

## 7 Literaturverzeichnis

- ALAM J, CAI J, SMITH A** (1994). Isolation and characterization of the mouse heme oxygenase-1 gene. Distal 5' sequences are required for induction by heme or heavy metals. *J Biol Chem* 269: 1001-9
- ALAM J, CAMHI S, CHOI AM** (1995). Identification of a second region upstream of the mouse heme oxygenase-1 gene that functions as a basal level and inducer-dependent transcription enhancer. *J Biol Chem* 270: 11977-84
- ALAM J, STEWART D, TOUCHARD C, BOINAPALLY S, CHOI AM, COOK JL** (1999). Nrf2, a Cap'n'Collar transcription factor, regulates induction of the heme oxygenase-1 gene. *J Biol Chem* 274: 26071-8
- ALAM J, WICKS C, STEWART D, GONG P, TOUCHARD C, OTTERBEIN S, CHOI AM, BUROW ME, TOU J** (2000). Mechanism of heme oxygenase-1 gene activation by cadmium in MCF-7 mammary epithelial cells. Role of p38 kinase and Nrf2 transcription factor. *J Biol Chem* 275: 27694-702
- ALAM J, KILLEEN E, GONG P, NAQUIN R, HU B, STEWART D, INGELFINGER JR, NATH KA** (2003). Heme activates the heme oxygenase-1 gene in renal epithelial cells by stabilizing Nrf2. *Am J Physiol Renal Physiol* 284: F743-52
- ALESSI DR, CUENDA A, COHEN P, DUDLEY DT, SALTIEL AR** (1995). PD 098059 is a specific inhibitor of the activation of mitogen-activated protein kinase kinase in vitro and in vivo. *J Biol Chem* 270: 27489-94
- AL-SWAYEH OA, CLIFFORD RH, DEL SOLDATO P, MOORE PK** (2000). A comparison of the anti-inflammatory and anti-nociceptive activity of nitroaspirin and aspirin. *Br J Pharmacol* 129: 343-50
- ALWINE JC, KEMP DJ, STARK GR** (1977). Method for detection of specific RNAs in agarose gels by transfer to diazobenzyloxymethyl-paper and hybridization with DNA probes. *Proc Natl Acad Sci U S A* 74: 5350-4
- ANDREWS FJ, MALCONTENTI-WILSON C, O'BRIEN PE** (1994). Effect of nonsteroidal anti-inflammatory drugs on LFA-1 and ICAM-1 expression in gastric mucosa. *Am J Physiol* 266: G657-64
- ARBABI S & MAIER RV** (2002). Mitogen-activated protein kinases. *Crit Care Med* 30: S74-S79
- ASAKO H, KUBES P, WALLACE J, GAGINELLA T, WOLF RE, GRANGER DN** (1992). Indomethacin-induced leukocyte adhesion in mesenteric venules: role of lipoxygenase products. *Am J Physiol* 262: G903-8
- BALLA G, JACOB HS, BALLA J, ROSENBERG M, NATH K, APPLE F, EATON JW, VERCELLOTTI GM** (1992). Ferritin: a cytoprotective antioxidant strategem of endothelium. *J Biol Chem* 267: 18148-53
- BALOGUN E, HOQUE M, GONG P, KILLEEN E, GREEN CJ, FORESTI R, ALAM J, MOTTERLINI R** (2003). Curcumin activates the haem oxygenase-1 gene via regulation of Nrf2 and the antioxidant-responsive element. *Biochem J* 371: 887-95
- BARANANO DE, RAO M, FERRIS CD, SNYDER SH** (2002). Biliverdin reductase: a major physiologic cytoprotectant. *Proc Natl Acad Sci U S A* 99: 16093-8
- BARRACHINA MD, CALATAYUD S, CANET A, BELLO R, DIAZ DE ROJAS F, GUTH PH, ESPLUGUES JV** (1995). Transdermal nitroglycerin prevents nonsteroidal anti-inflammatory drug gastropathy. *Eur J Pharmacol* 281: R3-4
- BARRANCO SC, TOWNSEND CM, JR., CASARTELLI C, MACIK BG, BURGER NL, BOERWINKLE WR, GOURLEY WK** (1983). Establishment and characterization of an in vitro model system for human adenocarcinoma of the stomach. *Cancer Res* 43: 1703-9

- BEAUVAIS F, MICHEL L, DUBERTRET L** (1995). The nitric oxide donors, azide and hydroxylamine, inhibit the programmed cell death of cytokine-deprived human eosinophils. *FEBS Lett* 361: 229-32
- BEBIEN M, SALINAS S, BECAMEL C, RICHARD V, LINARES L, HIPSKIND RA** (2003). Immediate-early gene induction by stresses anisomycin and arsenite in human osteosarcoma cells involves MAPK cascade signaling to Elk-1, CREB and SRF. *Oncogene* 22: 1836-1847
- BENNETT BL, SASAKI DT, MURRAY BW, O'LEARY EC, SAKATA ST, XU W, LEISTEN JC, MOTIWALA A, PIERCE S, SATOH Y, BHAGWAT SS, MANNING AM, ANDERSON DW** (2001). SP600125, an anthrapyrazolone inhibitor of Jun N-terminal kinase. *Proc Natl Acad Sci U S A* 98: 13681-6
- BENNETT BM, LEITMAN DC, SCHRÖDER H, KAWAMOTO JH, NAKATSU K, MURAD F** (1989). Relationship between biotransformation of glyceryl trinitrate and cyclic GMP accumulation in various cultured cell lines. *J Pharmacol Exp Ther* 250: 316-23
- BIRNBOIM HC & DOLY J** (1979). A rapid alkaline extraction procedure for screening recombinant plasmid DNA. *Nucleic Acids Res* 7: 1513-1523
- BJARNASON I, HAYLLAR J, MACPHERSON AJ, RUSSELL AS** (1993). Side effects of nonsteroidal anti-inflammatory drugs on the small and large intestine in humans. *Gastroenterology* 104: 1832-47
- BOMBARDIER C, LAINE L, REICIN A, SHAPIRO D, BURGOS-VARGAS R, DAVIS B, DAY R, FERRAZ MB, HAWKEY CJ, HOCHBERG MC, KVIEN TK, SCHNITZER TJ** (2000). Comparison of upper gastrointestinal toxicity of rofecoxib and naproxen in patients with rheumatoid arthritis. VIGOR Study Group. *N Engl J Med* 343: 1520-8, 2 p following 1528
- BOUTON C & DEMPLE B** (2000). Nitric oxide-inducible expression of heme oxygenase-1 in human cells. Translation-independent stabilization of the mRNA and evidence for direct action of nitric oxide. *J Biol Chem* 275: 32688-93
- BRADFORD MM** (1976). A rapid and sensitive method for the quantitation of microgram quantities of protein utilizing the principle of protein-dye binding. *Anal Biochem* 72: 248-54
- BROUARD S, OTTERBEIN LE, ANRATHER J, TOBIASCH E, BACH FH, CHOI AM, SOARES MP** (2000). Carbon monoxide generated by heme oxygenase 1 suppresses endothelial cell apoptosis. *J Exp Med* 192: 1015-26
- BROUARD S, BERBERAT PO, TOBIASCH E, SELDON MP, BACH FH, SOARES MP** (2002). Heme oxygenase-1-derived carbon monoxide requires the activation of transcription factor NF-kappa B to protect endothelial cells from tumor necrosis factor-alpha-mediated apoptosis. *J Biol Chem* 277: 17950-61
- BROWN JF, KEATES AC, HANSON PJ, WHITTLE BJ** (1993). Nitric oxide generators and cGMP stimulate mucus secretion by rat gastric mucosal cells. *Am J Physiol* 265: G418-22
- BROWNING DD, MCSHANE MP, MARTY C, YE RD** (2000). Nitric oxide activation of p38 mitogen-activated protein kinase in 293T fibroblasts requires cGMP-dependent protein kinase. *J Biol Chem* 275: 2811-6
- BRUNNER F, SCHMIDT K, NIELSEN EB, MAYER B** (1996). Novel guanylyl cyclase inhibitor potently inhibits cyclic GMP accumulation in endothelial cells and relaxation of bovine pulmonary artery. *J Pharmacol Exp Ther* 277: 48-53
- BUCKLEY BJ, MARSHALL ZM, WHORTON AR** (2003). Nitric oxide stimulates Nrf2 nuclear translocation in vascular endothelium. *Biochem Biophys Res Commun* 307: 973-9
- CALLSEN D, PFEILSCHIFTER J, BRUNE B** (1998). Rapid and delayed p42/p44 mitogen-activated protein kinase activation by nitric oxide: the role of cyclic GMP and tyrosine phosphatase inhibition. *J Immunol* 161: 4852-8

- CAMHI SL, ALAM J, WIEGAND GW, CHIN BY, CHOI AM** (1998). Transcriptional activation of the HO-1 gene by lipopolysaccharide is mediated by 5' distal enhancers: role of reactive oxygen intermediates and AP-1. *Am J Respir Cell Mol Biol* 18: 226-34
- CARTER AB, KNUDTSON KL, MONICK MM, HUNNINGHAKE GW** (1999). The p38 mitogen-activated protein kinase is required for NF-kappaB-dependent gene expression. The role of TATA-binding protein (TBP). *J Biol Chem* 274: 30858-63
- CHEN K & MAINES MD** (2000). Nitric oxide induces heme oxygenase-1 via mitogen-activated protein kinases ERK and p38. *Cell Mol Biol (Noisy-le-grand)* 46: 609-17
- CHEN YC, SHEN SC, LEE WR, LIN HY, KO CH, LEE TJ** (2002a). Nitric oxide and prostaglandin E2 participate in lipopolysaccharide/interferon-gamma-induced heme oxygenase 1 and prevent RAW264.7 macrophages from UV-irradiation-induced cell death. *J Cell Biochem* 86: 331-9
- CHEN Z, ZHANG J, STAMLER JS** (2002b). Identification of the enzymatic mechanism of nitroglycerin bioactivation. *Proc Natl Acad Sci U S A* 99: 8306-11
- CHOI AM & ALAM J** (1996). Heme oxygenase-1: function, regulation, and implication of a novel stress-inducible protein in oxidant-induced lung injury. *Am J Respir Cell Mol Biol* 15: 9-19
- CHOMCZYNSKI P & SACCHI N** (1987). Single-step method of RNA isolation by acid guanidinium thiocyanate-phenol-chloroform extraction. *Anal Biochem* 162: 156-9
- CIANI E, GUIDI S, BARTESAGHI R, CONTESTABILE A** (2002). Nitric oxide regulates cGMP-dependent cAMP-responsive element binding protein phosphorylation and Bcl-2 expression in cerebellar neurons: implication for a survival role of nitric oxide. *J Neurochem* 82: 1282-9
- CICALA C, IANARO A, FIORUCCI S, CALIGNANO A, BUCCI M, GERLI R, SANTUCCI L, WALLACE JL, CIRINO G** (2000). NO-Naproxen modulates inflammation, nociception and downregulates T cell responses in rat Freund's adjuvant arthritis. *Br J Pharmacol* 130: 1399-1405
- CIRINO G** (2003). Nitric oxide releasing drugs: from bench to bedside. *Dig Liver Dis* 35 Suppl 2: S2-8
- CLARK JE, FORESTI R, GREEN CJ, MOTTERLINI R** (2000a). Dynamics of haem oxygenase-1 expression and bilirubin production in cellular protection against oxidative stress. *Biochem J* 348 Pt 3: 615-9
- CLARK JE, FORESTI R, SARATHCHANDRA P, KAUR H, GREEN CJ, MOTTERLINI R** (2000b). Heme oxygenase-1-derived bilirubin ameliorates postischemic myocardial dysfunction. *Am J Physiol Heart Circ Physiol* 278: H643-51
- DAVIES NM, ROSETH AG, APPELYARD CB, MCKNIGHT W, DEL SOLDATO P, CALIGNANO A, CIRINO G, WALLACE JL** (1997). NO-naproxen vs. naproxen: ulcerogenic, analgesic and anti-inflammatory effects. *Aliment Pharmacol Ther* 11: 69-79
- DAVIS RJ** (1993). The mitogen-activated protein kinase signal transduction pathway. *J Biol Chem* 268: 14553-6
- DENNERY PA, McDONAGH AF, SPITZ DR, RODGERS PA, STEVENSON DK** (1995). Hyperbilirubinemia results in reduced oxidative injury in neonatal Gunn rats exposed to hyperoxia. *Free Radic Biol Med* 19: 395-404
- DENNINGER JW & MARLETTA MA** (1999). Guanylate cyclase and the .NO/cGMP signaling pathway. *Biochim Biophys Acta* 1411: 334-50
- DIMMELER S, HAENDELER J, NEHLS M, ZEIHNER AM** (1997). Suppression of apoptosis by nitric oxide via inhibition of interleukin-1beta-converting enzyme (ICE)-like and cysteine protease protein (CPP)-32-like proteases. *J Exp Med* 185: 601-7
- DORE S, TAKAHASHI M, FERRIS CD, ZAKHARY R, HESTER LD, GUASTELLA D, SNYDER SH** (1999). Bilirubin, formed by activation of heme oxygenase-2, protects neurons against oxidative stress injury. *Proc Natl Acad Sci U S A* 96: 2445-50

- DURANTE W, KROLL MH, CHRISTODOULIDES N, PEYTON KJ, SCHAFFER AI** (1997). Nitric oxide induces heme oxygenase-1 gene expression and carbon monoxide production in vascular smooth muscle cells. *Circ Res* 80: 557-64
- DURANTE W** (2003). Heme oxygenase-1 in growth control and its clinical application to vascular disease. *J Cell Physiol* 195: 373-82
- ELBIRT KK, WHITMARSH AJ, DAVIS RJ, BONKOVSKY HL** (1998). Mechanism of sodium arsenite-mediated induction of heme oxygenase-1 in hepatoma cells. Role of mitogen-activated protein kinases. *J Biol Chem* 273: 8922-31
- ELLIOTT SN, MCKNIGHT W, CIRINO G, WALLACE JL** (1995). A nitric oxide-releasing nonsteroidal anti-inflammatory drug accelerates gastric ulcer healing in rats. *Gastroenterology* 109: 524-30
- FEELISCH M** (1998). The use of nitric oxide donors in pharmacological studies. *Naunyn Schmiedebergs Arch Pharmacol* 358: 113-22
- FEINBERG AP & VOGELSTEIN B** (1983). A technique for radiolabeling DNA restriction endonuclease fragments to high specific activity. *Anal Biochem* 132: 6-13
- FIORUCCI S, ANTONELLI E, SANTUCCI L, MORELLI O, MIGLIETTI M, FEDERICI B, MANNUCCI R, DEL SOLDATO P, MORELLI A** (1999a). Gastrointestinal safety of nitric oxide-derived aspirin is related to inhibition of ICE-like cysteine proteases in rats. *Gastroenterology* 116: 1089-106
- FIORUCCI S, SANTUCCI L, FEDERICI B, ANTONELLI E, DISTRUTTI E, MORELLI O, RENZO GD, COATA G, CIRINO G, SOLDATO PD, MORELLI A** (1999b). Nitric oxide-releasing NSAIDs inhibit interleukin-1beta converting enzyme-like cysteine proteases and protect endothelial cells from apoptosis induced by TNFalpha. *Aliment Pharmacol Ther* 13: 421-35
- FIORUCCI S, SANTUCCI L, CIRINO G, MENCARELLI A, FAMILIARI L, SOLDATO PD, MORELLI A** (2000). IL-1 beta converting enzyme is a target for nitric oxide-releasing aspirin: new insights in the antiinflammatory mechanism of nitric oxide-releasing nonsteroidal antiinflammatory drugs. *J Immunol* 165: 5245-54
- FIORUCCI S & DEL SOLDATO P** (2003). NO-aspirin: mechanism of action and gastrointestinal safety. *Dig Liver Dis* 35 Suppl 2: S9-19
- FIORUCCI S, SANTUCCI L, GRESELE P, FACCINO RM, DEL SOLDATO P, MORELLI A** (2003). Gastrointestinal safety of NO-aspirin (NCX-4016) in healthy human volunteers: a proof of concept endoscopic study. *Gastroenterology* 124: 600-7
- FITZGERALD GA & PATRONO C** (2001). The coxibs, selective inhibitors of cyclooxygenase-2. *N Engl J Med* 345: 433-42
- FLETCHER BS, KUJUBU DA, PERRIN DM, HERSCHMAN HR** (1992). Structure of the mitogen-inducible TIS10 gene and demonstration that the TIS10-encoded protein is a functional prostaglandin G/H synthase. *J Biol Chem* 267: 4338-44
- FORESTI R & MOTTERLINI R** (1999). The heme oxygenase pathway and its interaction with nitric oxide in the control of cellular homeostasis. *Free Radic Res* 31: 459-75
- FORESTI R, SARATHCHANDRA P, CLARK JE, GREEN CJ, MOTTERLINI R** (1999). Peroxynitrite induces haem oxygenase-1 in vascular endothelial cells: a link to apoptosis. *Biochem J* 339 ( Pt 3): 729-36
- FÖRSTERMANN U, CLOSS EI, POLLOCK JS, NAKANE M, SCHWARZ P, GATH I, KLEINERT H** (1994). Nitric oxide synthase isozymes. Characterization, purification, molecular cloning, and functions. *Hypertension* 23: 1121-31
- FRANK S, ZACHAROWSKI K, WRAY GM, THIEMERMANN C, PFEILSCHIFTER J** (1999). Identification of copper/zinc superoxide dismutase as a novel nitric oxide-regulated gene in rat glomerular mesangial cells and kidneys of endotoxemic rats. *Faseb J* 13: 869-82
- FRIEDL A, HARMENING C, SCHURICHT B, HAMPRECHT B** (1985). Rat atrial natriuretic peptide elevates the level of cyclic GMP in astroglia-rich brain cell cultures. *Eur J Pharmacol* 111: 141-2

- FURCHGOTT RF & VANHOUTTE PM** (1989). Endothelium-derived relaxing and contracting factors. *Faseb J* 3: 2007-18
- GENARO AM, HORTELANO S, ALVAREZ A, MARTINEZ C, BOSCA L** (1995). Splenic B lymphocyte programmed cell death is prevented by nitric oxide release through mechanisms involving sustained Bcl-2 levels. *J Clin Invest* 95: 1884-90
- GRIENGLING KK, SORESCU D, USHIO-FUKAI M** (2000). NAD(P)H oxidase: role in cardiovascular biology and disease. *Circ Res* 86: 494-501
- GROSSER N & SCHRÖDER H** (2000). A common pathway for nitric oxide release from NO-aspirin and glyceryl trinitrate. *Biochem Biophys Res Commun* 274: 255-8
- GRYGLEWSKI RJ, PALMER RM, MONCADA S** (1986). Superoxide anion is involved in the breakdown of endothelium-derived vascular relaxing factor. *Nature* 320: 454-6
- GUDI T, HUVAR I, MEINECKE M, LOHMANN SM, BOSS GR, PILZ RB** (1996). Regulation of gene expression by cGMP-dependent protein kinase. Transactivation of the c-fos promoter. *J Biol Chem* 271: 4597-600
- GUZIK TJ, WEST NE, BLACK E, McDONALD D, RATNATUNGA C, PILLAI R, CHANNON KM** (2000). Vascular superoxide production by NAD(P)H oxidase: association with endothelial dysfunction and clinical risk factors. *Circ Res* 86: E85-90
- HAIDER A, OLSZANECKI R, GRYGLEWSKI R, SCHWARTZMAN ML, LIANOS E, KAPPAS A, NASJLETTI A, ABRAHAM NG** (2002). Regulation of cyclooxygenase by the heme-heme oxygenase system in microvessel endothelial cells. *J Pharmacol Exp Ther* 300: 188-94
- HARTSFIELD CL, ALAM J, COOK JL, CHOI AM** (1997). Regulation of heme oxygenase-1 gene expression in vascular smooth muscle cells by nitric oxide. *Am J Physiol* 273: L980-8
- HARTSFIELD CL, ALAM J, CHOI AM** (1999). Differential signaling pathways of HO-1 gene expression in pulmonary and systemic vascular cells. *Am J Physiol* 277: L1133-41
- HAWKEY CJ & RAMPTON DS** (1985). Prostaglandins and the gastrointestinal mucosa: are they important in its function, disease, or treatment? *Gastroenterology* 89: 1162-88
- HAWKEY CJ, JONES JI, ATHERTON CT, SKELLY MM, BEBB JR, FAGERHOLM U, JONZON B, KARLSSON P, BJARNASON IT** (2003). Gastrointestinal safety of AZD3582, a cyclooxygenase inhibiting nitric oxide donator: proof of concept study in humans. *Gut* 52: 1537-42
- HAWKEY CJ & LANGMAN MJ** (2003). Non-steroidal anti-inflammatory drugs: overall risks and management. Complementary roles for COX-2 inhibitors and proton pump inhibitors. *Gut* 52: 600-8
- HAYDEN M, PIGNONE M, PHILLIPS C, MULROW C** (2002). Aspirin for the primary prevention of cardiovascular events: a summary of the evidence for the U.S. Preventive Services Task Force. *Ann Intern Med* 136: 161-72
- HE CH, GONG P, HU B, STEWART D, CHOI ME, CHOI AM, ALAM J** (2001). Identification of activating transcription factor 4 (ATF4) as an Nrf2-interacting protein. Implication for heme oxygenase-1 gene regulation. *J Biol Chem* 276: 20858-65
- HINZ B & SCHRÖDER H** (1998). Vitamin C attenuates nitrate tolerance independently of its antioxidant effect. *FEBS Lett* 428: 97-9
- HOLM M, JOHANSSON B, PETTERSSON A, FANDRIKS L** (1998). Acid-induced duodenal mucosal nitric oxide output parallels bicarbonate secretion in the anaesthetized pig. *Acta Physiol Scand* 162: 461-8
- HOLZER P & SAMETZ W** (1986). Gastric mucosal protection against ulcerogenic factors in the rat mediated by capsaicin-sensitive afferent neurons. *Gastroenterology* 91: 975-81
- HOPKINS PN, WU LL, HUNT SC, JAMES BC, VINCENT GM, WILLIAMS RR** (1996). Higher serum bilirubin is associated with decreased risk for early familial coronary artery disease. *Arterioscler Thromb Vasc Biol* 16: 250-5

- HUANG HC, NGUYEN T, PICKETT CB** (2000). Regulation of the antioxidant response element by protein kinase C-mediated phosphorylation of NF-E2-related factor 2. *Proc Natl Acad Sci U S A* 97: 12475-80
- IGNARRO LJ, BUGA GM, WOOD KS, BYRNS RE, CHAUDHURI G** (1987). Endothelium-derived relaxing factor produced and released from artery and vein is nitric oxide. *Proc Natl Acad Sci U S A* 84: 9265-9
- IGNARRO LJ** (1999). Nitric oxide: a unique endogenous signalling molecule in vascular biology. *Biosci Rep* 19: 51-71
- IMMENSCHUH S, HINKE V, OHLMANN A, GIFHORN-KATZ S, KATZ N, JUNGERMANN K, KIETZMANN T** (1998). Transcriptional activation of the haem oxygenase-1 gene by cGMP via a cAMP response element/activator protein-1 element in primary cultures of rat hepatocytes. *Biochem J* 334 ( Pt 1): 141-6
- IMMENSCHUH S & RAMADORI G** (2000). Gene regulation of heme oxygenase-1 as a therapeutic target. *Biochem Pharmacol* 60: 1121-8
- INGUAGGIATO P, GONZALEZ-MICHACA L, CROATT AJ, HAGGARD JJ, ALAM J, NATH KA** (2001). Cellular overexpression of heme oxygenase-1 up-regulates p21 and confers resistance to apoptosis. *Kidney Int* 60: 2181-91
- ISHII T, ITOH K, TAKAHASHI S, SATO H, YANAGAWA T, KATOH Y, BANNAI S, YAMAMOTO M** (2000). Transcription factor Nrf2 coordinately regulates a group of oxidative stress-inducible genes in macrophages. *J Biol Chem* 275: 16023-9
- ITOH K, WAKABAYASHI N, KATOH Y, ISHII T, IGARASHI K, ENGEL JD, YAMAMOTO M** (1999). Keap1 represses nuclear activation of antioxidant responsive elements by Nrf2 through binding to the amino-terminal Neh2 domain. *Genes Dev* 13: 76-86
- JACOBS AT & IGNARRO LJ** (2003). Nuclear factor-kappa B and mitogen-activated protein kinases mediate nitric oxide-enhanced transcriptional expression of interferon-beta. *J Biol Chem* 278: 8018-27
- JENEY V, BALLA J, YACHIE A, VARGA Z, VERCELLOTTI GM, EATON JW, BALLA G** (2002). Pro-oxidant and cytotoxic effects of circulating heme. *Blood* 100: 879-87
- JOHAL K & HANSON PJ** (2000). Opposite effects of flurbiprofen and the nitroxybutyl ester of flurbiprofen on apoptosis in cultured guinea-pig gastric mucous cells. *Br J Pharmacol* 130: 811-8
- JUN CD, OH CD, KWAK HJ, PAE HO, YOO JC, CHOI BM, CHUN JS, PARK RK, CHUNG HT** (1999). Overexpression of protein kinase C isoforms protects RAW 264.7 macrophages from nitric oxide-induced apoptosis: involvement of c-Jun N-terminal kinase/stress-activated protein kinase, p38 kinase, and CPP-32 protease pathways. *J Immunol* 162: 3395-401
- KARIN M** (1995). The regulation of AP-1 activity by mitogen-activated protein kinases. *J Biol Chem* 270: 16483-6
- KAWASHIMA A, ODA Y, YACHIE A, KOIZUMI S, NAKANISHI I** (2002). Heme oxygenase-1 deficiency: the first autopsy case. *Hum Pathol* 33: 125-30
- KEEBLE JE & MOORE PK** (2002). Pharmacology and potential therapeutic applications of nitric oxide-releasing non-steroidal anti-inflammatory and related nitric oxide-donating drugs. *Br J Pharmacol* 137: 295-310
- KIEMER AK, BILDNER N, WEBER NC, VOLLMAR AM** (2003). Characterization of heme oxygenase 1 (heat shock protein 32) induction by atrial natriuretic peptide in human endothelial cells. *Endocrinology* 144: 802-12
- KIETZMANN T, SAMOYLENKO A, IMMENSCHUH S** (2003). Transcriptional regulation of heme oxygenase-1 gene expression by MAP kinases of the JNK and p38 pathways in primary cultures of rat hepatocytes. *J Biol Chem* 278: 17927-36
- KIM H, SHIM J, HAN PL, CHOI EJ** (1997a). Nitric oxide modulates the c-Jun N-terminal kinase/stress-activated protein kinase activity through activating c-Jun N-terminal kinase kinase. *Biochemistry* 36: 13677-81

- KIM YM, BERGONIA HA, MULLER C, PITT BR, WATKINS WD, LANCASTER JR, JR.** (1995). Loss and degradation of enzyme-bound heme induced by cellular nitric oxide synthesis. *J Biol Chem* 270: 5710-3
- KIM YM, DE VERA ME, WATKINS SC, BILLIAR TR** (1997b). Nitric oxide protects cultured rat hepatocytes from tumor necrosis factor-alpha-induced apoptosis by inducing heat shock protein 70 expression. *J Biol Chem* 272: 1402-11
- KIM YM, TALANIAN RV, BILLIAR TR** (1997c). Nitric oxide inhibits apoptosis by preventing increases in caspase-3-like activity via two distinct mechanisms. *J Biol Chem* 272: 31138-48
- KIM YM, KIM TH, SEOL DW, TALANIAN RV, BILLIAR TR** (1998). Nitric oxide suppression of apoptosis occurs in association with an inhibition of Bcl-2 cleavage and cytochrome c release. *J Biol Chem* 273: 31437-41
- KOIZUMI T, ODANI N, OKUYAMA T, ICHIKAWA A, NEGISHI M** (1995). Identification of a cis-regulatory element for delta 12-prostaglandin J2-induced expression of the rat heme oxygenase gene. *J Biol Chem* 270: 21779-84
- KONTUREK SJ, BRZOZOWSKI T, MAJKA J, PYTKO-POLONCZYK J, STACHURA J** (1993). Inhibition of nitric oxide synthase delays healing of chronic gastric ulcers. *Eur J Pharmacol* 239: 215-7
- KORUS M, MAHON GM, CHENG L, WHITEHEAD IP** (2002). p38 MAPK-mediated activation of NF-kappaB by the RhoGEF domain of Bcr. *Oncogene* 21: 4601-12
- KOSONEN O, KANKAANRANTA H, MALO-RANTA U, MOILANEN E** (1999). Nitric oxide-releasing compounds inhibit neutrophil adhesion to endothelial cells. *Eur J Pharmacol* 382: 111-7
- KUBES P, SUZUKI M, GRANGER DN** (1991). Nitric oxide: an endogenous modulator of leukocyte adhesion. *Proc Natl Acad Sci U S A* 88: 4651-5
- LAINE L** (2003). The role of proton pump inhibitors in NSAID-associated gastropathy and upper gastrointestinal symptoms. *Rev Gastroenterol Disord* 3 Suppl 4: S30-9
- LÄMMLI UK** (1970). Cleavage of structural proteins during the assembly of the head of bacteriophage T4. *Nature* 227: 680-685
- LANAS A, BAJADOR E, SERRANO P, FUENTES J, CARRENO S, GUARDIA J, SANZ M, MONTORO M, SAINZ R** (2000). Nitrovasodilators, low-dose aspirin, other nonsteroidal antiinflammatory drugs, and the risk of upper gastrointestinal bleeding. *N Engl J Med* 343: 834-9
- LANCASTER JR, JR. & HIBBS JB, JR.** (1990). EPR demonstration of iron-nitrosyl complex formation by cytotoxic activated macrophages. *Proc Natl Acad Sci U S A* 87: 1223-7
- LANDER HM, OGIESTE JS, PEARCE SF, LEVI R, NOVOGRODSKY A** (1995a). Nitric oxide-stimulated guanine nucleotide exchange on p21ras. *J Biol Chem* 270: 7017-20
- LANDER HM, OGIESTE JS, TENG KK, NOVOGRODSKY A** (1995b). p21ras as a common signaling target of reactive free radicals and cellular redox stress. *J Biol Chem* 270: 21195-8
- LANDER HM, JACOVINA AT, DAVIS RJ, TAURAS JM** (1996). Differential activation of mitogen-activated protein kinases by nitric oxide-related species. *J Biol Chem* 271: 19705-9
- LAVROVSKY Y, SCHWARTZMAN ML, LEVERE RD, KAPPAS A, ABRAHAM NG** (1994). Identification of binding sites for transcription factors NF-kappa B and AP-2 in the promoter region of the human heme oxygenase 1 gene. *Proc Natl Acad Sci U S A* 91: 5987-91
- LECHI C, ANDRIOLI G, GAINO S, TOMMASOLI R, ZULIANI V, ORTOLANI R, DEGAN M, BENONI G, BELLAVITE P, LECHI A, MINUZ P** (1996). The antiplatelet effects of a new nitroderivative of acetylsalicylic acid--an in vitro study of inhibition on the early phase of platelet activation and on TXA2 production. *Thromb Haemost* 76: 791-8

- LEE JC, KASSIS S, KUMAR S, BADGER A, ADAMS JL** (1999). p38 mitogen-activated protein kinase inhibitors--mechanisms and therapeutic potentials. *Pharmacol Ther* 82: 389-97
- LEE M, CRYER B, FELDMAN M** (1994). Dose effects of aspirin on gastric prostaglandins and stomach mucosal injury. *Ann Intern Med* 120: 184-189
- LEE PJ, CAMHI SL, CHIN BY, ALAM J, CHOI AM** (2000). AP-1 and STAT mediate hyperoxia-induced gene transcription of heme oxygenase-1. *Am J Physiol Lung Cell Mol Physiol* 279: L175-82
- LI Y, ZHU H, KUPPUSAMY P, ROUBAUD V, ZWEIER JL, TRUSH MA** (1998). Validation of lucigenin (bis-N-methylacridinium) as a chemilumigenic probe for detecting superoxide anion radical production by enzymatic and cellular systems. *J Biol Chem* 273: 2015-23
- LIANG M, CROATT AJ, NATH KA** (2000). Mechanisms underlying induction of heme oxygenase-1 by nitric oxide in renal tubular epithelial cells. *Am J Physiol Renal Physiol* 279: F728-35
- LIEW FY & COX FE** (1991). Nonspecific defence mechanism: the role of nitric oxide. *Immunol Today* 12: A17-21
- LIN F & GIROTTI AW** (1998). Hemin-enhanced resistance of human leukemia cells to oxidative killing: antisense determination of ferritin involvement. *Arch Biochem Biophys* 352: 51-8
- LIPPE IT & HOLZER P** (1992). Participation of endothelium-derived nitric oxide but not prostacyclin in the gastric mucosal hyperaemia due to acid back-diffusion. *Br J Pharmacol* 105: 708-14
- LIPTON SA, CHOI YB, PAN ZH, LEI SZ, CHEN HS, SUCHER NJ, LOSCALZO J, SINGEL DJ, STAMLER JS** (1993). A redox-based mechanism for the neuroprotective and neurodestructive effects of nitric oxide and related nitroso-compounds. *Nature* 364: 626-32
- LOPEZ-BELMONTE J, WHITTLE BJ, MONCADA S** (1993). The actions of nitric oxide donors in the prevention or induction of injury to the rat gastric mucosa. *Br J Pharmacol* 108: 73-8
- LOWENSTEIN CJ, DINERMAN JL, SNYDER SH** (1994). Nitric oxide: a physiologic messenger. *Ann Intern Med* 120: 227-237
- MAFFIA P, IANARO A, SORRENTINO R, LIPPOLIS L, MAIELLO FM, DEL SOLDATO P, IALENTI A, CIRINO G** (2002). Beneficial effects of NO-releasing derivative of flurbiprofen (HCT-1026) in rat model of vascular injury and restenosis. *Arterioscler Thromb Vasc Biol* 22: 263-7
- MAINES MD, TRAKSHEL GM, KUTTY RK** (1986). Characterization of two constitutive forms of rat liver microsomal heme oxygenase. Only one molecular species of the enzyme is inducible. *J Biol Chem* 261: 411-9
- MAINES MD** (1997). The heme oxygenase system: a regulator of second messenger gases. *Annu Rev Pharmacol Toxicol* 37: 517-54
- MANNICK JB, ASANO K, IZUMI K, KIEFF E, STAMLER JS** (1994). Nitric oxide produced by human B lymphocytes inhibits apoptosis and Epstein-Barr virus reactivation. *Cell* 79: 1137-46
- MARSHALL HE, MERCHANT K, STAMLER JS** (2000). Nitrosation and oxidation in the regulation of gene expression. *Faseb J* 14: 1889-900
- MARTIN MJ, JIMENEZ MD, MOTILVA V** (2001). New issues about nitric oxide and its effects on the gastrointestinal tract. *Curr Pharm Des* 7: 881-908
- MARTIN W, WHITE DG, HENDERSON AH** (1988). Endothelium-derived relaxing factor and atriopeptin II elevate cyclic GMP levels in pig aortic endothelial cells. *Br J Pharmacol* 93: 229-39
- MAXEY KM, MADDIPATI KR, BIRKMEIER J** (1992). Interference in immunoassay. *J Clin Immunoassay* 15: 116-120
- MAYER M** (2000). Association of serum bilirubin concentration with risk of coronary artery disease. *Clin Chem* 46: 1723-7



- MCCOUBREY WK, JR., HUANG TJ, MAINES MD** (1997). Isolation and characterization of a cDNA from the rat brain that encodes hemoprotein heme oxygenase-3. *Eur J Biochem* 247: 725-32
- MINUZ P, DEGAN M, GAINO S, MENEGUZZI A, ZULIANI V, SANTONASTASO CL, SOLDATO PD, LECHI A** (2001). NCX4016 (NO-Aspirin) has multiple inhibitory effects in LPS-stimulated human monocytes. *Br J Pharmacol* 134: 905-11
- MITCHELL JA & WARNER TD** (1999). Cyclo-oxygenase-2: pharmacology, physiology, biochemistry and relevance to NSAID therapy. *Br J Pharmacol* 128: 1121-32
- MIZUNO H, SAKAMOTO C, MATSUDA K, WADA K, UCHIDA T, NOGUCHI H, AKAMATSU T, KASUGA M** (1997). Induction of cyclooxygenase 2 in gastric mucosal lesions and its inhibition by the specific antagonist delays healing in mice. *Gastroenterology* 112: 387-97
- MOMI S, EMERSON M, PAUL W, LEONE M, MEZZASOMA AM, DEL SOLDATO P, PAGE CP, GRESELE P** (2000). Prevention of pulmonary thromboembolism by NCX 4016, a nitric oxide-releasing aspirin. *Eur J Pharmacol* 397: 177-85
- MORRIS R, SOUTHAM E, BRAID DJ, GARTHWAITE J** (1992). Nitric oxide may act as a messenger between dorsal root ganglion neurones and their satellite cells. *Neurosci Lett* 137: 29-32
- MOSLEY K, WEMBRIDGE DE, CATTELL V, COOK HT** (1998). Heme oxygenase is induced in nephrotoxic nephritis and hemin, a stimulator of heme oxygenase synthesis, ameliorates disease. *Kidney Int* 53: 672-8
- MOTTERLINI R, FORESTI R, INTAGLIETTA M, WINSLOW RM** (1996a). NO-mediated activation of heme oxygenase: endogenous cytoprotection against oxidative stress to endothelium. *Am J Physiol* 270: H107-14
- MOTTERLINI R, HIDALGO A, SAMMUT I, SHAH KA, MOHAMMED S, SRAI K, GREEN CJ** (1996b). A precursor of the nitric oxide donor SIN-1 modulates the stress protein heme oxygenase-1 in rat liver. *Biochem Biophys Res Commun* 225: 167-72
- MUKHERJEE D, NISSEN SE, TOPOL EJ** (2001). Risk of cardiovascular events associated with selective COX-2 inhibitors. *Jama* 286: 954-9
- MUSCARA MN & WALLACE JL** (1999). Nitric Oxide. V. therapeutic potential of nitric oxide donors and inhibitors. *Am J Physiol* 276: G1313-6
- MUSCARA MN, MCKNIGHT W, ASFAHA S, WALLACE JL** (2000a). Wound collagen deposition in rats: effects of an NO-NSAID and a selective COX-2 inhibitor. *Br J Pharmacol* 129: 681-6
- MUSCARA MN, MCKNIGHT W, LOVREN F, TRIGGLE CR, CIRINO G, WALLACE JL** (2000b). Antihypertensive properties of a nitric oxide-releasing naproxen derivative in two-kidney, one-clip rats. *Am J Physiol Heart Circ Physiol* 279: H528-35
- MUSCARA MN, LOVREN F, MCKNIGHT W, DICAY M, DEL SOLDATO P, TRIGGLE CR, WALLACE JL** (2001). Vasorelaxant effects of a nitric oxide-releasing aspirin derivative in normotensive and hypertensive rats. *Br J Pharmacol* 133: 1314-22
- NAPOLI C, CIRINO G, DEL SOLDATO P, SORRENTINO R, SICA V, CONDORELLI M, PINTO A, IGNARRO LJ** (2001). Effects of nitric oxide-releasing aspirin versus aspirin on restenosis in hypercholesterolemic mice. *Proc Natl Acad Sci U S A* 98: 2860-4
- NATH KA, BALLA G, VERCELLOTTI GM, BALLA J, JACOB HS, LEVITT MD, ROSENBERG ME** (1992). Induction of heme oxygenase is a rapid, protective response in rhabdomyolysis in the rat. *J Clin Invest* 90: 267-70
- NEEDLEMAN P & ISAKSON PC** (1997). The discovery and function of COX-2. *J Rheumatol* 24 Suppl 49: 6-8
- OBERLE S & SCHRÖDER H** (1997). Ferritin may mediate SIN-1-induced protection against oxidative stress. *Nitric Oxide* 1: 308-14
- OBERLE S, SCHWARTZ P, ABATE A, SCHRÖDER H** (1999). The antioxidant defense protein ferritin is a novel and specific target for pentaerythryl tetranitrate in endothelial cells. *Biochem Biophys Res Commun* 261: 28-34

- OTTERBEIN LE, MANTELL LL, CHOI AM** (1999). Carbon monoxide provides protection against hyperoxic lung injury. *Am J Physiol* 276: L688-94
- OTTERBEIN LE, BACH FH, ALAM J, SOARES M, TAO LU H, WYSK M, DAVIS RJ, FLAVELL RA, CHOI AM** (2000). Carbon monoxide has anti-inflammatory effects involving the mitogen-activated protein kinase pathway. *Nat Med* 6: 422-8
- OTTERBEIN LE & CHOI AM** (2000). Heme oxygenase: colors of defense against cellular stress. *Am J Physiol Lung Cell Mol Physiol* 279: L1029-37
- OTTERBEIN LE, ZUCKERBRAUN BS, HAGA M, LIU F, SONG R, USHEVA A, STACHULAK C, BODYAK N, SMITH RN, CSIZMADIA E, TYAGI S, AKAMATSU Y, FLAVELL RJ, BILLIAR TR, TZENG E, BACH FH, CHOI AM, SOARES MP** (2003). Carbon monoxide suppresses arteriosclerotic lesions associated with chronic graft rejection and with balloon injury. *Nat Med* 9: 183-90
- PAIMELA H, GODDARD PJ, SILEN W** (1995). Present views on restitution of gastrointestinal epithelium. *Dig Dis Sci* 40: 2495-6
- PARENTI A, MORBIDELLI L, CUI XL, DOUGLAS JG, HOOD JD, GRANGER HJ, LEDDA F, ZICHE M** (1998). Nitric oxide is an upstream signal of vascular endothelial growth factor-induced extracellular signal-regulated kinase1/2 activation in postcapillary endothelium. *J Biol Chem* 273: 4220-6
- PEARSON G, ROBINSON F, BEERS GIBSON T, XU BE, KARANDIKAR M, BERMAN K, COBB MH** (2001). Mitogen-activated protein (MAP) kinase pathways: regulation and physiological functions. *Endocr Rev* 22: 153-83
- PETRACHE I, OTTERBEIN LE, ALAM J, WIEGAND GW, CHOI AM** (2000). Heme oxygenase-1 inhibits TNF-alpha-induced apoptosis in cultured fibroblasts. *Am J Physiol Lung Cell Mol Physiol* 278: L312-9
- PFEILSCHIFTER J & HUWILER A** (1996). Nitric oxide stimulates stress-activated protein kinases in glomerular endothelial and mesangial cells. *FEBS Lett* 396: 67-70
- PILZ RB, SUHASINI M, IDRIS S, MEINKOTH JL, BOSS GR** (1995). Nitric oxide and cGMP analogs activate transcription from AP-1-responsive promoters in mammalian cells. *Faseb J* 9: 552-8
- POLTE T, OBERLE S, SCHRÖDER H** (1997). The nitric oxide donor SIN-1 protects endothelial cells from tumor necrosis factor-alpha-mediated cytotoxicity: possible role for cyclic GMP and heme oxygenase. *J Mol Cell Cardiol* 29: 3305-10
- POLTE T, ABATE A, DENNERY PA, SCHRÖDER H** (2000). Heme oxygenase-1 is a cGMP-inducible endothelial protein and mediates the cytoprotective action of nitric oxide. *Arterioscler Thromb Vasc Biol* 20: 1209-15
- POLTE T, HEMMERLE A, BERNDT G, GROSSER N, ABATE A, SCHRÖDER H** (2002). Atrial natriuretic peptide reduces cyclosporin toxicity in renal cells: role of cGMP and heme oxygenase-1. *Free Radic Biol Med* 32: 56-63
- POSS KD & TONEGAWA S** (1997a). Heme oxygenase 1 is required for mammalian iron reutilization. *Proc Natl Acad Sci U S A* 94: 10919-24
- POSS KD & TONEGAWA S** (1997b). Reduced stress defense in heme oxygenase 1-deficient cells. *Proc Natl Acad Sci U S A* 94: 10925-30
- PRADELLES P, GRASSI J, CHABARDES D, GUISO N** (1989). Enzyme immunoassays of adenosine cyclic 3',5'-monophosphate and guanosine cyclic 3',5'-monophosphate using acetylcholinesterase. *Anal Chem* 61: 447-53
- PRICHARD PJ, KITCHINGMAN GK, WALT RP, DANESHMEND TK, HAWKEY CJ** (1989). Human gastric mucosal bleeding induced by low dose aspirin, but not warfarin. *Br Med J* 289: 493-496
- PROSPERI C, SCALI C, PEPEU G, CASAMENTI F** (2001). NO-flurbiprofen attenuates excitotoxin-induced brain inflammation, and releases nitric oxide in the brain. *Jpn J Pharmacol* 86: 230-5
- RAINSFORD KD** (1999). Profile and mechanisms of gastrointestinal and other side effects of nonsteroidal anti-inflammatory drugs (NSAIDs). *Am J Med* 107: 27S-35S; discussion 35S-36S

- RAVE N, CRKVENJAKOV R, BOEDTKER H** (1979). Identification of procollagen mRNAs transferred to diazobenzyloxymethyl paper from formaldehyde agarose gels. *Nucleic Acids Res* 6: 3559-67
- REILLY IA & FITZGERALD GA** (1988). Aspirin in cardiovascular disease. *Drugs* 35: 154-76
- ROSSONI G, MUSCARA MN, CIRINO G, WALLACE JL** (2002). Inhibition of Cyclooxygenase-2 exacerbates ischaemia-induced myocardial dysfunction in the rabbit. *Br J Pharmacol* 135: 1540-1546
- RUBBO H, RADI R, TRUJILLO M, TELLERI R, KALYANARAMAN B, BARNES S, KIRK M, FREEMAN BA** (1994). Nitric oxide regulation of superoxide and peroxynitrite-dependent lipid peroxidation. Formation of novel nitrogen-containing oxidized lipid derivatives. *J Biol Chem* 269: 26066-75
- RYTER SW, OTTERBEIN LE, MORSE D, CHOI AM** (2002). Heme oxygenase/carbon monoxide signaling pathways: regulation and functional significance. *Mol Cell Biochem* 234-235: 249-63
- SAAVEDRA JE, BILLIAR TR, WILLIAMS DL, KIM YM, WATKINS SC, KEEFER LK** (1997). Targeting nitric oxide (NO) delivery in vivo. Design of a liver-selective NO donor prodrug that blocks tumor necrosis factor-alpha-induced apoptosis and toxicity in the liver. *J Med Chem* 40: 1947-54
- SAMBROOK J, FRITSCH EF, MANIATIS T** (1989). Molecular cloning: a laboratory manual. Cold Spring Harbor Laboratory, Cold Spring Harbor, New York.
- SANO H, HIRAI M, SAITO H, NAKASHIMA I, ISOBE KI** (1997). A nitric oxide-releasing reagent, S-nitroso-N-acetylpenicillamine, enhances the expression of superoxide dismutases mRNA in the murine macrophage cell line RAW264-7. *Immunology* 92: 118-22
- SANTUCCI L, FIORUCCI S, GIANANTI M, BRUNORI PM, DI MATTEO FM, MORELLI A** (1994). Pentoxifylline prevents indomethacin induced acute gastric mucosal damage in rats: role of tumour necrosis factor alpha. *Gut* 35: 909-15
- SCHAFFER MR, EFRON PA, THORNTON FJ, KLINGEL K, GROSS SS, BARBUL A** (1997). Nitric oxide, an autocrine regulator of wound fibroblast synthetic function. *J Immunol* 158: 2375-81
- SCHMASSMANN A, PESKAR BM, STETTLER C, NETZER P, STROFF T, FLOGERZI B, HALTER F** (1998). Effects of inhibition of prostaglandin endoperoxide synthase-2 in chronic gastro-intestinal ulcer models in rats. *Br J Pharmacol* 123: 795-804
- SCHOEN RT & VENDER RJ** (1989). Mechanisms of nonsteroidal anti-inflammatory drug-induced gastric damage. *Am J Med* 86: 449-458
- SCHRÖDER H, NEY P, WODITSCH I, SCHRÖR K** (1990). Cyclic GMP mediates SIN-1-induced inhibition of human polymorphonuclear leukocytes. *Eur J Pharmacol* 182: 211-8
- SCHRÖDER H & SCHRÖR K** (1990). Inhibitors of cytochrome P-450 reduce cyclic GMP stimulation by glyceryl trinitrate in LLC-PK1 kidney epithelial cells. *Naunyn Schmiedebergs Arch Pharmacol* 342: 616-8
- SCHRÖDER H** (1992). Cytochrome P-450 mediates bioactivation of organic nitrates. *J Pharmacol Exp Ther* 262: 298-302
- SCHWERTNER HA, JACKSON WG, TOLAN G** (1994). Association of low serum concentration of bilirubin with increased risk of coronary artery disease. *Clin Chem* 40: 18-23
- SCIORATI C, ROVERE P, FERRARINI M, HELTAI S, MANFREDI AA, CLEMENTI E** (1997). Autocrine nitric oxide modulates CD95-induced apoptosis in gammadelta T lymphocytes. *J Biol Chem* 272: 23211-5
- SEKIGUCHI M, SAKAKIBARA K, FUJII G** (1978). Establishment of cultured cell lines derived from a human gastric carcinoma. *Jpn J Exp Med* 48: 61-8
- SHEN YH, WANG XL, WILCKEN DE** (1998). Nitric oxide induces and inhibits apoptosis through different pathways. *FEBS Lett* 433: 125-31

- SHIBAHARA S, MUELLER R, TAGUCHI H, YOSHIDA T** (1985). Cloning and expression of cDNA for rat heme oxygenase. *Proc Natl Acad Sci U S A* 82: 7865-7869
- SILHAVY TJ, BERMAN ML, ENQUIST LW** (1984). Experiments with gene fusion, Cold Spring Harbor Laboratory, Cold Spring Harbor, New York.
- SILVERSTEIN FE, GRAHAM DY, SENIOR JR, DAVIES HW, STRUTHERS BJ, BITTMAN RM, GEIS GS** (1995). Misoprostol reduces serious gastrointestinal complications in patients with rheumatoid arthritis receiving nonsteroidal anti-inflammatory drugs. A randomized, double-blind, placebo-controlled trial. *Ann Intern Med* 123: 241-9
- SILVERSTEIN FE, FAICH G, GOLDSTEIN JL, SIMON LS, PINCUS T, WHELTON A, MAKUCH R, EISEN G, AGRAWAL NM, STENSON WF, BURR AM, ZHAO WW, KENT JD, LEFKOWITH JB, VERBURG KM, GEIS GS** (2000). Gastrointestinal toxicity with celecoxib vs nonsteroidal anti-inflammatory drugs for osteoarthritis and rheumatoid arthritis: the CLASS study: A randomized controlled trial. Celecoxib Long-term Arthritis Safety Study. *Jama* 284: 1247-55
- SIMON LS, HATOUM HT, BITTMAN RM, ARCHAMBAULT WT, POLISSON RP** (1996). Risk factors for serious nonsteroidal-induced gastrointestinal complications: regression analysis of the MUCOSA trial. *Fam Med* 28: 204-10
- SIOW RC, SATO H, MANN GE** (1999). Heme oxygenase-carbon monoxide signalling pathway in atherosclerosis: anti-atherogenic actions of bilirubin and carbon monoxide? *Cardiovasc Res* 41: 385-94
- So HS, PARK RK, KIM MS, LEE SR, JUNG BH, CHUNG SY, JUN CD, CHUNG HT** (1998). Nitric oxide inhibits c-Jun N-terminal kinase 2 (JNK2) via S-nitrosylation. *Biochem Biophys Res Commun* 247: 809-13
- SOARES MP, BROUARD S, SMITH RN, BACH FH** (2001). Heme oxygenase-1, a protective gene that prevents the rejection of transplanted organs. *Immunol Rev* 184: 275-85
- SOH J, MAO Y, LIU L, THOMPSON WJ, PAMUKCU R, WEINSTEIN IB** (2001). Protein Kinase G Activates the JNK1 Pathway via Phosphorylation of MEKK1. *The Journal of Biological Chemistry* 276: 16406-16410
- STAMLER JS, SINGEL DJ, LOSCALZO J** (1992). Biochemistry of nitric oxide and its redox-activated forms. *Science* 258: 1898-902
- STAMLER JS** (1994). Redox signaling: nitrosylation and related target interactions of nitric oxide. *Cell* 78: 931-6
- STEINER AA, BRANCO LG, CUNHA FQ, FERREIRA SH** (2001). Role of the haeme oxygenase/carbon monoxide pathway in mechanical nociceptor hypersensitivity. *Br J Pharmacol* 132: 1673-82
- STOCKER R, YAMAMOTO Y, MCDONAGH AF, GLAZER AN, AMES BN** (1987). Bilirubin is an antioxidant of possible physiological importance. *Science* 235: 1043-6
- TAKEUCHI K, UESHIMA K, HIRONAKA Y, FUJIOKA Y, MATSUMOTO J, OKABE S** (1991). Oxygen free radicals and lipid peroxidation in the pathogenesis of gastric mucosal lesions induced by indomethacin in rats. Relation to gastric hypermotility. *Digestion* 49: 175-84
- TARPEY MM, WHITE CR, SUAREZ E, RICHARDSON G, RADI R, FREEMAN BA** (1999). Chemiluminescent detection of oxidants in vascular tissue. Lucigenin but not coelenterazine enhances superoxide formation. *Circ Res* 84: 1203-11
- TERRY CM, CLIKEMAN JA, HOIDAL JR, CALLAHAN KS** (1998). Effect of tumor necrosis factor-alpha and interleukin-1 alpha on heme oxygenase-1 expression in human endothelial cells. *Am J Physiol* 274: H883-91
- THANOS D & MANIATIS T** (1995). Identification of the rel family members required for virus induction of the human beta interferon gene. *Mol Cell Biol* 15: 152-64
- TOWBIN H, STAHELIN T, GORDON J** (1979). Electrophoretic transfer of proteins from polyacrylamide gels to nitrocellulose sheets: procedure and some applications. *Proc Natl Acad Sci U S A* 76: 4350-4

- VAANANEN PM, MEDDINGS JB, WALLACE JL** (1991). Role of oxygen-derived free radicals in indomethacin-induced gastric injury. *Am J Physiol* 261: G470-5
- VANE JR** (1971). Inhibition of prostaglandin synthesis as a mechanism of action for aspirin-like drugs. *Nat New Biol* 231: 232-5
- VASQUEZ-VIVAR J, HOGG N, PRITCHARD KA, JR., MARTASEK P, KALYANARAMAN B** (1997). Superoxide anion formation from lucigenin: an electron spin resonance spin-trapping study. *FEBS Lett* 403: 127-30
- VINCENT SH** (1989). Oxidative effects of heme and porphyrins on proteins and lipids. *Semin Hematol* 26: 105-13
- VITEK L, JIRSA M, BRODANOVA M, KALAB M, MARECEK Z, DANZIG V, NOVOTNY L, KOTAL P** (2002). Gilbert syndrome and ischemic heart disease: a protective effect of elevated bilirubin levels. *Atherosclerosis* 160: 449-56
- WAGENER FA, EGGERT A, BOERMAN OC, OYEN WJ, VERHOFSTAD A, ABRAHAM NG, ADEMA G, VAN KOOYK Y, DE WITTE T, FIGDOR CG** (2001). Heme is a potent inducer of inflammation in mice and is counteracted by heme oxygenase. *Blood* 98: 1802-11
- WALDMAN SA & MURAD F** (1987). Cyclic GMP synthesis and function. *Pharmacol Rev* 39: 163-196
- WALLACE JL, REUTER B, CICALA C, MCKNIGHT W, GRISHAM MB, CIRINO G** (1994). Novel nonsteroidal anti-inflammatory drug derivatives with markedly reduced ulcerogenic properties in the rat. *Gastroenterology* 107: 173-9
- WALLACE JL, CIRINO G, MCKNIGHT W, ELLIOTT SN** (1995). Reduktion of gastrointestinal injury in acute endotoxic shock by flurbiprofen nitroxybutylester. *Eur J Pharmacol* 280: 63-68
- WALLACE JL & GRANGER DN** (1996). The cellular and molecular basis of gastric mucosal defense. *Faseb J* 10: 731-40
- WALLACE JL** (1997). Nonsteroidal anti-inflammatory drugs and gastroenteropathy: the second hundred years. *Gastroenterology* 112: 1000-16
- WALLACE JL, VERGNOLLE N, MUSCARA MN, ASFAHA S, CHAPMAN K, MCKNIGHT W, DEL SOLDATO P, MORELLI A, FIORUCCI S** (1999). Enhanced anti-inflammatory effects of a nitric oxide-releasing derivative of mesalamine in rats. *Gastroenterology* 117: 557-66
- WALLACE JL & MILLER MJ** (2000). Nitric oxide in mucosal defense: a little goes a long way. *Gastroenterology* 119: 512-20
- WALLACE JL** (2001). Nonsteroidal anti-inflammatory drugs and the gastrointestinal tract. Mechanisms of protection and healing: current knowledge and future research. *Am J Med* 110: 19S-23S
- WALLACE JL & MA L** (2001). Inflammatory mediators in gastrointestinal defense and injury. *Exp Biol Med (Maywood)* 226: 1003-15
- WALLACE JL, IGNARRO LJ, FIORUCCI S** (2002). Potential cardioprotective actions of no-releasing aspirin. *Nat Rev Drug Discov* 1: 375-82
- WALLACE JL & DEL SOLDATO P** (2003). The therapeutic potential of NO-NSAIDs. *Fundam Clin Pharmacol* 17: 11-20
- WASSERMAN WW & FAHL WE** (1997). Functional antioxidant responsive elements. *Proc Natl Acad Sci U S A* 94: 5361-6
- WEIR MR, SPERLING RS, REICIN A, GERTZ BJ** (2003). Selective COX-2 inhibition and cardiovascular effects: a review of the rofecoxib development program. *Am Heart J* 146: 591-604
- WHITTLE BJ** (2003). Gastrointestinal effects of nonsteroidal anti-inflammatory drugs. *Fundam Clin Pharmacol* 17: 301-13
- WIDMANN C, GIBSON S, JARPE MB, JOHNSON GL** (1999). Mitogen-activated protein kinase: conservation of a three-kinase module from yeast to human. *Physiol Rev* 79: 143-80

- WILD AC, MOINOVA HR, MULCAHY RT** (1999). Regulation of gamma-glutamylcysteine synthetase subunit gene expression by the transcription factor Nrf2. *J Biol Chem* 274: 33627-36
- WILLIS D, MOORE AR, FREDERICK R, WILLOUGHBY DA** (1996). Heme oxygenase: a novel target for the modulation of the inflammatory response. *Nat Med* 2: 87-90
- WINK DA, NIMS RW, DARBYSHIRE JF, CHRISTODOULOU D, HANBAUER I, COX GW, LAVAL F, LAVAL J, COOK JA, KRISHNA MC, ET AL.** (1994). Reaction kinetics for nitrosation of cysteine and glutathione in aerobic nitric oxide solutions at neutral pH. Insights into the fate and physiological effects of intermediates generated in the NO/O<sub>2</sub> reaction. *Chem Res Toxicol* 7: 519-25
- WINK DA, VODOVOTZ Y, GRISHAM MB, DEGRAFF W, COOK JC, PACELLI R, KRISHNA M, MITCHELL JB** (1999). Antioxidant effects of nitric oxide. *Methods Enzymol* 301: 413-24
- WOLFE MM, LICHTENSTEIN DR, SINGH G** (1999). Gastrointestinal toxicity of nonsteroidal antiinflammatory drugs. *N Engl J Med* 340: 1888-99
- YACHIE A, NIIDA Y, WADA T, IGARASHI N, KANEDA H, TOMA T, OHTA K, KASAHARA Y, KOIZUMI S** (1999). Oxidative stress causes enhanced endothelial cell injury in human heme oxygenase-1 deficiency. *J Clin Invest* 103: 129-35
- YET SF, TIAN R, LAYNE MD, WANG ZY, MAEMURA K, SOLOVYEVA M, ITH B, MELO LG, ZHANG L, INGWALL JS, DZAU VJ, LEE ME, PERRELLA MA** (2001). Cardiac-specific expression of heme oxygenase-1 protects against ischemia and reperfusion injury in transgenic mice. *Circ Res* 89: 168-73
- YU R, CHEN C, MO YY, HEBBAR V, OWUOR ED, TAN TH, KONG AN** (2000). Activation of mitogen-activated protein kinase pathways induces antioxidant response element-mediated gene expression via a Nrf2-dependent mechanism. *J Biol Chem* 275: 39907-13
- YUAN R, SUMI M, BENET LZ** (1997). Investigation of aortic CYP3A bioactivation of nitroglycerin in vivo. *J Pharmacol Exp Ther* 281: 1499-505
- ZHANG X, BEDARD EL, POTTER R, ZHONG R, ALAM J, CHOI AM, LEE PJ** (2002). Mitogen-activated protein kinases regulate HO-1 gene transcription after ischemia-reperfusion lung injury. *Am J Physiol Lung Cell Mol Physiol* 283: L815-29
- ZIMMERMANN KC, SARBIA M, SCHRÖR K, WEBER AA** (1998). Constitutive cyclooxygenase-2 expression in healthy human and rabbit gastric mucosa. *Mol Pharmacol* 54: 536-40