changes in cytoskeletal protein composition indicative of an epithelial-mesenchymal transition in human micrometastatic and primary breast carcinoma cells. *Clin Cancer Res* 2005; 11:8006-8014.

Müller V, Stahmann N, Riethdorf S, Rau T, Zabel T, Goetz A, Janicke F, Pantel K. Circulating tumor cells in breast cancer: correlation to bone marrow micrometastases, heterogeneous response to systemic therapy and low proliferative activity. *Clin Cancer Res* 2005; 11:3678-3685.

Vantler M, Caglayan E, Zimmermann WH, Baumer AT, Rosenkranz S. Systematic evaluation of anti-apoptotic growth factor signaling in vascular smooth muscle cells. Only phosphatidylinositol 3'-kinase is important.

J Biol Chem 2005; 280:14168-14176.

Schulze F, Maas R, Freese R, Schwedhelm E, Silberhorn E, Böger RH. Determination of a reference value for N<sup>G</sup>, N<sup>G</sup>-dimethyl-L-arginine in 500 subjects.

Eur J Clin Invest 2005; 35:622-626.

Maas R, Wenske S, Zabel M, Ventura R, Schwedhelm E, Steenpaß A, Klemm H, Noldus J, Böger RH. Elevation of asymmetrical dimethylarginine (ADMA) and coronary artery disease in men with erectile dysfunction.

Eur Urol 2005; 48:1004-1012.

Perticone F, Sciacqua A, Maio R, Perticone M, Maas R, Böger RH, Tripepi G, STAT TECH, Sesti G, Zoccali C. Asymmetric dimethylarginine, L-arginine, and endothelial dysfunction in essential hypertension.

J Am Coll Cardiol 2005; 46:518-523.

Testa A, Spoto B, Tripepi G, Mallamaci F, Malatino L, Fatuzzo P, Maas R, Böger R, Zoccali C. The GLU298ASP variant of nitric oxide synthase interacts with asymmetric dimethyl arginine in determining cardiovascular mortality in patients with end-stage renal disease.

J Hypertens 2005; 23:1825-1830.

Chan CT, Harvey PJ, Böger R, Pierratos A, Floras JS. Dissociation between the short-term effects of nocturnal hemodialysis on endothelium dependent vasodilation and plasma ADMA.

Arteriosclerosis Thromb Vasc Biol 2005; 12:2685-2686.

Deuse T, Schrepfer S, Koch-Nolte F, Haddad M, Schwedhelm E, Böger R, Schäfer H, Detter C, Reichenspurner H. FK778 and tacrolimus prevent the development of obliterative airway disease after heterotopic rat tracheal transplantation.

J Heart Lung Transplant 2005; 24:1844-1854.

Doshi S, McDowell I, Goodfellow J, Stabler S, Böger R, Allen R, Newcombe R, Lewis M, Moat S. Relationship between S-adenosylmethionine, S-adenosylhomocysteine, asymmetric dimethylarginine, and endothelial function in healthy human subjects during experimental hyper- and hypohomocysteinemia.

Metabolism 2005; 54:351-360.

Niebauer J, Clark AL, Webb-Peploe KM, Böger R, Coats AJ. Home-based exercise training modulates pro-oxidant substrates in patients with chronic heart failure.

Eur J Heart Fail 2005; 7:183-188.

Hahne AK, Benndorf R, Frey P, Herzig S. Attitude towards computer-based learning: determinants as revealed by a controlled interventional study.

Med Educ 2005; 39(9):935-943.

Spoto B, Benedetto FA, Testa A, Tripepi G, Mallamaci F, Maas R, Böger RH, Zoccali C, Parlongo RM, Pisano A. Atherosclerosis and the Glu298Asp polymorphism of the eNOS gene in white patients with end-stage renal disease.

AJH 2005; 18:1549-1555.

Tsikis D, Schwedhelm E, Frölich C. Unusual collision-induced dissociation of fluorated and non-fluorated  $\alpha$ -nitrotoluene analogs in a gas chromatograph triple-stage quadrupole mass spectrometer under electron-capturing negative-ion chemical ionization conditions.

J Chromatography A 2005; 1067:337-345.

Schuchert A, Maas R, Mortensen K, Aydin MA, Kretzschmar C, Meinertz T. Effect of syncope-related traumatic injuries on the diagnostic evaluation and syncope recurrence of patients with syncope and apparently normal hearts.

Am J Cardiol 2005; 95:1101-1103.

## Übersichten

Böger RH, Ron ES. L-Arginine improves vascular function by overcoming the deleterious effects of ADMA, a novel cardiovascular risk factor. *Altern Med Rev* 2005; 10:14-23.

Böger RH. Acute hyperhomocysteinemia decreases NO bioavailability in healthy adults. *Atherosclerosis* 2005; 179:419-420.

Böger RH, Cooke JP, Vallance P. ADMA: an emerging cardiovascular risk factor. *Vasc Med* 2005; 10:S1-2.

Böger RH. Asymmetric dimethylarginine (ADMA) and cardiovascular disease: insights from prospective clinical trials. *Vasc Med* 2005; 10:S19-25.

Böger RH, Schwedhelm E, Maas R, Quispe-Bravo S, Skamira C. ADMA and oxidative stress may relate to the progression of renal disease: rationale and design of the VIVALDI study. *Vasc Med* 2005; 10:S97-102.

Schwedhelm E. Quantification of ADMA: analytical approaches. *Vasc Med* 2005; 10:S89-95.

Zimmermann WH, Eschenhagen T. Questioning the relevance of circulating cardiac progenitor cells in cardiac regeneration. *Cardiovasc Res* 2005; 68:344-346.

Eschenhagen T, Zimmermann WH. Engineering myocardial tissue. *Circ Res* 2005; 97:1220-1231.

Maas R. Pharmacotherapies and their influence on asymmetric dimethylarginine (ADMA). *Vasc Med*. 2005; 10 Suppl 1:S49-57.

Böger RH, Maas R, Schulze F, Schwedhelm E. Elevated levels of asymmetric dimethylarginine (ADMA) as a marker of cardiovascular disease and mortality. *Clin Chem Lab Med* 2005; 43:1124-1129

Eisele G, Böger RH. ASS zur Atheroskleroseprophylaxe. *Pharm Ztg* 2005; 150:20.

Zimmermann WH, Didié M, Eschenhagen T. Kardiales tissue engineering. *Lebendige Wissenschaft* 2005; 110-115.