

Tumour / Cancer

- Busch TM., Wang H-W., Wileyto EP., Yu G. and Bunte RM** (2010) Increasing damage to tumor blood vessels during motexafin lutetium-PDT through use of low fluence rate. *Radiation Research* In-Press.
- Myers AL, Williams RF, Ng CY, Hartwich JE and Davidoff AM** (2010). Bevacizumab-induced tumor vessel remodeling in rhabdomyosarcoma xenografts increases the effectiveness of adjuvant ionizing radiation. *J Pediatr Surg* 5, 1080-5
- Sims TL, McGee M, Williams RF, Myers AL, Tracey L, Hamner JB, Ng C, Wu J, Gaber MW, McCarville B, Nathwani AC and Davidoff AM** 2010. IFN-beta restricts tumor growth and sensitizes alveolar rhabdomyosarcoma to ionizing radiation. *Mol Cancer Ther* 9(3):761-71
- Bejota R, Kersemans V, Kelly C, Carroll L, King RC and Gouverneur V** (2010). Pre-clinical evaluation of a 3-nitro-1,2,4-triazole analogue of [18F]FMISO as hypoxia-selective tracer for PET. *Nucl Med Biol* 37(5), 565-575
- Ostrander JH, McMahon CM, Lem S, Millon SR, Brown JQ, Seewaldt VL, Ramanujam N** (2010). Optical redox ratio differentiates breast cancer cell lines based on estrogen receptor status. *Cancer Res* 70(11), 4759-66
- Epel B, Hleihel D, Barth ED and Halpern HJ** (2010). Electron paramagnetic resonance oxygen imaging of a rabbit tumor using localized spin probe delivery. *Med. Phys.* 37, 2553-59
- Bartlett R, Zanzonico P, Carlin S, Chen S, Roble G, O'Donoghue J, Beattie B, Narayanan M, Georgi J-C and Humm JL** (2010). Kinetic modeling of [18F]-FMISO microPET data and its correlation with image-guided pO2 measurements. *J Nucl Med* 51 (Supplement 2):232
- Wang W, Lee NY, Georgi J-C, Narayanan M, Guillem J, Schöder H and Humm JL** (2010). Pharmacokinetic analysis of hypoxia 18F-Fluoromisonidazole dynamic PET in head and neck cancer. *J Nucl Med* 51(1), 37-45
- Palmer GM, Viola RJ, Schroeder T, Yarmolenko PS, Dewhirst MW and Ramanujam N** (2009). Quantitative diffuse reflectance and fluorescence spectroscopy: tool to monitor tumor physiology in vivo. *J Biomed Opt* 14, 024010
- Bechet D, Tirand L, Faivre B, Plénat F, Bonnet C, Bastogne T, Frochet C, Guillem F and Barberi-Heyob M** (2009). Neurokinin-1 targeting photosensitization-induced early stages of thrombosis via tissue factor release. *Pharm Research* 27(3), 468-479
- Hardee ME, Eapen RJ, Rabbani ZN, Dreher MR, Marks J, Blackwell KL and Dewhirst MW** (2009). Her2/neu signaling blockade improves tumor oxygenation in a multifactorial fashion in Her2/neu+ tumors. *Cancer Chemother Pharmacol* 63, 219-28
- Jordan BF, Cron GO and Gallez B** (2009). Rapid monitoring of oxygenation by 19F magnetic resonance imaging: Simultaneous comparison with fluorescence quenching. *Magn Reson Med* 61, 634-8
- Hou H, Lariviere JP, Demidenko E, Gladstone D, Swartz H and Khan N** (2009). Repeated tumor pO2 measurements by multi-site EPR oximetry as a prognostic marker for enhanced therapeutic efficacy of fractionated radiotherapy. *Radiother Oncol* 91, 126-31
- Moriyama EH, Niedre MJ, Jarvi MT, Mocanu JD, Moriyama Y, Subarsky P, Li B, Lilge LD and Wilson BC** (2008). The influence of hypoxia on bioluminescence in luciferase-transfected gliosarcoma tumor cells in vitro. *Photochem Photobiol Sci* 7, 675-680
- Seshadri M, Bellnier DA, Vaughan LA, Sperryak JA, Mazurchuk R, Foster TH and Henderson BW** (2008). Light delivery over extended time periods enhances the effectiveness of photodynamic therapy. *Clin Cancer Res* 14, 2796-2805
- Zhang M, Huang M, Le C, Zanzonico PB, Claus F, Kolbert KS, Martin K, Ling CC, Koutcher JA and Humm JL** (2008). Accuracy and reproducibility of tumor positioning during prolonged and multi-modality animal imaging studies. *Phys Med Biol* 53, 5867-82
- Elas M, Bell R, Hleihel D, Barth ED, McFaul C, Haney CR, Bielanska J, Pustelny K, Ahn KH, Pelizzari CA, Kocherginsky M and Halpern HJ** (2008). Electron paramagnetic resonance oxygen image hypoxic fraction plus radiation dose strongly correlates with tumor cure in FSa fibrosarcomas. *Int J Radiat Oncol Biol Phys* 71, 542-9
- Chan LS, Malcontenti-Wilson C, Muralidharan V and Christophi C** (2008). Alterations in vascular architecture and permeability following OX4503 treatment *Anticancer Drugs* 19, 17-22
- Fels DR, Ye J, Segan AT, Kridel SJ, Spiotto M, Olson M, Koong AC and Koumenis C** (2008). Preferential cytotoxicity of bortezomib toward hypoxic tumor cells via overactivation of endoplasmic reticulum stress pathways. *Cancer Res* 68, 9323-30
- Chan N, Koritzinsky M, Zhao H, Bindra R, Glazer PM, Powell S, Belmaaza A, Wouters B and Bristow RG** (2008) Chronic hypoxia decreases synthesis of homologous recombination proteins to offset chemoresistance and radioresistance. *Cancer Res* 68, 605-14
- Bayly SR, King RC, Honess DJ, Barnard PJ, Betts HM, Holland JP, Hueting R, Bonnitche PD, Dilworth JR, Aigbirhio FI and Christlieb M** (2008). In vitro and in vivo evaluations of a hydrophilic 64Cu-bis(thiosemicarbazone)-glucose conjugate for hypoxia imaging. *J Nucl Med* 49, 1862-8
- Riedl CK, Brader P, Zanzonico PB, Chun YS, Woo Y, Singh P, Carlin S, Wen B, Ling CC, Hricak H and Fong Y** (2008) Imaging hypoxia in orthotopic rat liver tumors with iodine 124-labeled iodoazomycin galactopyranoside PET. *Radiology* 248, 561-70
- Gulliksrud K, Vestvik IK, Galappathi K, Mathiesen B and Rofstad EK** (2008). Detection of different hypoxic cell subpopulations in human melanoma xenografts by pimonidazole immunohistochemistry. *Radiat Res* 170, 638-50
- Sersa G, Jarm T, Kotnik T, Coer A, Podkrajsek M, Sentjurs M, Miklavcic D, Kadivec M, Kranjc S, Secerov A and Cemazar M** (2008). Vascular disrupting action of electroporation and electrochemotherapy with bleomycin in murine sarcoma. *Br J Cancer* 98,388-98
- Via LE, LinPL, Ray SM, Carrillo J, Allen SS, Eum SY, Taylor K, Klein E, Manjunatha U, Gonzales J, Lee EG, Park SK, Raleigh JA, Cho SN, McMurray DN, Flynn JL and Barry CE 3rd** (2008). Tuberculous granulomas are hypoxic in guinea pigs, rabbits, and non-human primates. *Infect Immun* 76, 2333-40
- Ceelen W, Boterberg T, Smeets P, van Damme N, Demetter P, Zwaenepoel O, Cesteley L, Houtmeyers P, Peeters M and Pattyn P** (2007). Recombinant human erythropoietin modulates the effects of radiotherapy on colorectal cancer microvessels. *British Journal of Cancer* 96, 692-700
- Raman V, Artemov D, Pathak AP, Winnard PT Jr, McNutt S, Yudina A, Bogdanov A Jr and Bhujwalla ZN** (2006). Characterizing vascular parameters in hypoxic regions: a combined magnetic resonance and optical imaging study of a human prostate cancer model. *Cancer Res* 66, 9929-36
- Ceelen W, Smeets P, Backes W, Van Damme N, Boterberg T, Demetter P, Bouckenoghe I, De Visschere M, Peeters M and Pattyn P** (2006). Noninvasive monitoring of radiotherapy-induced microvascular changes using dynamic contrast enhanced magnetic resonance imaging (DCE-MRI). in a colorectal tumor model. *Int J Radiat Oncol Biol Phys* 64, 1188-96
- Nikfarjam M, Muralidharan V, Malcontenti-Wilson C, McLaren W and Christophi C** (2006). Impact of blood flow occlusion on liver necrosis following thermal ablation. *ANZ J Surg* 76, 84-9
- Skliarenko JV, Lunt SJ, Gordon ML, Vitkin A, Milosevic M and Hill RP** (2006). Effects of the vascular disrupting agent ZD6126 on interstitial fluid pressure and cell survival in tumors. *Cancer Res* 66, 2074-80
- Wen B, Muneyasu U, O'Donoghue JA and Ling CC** (2006). Measurements of partial oxygen pressure pO2 using the OxyLite system in R3327-AT tumors under isoflurane anesthesia. *Radiat Res* 166, 512-518
- Martine P, De Wever J, Bouzin C, Baudelet C, Sonveaux P, Gregoire V, Gallez B and Feron O** (2006). Reversal of temporal and spatial heterogeneities in tumor perfusion identifies the tumour vascular tone as a tunable variable to improve drug delivery. *Mol Cancer Ther* 5, 1620-27
- Brurberg KG, Thuen M, Ruud EB and Rofstad EK** (2006). Fluctuations in pO2 in irradiated human melanoma xenografts. *Radiat Res* 165, 16-25
- Crokart N, Jordan BF, Baudelet C, Ansiaux R, Sonveaux P, Grégoire V, Beghein N, DeWever J, Bouzin C, Feron O, Gallez B** (2005). Early reoxygenation in tumors after irradiation: determining factors and consequences for radiotherapy regimens using daily multiple fractions. *Int J Radiat Oncol Biol Phys* 63, 901-10
- Nikfarjam M, Muralidharan V, Malcontenti-Wilson C, Christophi C** (2005). Progressive microvascular injury in liver and colorectal liver metastases following laser induced focal hyperthermia therapy. *Lasers Surg Med* 37, 64-73
- Daruwalla J, Nikfarjam M, Malcontenti-Wilson C, Muralidharan V, Christophi C** (2005). Effect of thalidomide on colorectal cancer liver metastases in CBA mice. *J Surg Oncol* 91, 134-40
- Brurberg KG, Skogmo HK, Graff BA, Olsen DR, Rofstad EK** (2005). Fluctuations in pO2 in poorly and well-oxygenated spontaneous canine tumors before and during fractionated radiation therapy. *Radiother Oncol* 77, 220-226
- Wachsberger PR, Burd R, Marero N, Daskalakis C, Ryan A, McCue P and Dicker AP** (2005). Effect of the tumor vascular-damaging agent, ZD6126, on the radioresponse of U87 glioblastoma. *Clin Cancer Res* 15, 835-42
- O'Donoghue JA, Zanzonico P, Pugachev A, Wen B, Smith-Jones P, Cai S, Burnazi E, Finn RD, Burgman P, Ruan S, Lewis JS, Welch MJ and Ling CC** (2005). Assessment of regional tumor hypoxia using ¹²⁵I-fluoromisonidazole and ⁶⁴Cu(II)-diacetyl-bis(N-methylthiosemicarbazone) PET: comparative study featuring MicroPET imaging, pO2 probe measurement, autoradiography, and fluorescent microscopy in the R3327-AT and FaDu rat tumor models. *Int J Rad Onc Biol Phys* 61, 1493-1502
- Sonveaux P, Kaz AM, Snyder SA, Rixchardson RA, Cardenas-Navia LI, Braun RD, Pawloski JR, Tozer GM, Bonaventura J, McMahon TJ, Stamler JS and Dewhirst MW** (2005). Oxygen regulation of tumor perfusion by S-nitrosohemoglobin reveals a suppressor activity of nitric oxide. *Circ. Res* 96, 1119-22
- Kalliomäki T and Hill RP** (2004). Effects of tumor acidification with glucose-MIBG on the spontaneous metastatic potential of two murine cell lines. *British Journal of Cancer* 90, 1842-1849
- Kostourou V, Troy H, Murray JF, Cullis ER, Whitley GS, Griffiths JR, Robinson SP** (2004). Overexpression of dimethylarginine dimethylaminohydrolase enhances tumor hypoxia: an insight into the relationship of hypoxia and angiogenesis in vivo. *Neoplasia* 6, 401-11
- Baudelet C and Gallez B** (2004). Effect of anesthesia on the signal intensity in tumors using BOLD-MRI: Comparison with flow measurements by laser Doppler flowmetry and oxygen measurements by luminescence-based probes. *Magn Reson Imaging* 22, 905-12
- Barthel H, Wilson H, Collingridge DR, Brown G, Osman S, Luthra SK, Brady F, Workman P, Price PM and Abaogye EO** (2004). In vivo evaluation of [¹⁸F]fluroetanidazole as a new marker for imaging tumour hypoxia with positron emission tomography. *British Journal of Cancer* 90, 2232-2242
- Jordan BF, Sonveaux P, Feron O, Gregoire V, Beghein N, Dessy C and Gallez B** (2004). Nitric oxide as a radiosensitizer: evidence for an intrinsic role in addition to its effect on oxygen delivery and consumption. *Int J Cancer* 109, 769-773
- Kostourou V, Troy H, Murray JF, Cullis ER, Whitley GJ, Griffiths JR and Robinson SP** (2004). Overexpression of dimethylarginine dimethylaminohydrolase enhances tumor hypoxia: an insight into the relationship of hypoxia and angiogenesis in vivo. *Neoplasia* 6, 401-411
- Brurberg KG, Graff BA, Olsen DR and Rofstad EK** (2004). Tumor-line specific pO2 fluctuations in human melanoma xenografts. *Int J Radiat Oncol Biol Phys* 58, 403-09
- Huang Z, Chen Q, Trncic N, LaRue SM, Brun PH, Wilson BC, Shapiro H and Hetzel FW** (2004). Effects of Pd-bacteriopheophorbide (TOOKAD)-mediated photodynamic therapy on canine prostate pretreated with ionizing radiation. *Radiation Research* 161, 723-31
- Hicks KO, Siim BG, Pruijn FB and Wilson WR** (2004). Oxygen dependence of the metabolic activation and cytotoxicity of tirapazamine: implications for extra-vascular transport and activity in tumors. *Radiation Research* 161, 656-666
- Folkes LK and Wardman M** (2003). Enhancing the efficacy of photodynamic cancer therapy by radicals from plant Auxin (Indole-3-Acetic Acid). *Cancer Res* 63, 776-79
- Gu Y, Bourke VA, Kim JG, Constantinescu A, Mason RP and Liu H** (2003). Dynamic response of breast tumor oxygenation to hyperoxic respiratory challenge monitored with three oxygen-sensitive parameters. *Appl Opt* 42, 2960-67
- Chen B, Ahmed B, Landuyt W, Ni Y, Gaspar R, Roskams T and de Witte P** (2003). Potentiation of photodynamic therapy with hypericin by mitomycin C in the radiation-induced fibrosarcoma-1 mouse tumor model. *Photochem Photobiol* 78, 278-82
- Huang Z, Chen Q, Shakil A, Chen H, Beckers J, Shapiro H and Hetzel F W** (2003). Hyperoxygenation enhances the tumor cell killing of photofrin-mediated photodynamic therapy. *Photochem Photobiol* 78, 496-502
- Zanzonico P, O'Donoghue J, Chapman, JD, Schneider R, Cai S, Larson S, Wen B, Chen Y, Finn R, Ruan S, Gerweck L, Humm J and Ling C** (2003). Iodine-124-labeled iodo-azomycin-galactoside imaging of tumor hypoxia in mice with serial microPET scanning. *Eur J Nucl Med Mol Imaging* 31, 117-128
- Blackwell KL, Kirkpatrick JP, Snyder SA, Broadwater G, Farrell F, Jolliffe L, Brizel DM and Dewhirst MW** (2003). Human recombinant erythropoietin significantly improves tumor oxygenation independent of its effects on hemoglobin. *Cancer Res* 63, 6162-65
- Brurberg KG, Graff BA and Rofstad EK** (2003). Temporal heterogeneity in oxygen tension in human melanoma xenografts. *British Journal of Cancer* 89, 350-56
- Jordan BF, Sonveaux P, Feron O, Gregoire V, Beghein N and Gallez B** (2003). Nitric oxide-mediated increase in tumor blood flow and oxygenation of tumors implanted in muscles stimulated by electric pulses. *Int J Radiat Oncol Biol Phys* 55, 1066-73
- Jarm T, Podobnik B, Sersa G and Miklavcic D** (2003). Effect of hydralazine on blood flow, oxygenation, and interstitial fluid pressure in subcutaneous tumors. *Adv Exp Med Biol* 510, 25-29
- Burd R, Lavorgna SN, Daskalakis C, Wachsberger PR, Wahl ML, Biaglow JE, Stevens CW and Leeper DB** (2003). Tumor oxygenation and acidification are increased in melanoma xenografts after exposure to hyperglycemia and meta-iodo-benzylguanidine. *Radiat Res* 159, 328-335
- Jordan BF, Beghein N, Aubry M, Gregoire V and Gallez B** (2003). Potentiation of radiation-induced regrowth delay by isosorbide dinitrate in FSa murine tumors. *Int J Cancer* 103, 138-41
- Baudelet C and Gallez B** (2002). How does blood oxygen level-dependent (BOLD) contrast correlate with oxygen partial pressure (pO2) inside tumors? *Magn Reson Med* 48, 980-986
- Demeure RJ, Jordan BF, Yang QX, Beghein N, Smith MB, Gregoire V and Gallez B** (2002). Removal of local field gradient artefacts in BOLD contrast imaging of head and neck tumours. *Phys Med Biol* 47, 1819-25
- Urano M, Chen Y, Humm J, Koutcher JA, Zanzonico P and Ling C** (2002). Measurements of tumor tissue oxygen tension using a time-resolved luminescence-based optical OxyLite probe: comparison with a paired survival assay. *Radiat Res* 158, 167-173

Jarm T, Sersa G and Miklavcic D (2002). Oxygenation and blood flow in tumors treated with hydralazine: evaluation with a novel luminescence-based fiber-optic sensor. *Technol Health Care* 10, 363-80

Jordan BF, Gregoire V, Demeure RJ, Sonveaux P, Feron O, O'Hara J, Vanhulle VP, Delzenne N and Gallez B (2002). Insulin increases the sensitivity of tumors to irradiation: involvement of an increase in tumor oxygenation mediated by a nitric oxide-dependent decrease of the tumor cells oxygen consumption. *Cancer Res* 62, 3555-3561

Cairns RA, Kalliomaki T and Hill RP (2001). Acute (cyclic) hypoxia enhances spontaneous metastasis of KHT murine tumors. *Cancer Res* 15, 8903-08

Zhao D, Constantinescu A, Hahn EW and Mason RP (2001). Tumor oxygen dynamics with respect to growth and respiratory challenge: investigation of the Dunning prostate R3327-HI tumor. *Radiat Res* 156, 510-520

Jarm T, Lesnicar H, Sersa G and Miklavcic D (2001). First experience with a novel luminescence-based optical sensor for measurement of oxygenation in tumors. *Radiol Oncol* 35, 277-291

Braun RD, Lanzen JL, Snyder SA and Dewhirst MW (2001). Comparison of tumor and normal tissue oxygen tension measurements using OxyLite or microelectrodes in rodents. *Am J Physiol Heart Circ Physiol* 280, H2533-44

Neeman M, Dafni H, Bukhari O, Braun RD and Dewhirst MW (2001). In vivo BOLD contrast MRI mapping of subcutaneous vascular function and maturation: validation by intravital microscopy. *Magn Reson Med* 45, 887-898

Bussink J, Kaanders JHAM, Strik AM and Van der Kogel AJ (2000). Effects of nicotinamide and carbogen on oxygenation in human tumor xenografts measured with luminescence-based fiber-optic probes. *Radiother Oncol* 57, 21-30

Dewhirst MW, Klitzman B, Braun RD, Brizel DM, Haroon ZA and Secomb TW (2000). Review of methods used to study oxygen transport at the microcirculatory level. *Int J Cancer* 90, 237-55

Bussink J, Kaanders JHAM, Strik AM, Vojnovic B and Van der Kogel AJ (2000). Optical sensor based oxygen tension measurements correspond with hypoxic marker binding in three human tumor xenograft lines. *Radiat Res* 154, 547-555

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Spiotto MT, Banh A, Papandreou I, Cao H, Galvez MG, Gurtner GC, Denko NC, Le QT and Koong AC (2010). Imaging the unfolded protein response in primary tumors reveals microenvironments with metabolic variations that predict tumor growth. *Cancer Res* 70(1), 78-88

Hsi-Hsing Y, Ching-Ping C, Juei-Tang C and Lin MT (2010). Inhibition of acute lung inflammation and injury is a target of brain cooling after heatstroke injury. *J Trauma*. 2010 Apr 15. [Epub ahead of print]

Ragoonanan TE et al. (2009). Metoprolol reduces cerebral tissue oxygen tension after acute hemodilution in rats. *Anesthesiology* 111, 988-1000

Liu CC, Cheng BC, Lin MT and Lin HJ (2009). Small volume resuscitation in a rat model of heatstroke. *Am J Med Sci* 337, 79-87

Shen YC, Wang YH, Chou YC, Liou KT, Yen JC, Wang WY and Liao JF (2008). Dimemoran protects rats against ischemic stroke through activation of sigma-1 receptor-mediated mechanisms by decreasing glutamate accumulation. *J Neurochem* 104, 558-72

Englot DJ, Mishra AM, Mansuripur PK, Herman P, Hyder F and Blumenfeld H (2008). Remote effects of focal hippocampal seizures on the rat neocortex. *J Neurosci* 28, 9066-81

Hwang WS, Chen SH, Lin CH, Chang HK, Chen WC and Lin MT (2008). Human umbilical cord blood-derived CD34+ cells can be used as a prophylactic agent for experimental heatstroke. *Journal of Pharmacological Sciences* 106, 46-55

Gormana D and Huang YL (2008). Haeme oxygenase and nitric oxide synthetase blockade and brain blood flow in sheep exposed to carbon monoxide. *Neuroscience Letters* 444, 203-207

Strbian D, Durukan A, Pitkonen M, Marinkovic I, Tattisumak E, Pedrono E, Abo-Ramadan U and Tattisumak T (2008). The blood-brain barrier is continuously open for several weeks following transient focal cerebral ischemia. *Neuroscience* 153, 175-181

Baker J, Park E, Hare GMT, Liu E, Sikich N and Mazer CD (2008). Effects of resuscitation fluid on neurologic physiology after cerebral trauma and hemorrhage. *J Trauma* 64, 348-357

Rigamonti A, McLaren AT, Mazer DC, Nix K, Ragoonanan T, Freedman J, Harrington A and Hare GMT (2008). Storage of strain-specific rat blood limits cerebral tissue oxygen delivery during acute fluid resuscitation. *Br J Anaesth*. 100, 357-64

Petrushanko IY, Bogdanov NB, Lapina N, Boldyrev AA, Gassmann M and Bogdanova AY (2007). Oxygen-induced regulation of Na/K ATPase in cerebellar granule cells. *J Gen Physiol* 130, 389-398

Chen SH, Chang FM, Chang HK, Chen WC, Huang KF and Lin MT (2007). Human umbilical cord blood-derived CD34+ cells cause attenuation of multi-organ dysfunction during experimental heatstroke. *Shock* 27, 663-71

Pena JP, Tomimatsu T, Hatran DP, McGill LL and Longo LD (2007). Cerebral blood flow and oxygenation in ovine fetus: responses to superimposed hypoxia at both low and high altitude. *J Physiol* 578, 359-70

Tomimatsu T, Pereyra Peña JL and Longo LD (2007). Fetal cerebral oxygenation: the role of maternal hyperoxia with supplemental CO2 in sheep. *Am J Obstet Gynecol*. 196, 359.e1-5.

Tomimatsu T, Pereyra Peña JL and Longo LD (2007). Fetal hypercapnia in high altitude acclimatized sheep: cerebral blood flow and cerebral oxygenation. *Reprod Sci* 17, 1-8

Pereyra Peña JL, Tomimatsu T, Hatran DP, McGill LL and Longo LD (2007). Cerebral blood flow and oxygenation in the ovine fetus: responses to superimposed hypoxia at both low and high altitude. *J Physiol (Lond)*. 578, 359-370

Jensen EC, Bennet L, Hunter CJ, Power GC and Gunn AJ (2006). Post-hypoxic hypoperfusion is associated with suppression of cerebral metabolism and increased tissue oxygenation in near-term fetal sheep. *J Physiol*. 572, 131-39

Li M, Ratcliffe SJ, Knoll F, Wu J, Ances B, Mardini W and Floyd TF (2006). Aging: impact upon local cerebral oxygenation and blood flow with acute isovolemic hemodilution. *J Neurosurg Anesthesiol* 18, 125-31

Chen SH, Chang FM, Niu KC, Lin MY and Lin MT (2006). Resuscitation from experimental heatstroke by estrogen therapy. *Crit Care Med* 34, 1113-18

Chen TY, Lee MY, Chen HY, Kuo YL, Lin SC, Wu TS and Lee EJ (2006). Melatonin attenuates the post-ischemic increase in blood-brain barrier permeability and decreases hemorrhagic transformation of tissue-plasminogen activator therapy following ischemic stroke in mice. *J Pineal Res* 40, 242-50

Hsu SF, Niu KC, Lin CL and Lin MT (2006). Brain cooling causes attenuation of cerebral oxidative stress, systemic inflammation, activated coagulation, and tissue ischemia/injury during heatstroke. *Shock* 26, 210-20

Lee WC, Wen HC, Chang CP, Chen MY and Lin MT (2006). Heat shock protein 72 overexpression protects against hyperthermia, circulatory shock, and cerebral ischemia during heatstroke. *J Appl Physiol* 100, 2073-82

Tomimatsu T, Pereyra-Peña JL and Longo LD (2006). Fetal hypercapnia and cerebral oxygenation: studies in near-term sheep. *Pediatr Res* 60, 711-716

Hare GMT, Worrall JMA, Baker AJ, Liu E, Sikich N and Mazer CD (2006). β_2 adrenergic antagonist inhibits cerebral cortical oxygen delivery after severe haemodilution in rats. *British Journal of Anaesthesia* 97, 617-23

Hare GMT, Harrington A, Liu E, Wang JL, Baker AJ, and Mazer CD (2006). Effect of oxygen affinity and molecular weight of HBOCs on cerebral oxygenation and blood pressure in rats. *Can J Anesth* 53, 1030-1038

Chen H-Y, Chen T_Y, Lee M-Y, Chen S-T, Hsu Y-S, Kuo Y-LL, Chang G-L, Wu T-S and Lee E-J (2006). Melatonin decreases neurovascular oxidative/nitrosative damage and protects against early increases in the blood-brain barrier permeability after transient focal cerebral ischemia in mice. *J Pineal Res* 41, 175-182

Strbian D, Karjalainen-Lindsberg M-L, Tattisumak T and Lindsberg PJ (2006). Cerebral mast cells regulate early ischemic brain swelling and neutrophil accumulation. *J Cereb Blood Flow Metab*. 26, 605-12

Hermán P, Trübel HKF and Hyder F (2006). A multi-parametric assessment of oxygen efflux from the brain. *J Cereb Blood Flow Metab* 26, 79-91

Trübel HKF, Sacolick LI and Hyder F (2006). Regional temperature changes in the brain during somatosensory stimulation. *J Cereb Blood Flow Metab* 26, 68-78

Woitzik J, Schneider UC, Thomé J, Schroeck H and Schilling L (2006). Comparison of different intravascular thread occlusion models for experimental stroke in rats. *RJ Neuroscience Methods* 151, 224-231

Tomimatsu T, Pereyra Peña JL, Hatran DP and Longo LD (2006). Maternal oxygen administration and fetal cerebral oxygenation: studies on near-term fetal lambs at both low and high altitude. *Am J Obstet Gynecol* 195, 535-541

Lee JJ, Lin MT, Wang NL, Lin CL and Chang CK (2005). Platonin, a cyanine photosensitizing dye, causes attenuation of circulatory shock, hypercoagulable state, and tissue ischemia during heat stroke. *Shock*. 24, 577-82

Wang NL, Chang CK, Liou YL, Lin CL and Lin MT (2005). Shengmai San, a Chinese herbal medicine protects against rat heat stroke by reducing inflammatory cytokines and nitric oxide formation. *J Pharmacol Sci*. 98, Epub May 7

Lyng K, Braakhuus M, Froen JF, Stray-Pedersen B, Saugstad OD (2005). Inflammation increases vulnerability to hypoxia in newborn piglets: effect of reoxygenation with 21% and 100% O2. *Am J Obstet Gynecol* 192(4), 1172-8

Wang NL, Liou YL, Lin MT, Lin CL and Chang CK (2005). Chinese herbal medicine, Shengmai San, is effective for improving circulatory shock and oxidative damage in the brain during heatstroke. *J Pharmacol Sci* 97, 253-65

Wang JL, Ke DS and Lin MT (2005). Heat shock pre-treatment may protect against heatstroke – induced circulatory shock and cerebral ischemia by reducing oxidative stress and energy depletion. *Shock* 23, 161-7

Chang CP, Chen SH, Lin MT (2005). Ipsapirone and ketanserin protects against circulatory shock, intracranial hypertension, and cerebral ischemia during heatstroke. *Shock* 24, 336-40

Lin MT, Chen SH, Chang FM, Tsai YC and Huang KF (2005). Resuscitation from experimental heatstroke by transplantation of human umbilical cord blood cells. *Crit Care Med* 33, 1377-83

O'Hara J A, Hou H, Demidenko E, Springett RJ, Khan N and Swartz HM (2005). Simultaneous measurement of rat brain cortex PtO₂ using EPR oximetry and a fluorescence fibre-optic sensor during normoxia and hyperoxia. *Physiol Meas* 26, 203-13

Wen Y-S, Huang M-S, Lin M-T and Lee C-H (2005). Rapid brain cooling by hypothermic retrograde jugular vein flush. *J Trauma* 58, 577-581

Gonzalez H, Hunter CJ, Bennet L, Power GG and Gunn AJ (2005). Cerebral oxygenation during post-asphyxial seizures in near-term fetal sheep. *J Cereb Blood Flow Metab* 25, 911-918

Nurmi A, Vartiainen M, Pihlaja R, Golsteins G, Yrjanheikki J and Koistinaho J (2004). Pyrrolidine dithiocarbamate inhibits translocation of nuclear factor kappa-B in neurons and protects against brain ischaemia with a wide therapeutic time window. *J Neurochem* 91, 755-65

Fabian RH, Perez-Polo JR and Kent T (2004). Extracellular superoxide concentration increases following cerebral hypoxia but does not affect cerebral blood flow. *Intl J Devl Neuroscience* 22, 225-230

Liu C-C, Ke D, Chen Z-C and Lin M-T (2004). Hydroxyethyl starch produces attenuation of circulatory shock and cerebral ischemia during heatstroke. *Shock* 22, 288-294

Nersesyan H, Herman P, Erdogan E, Hyder F and Blumenfeld H (2004). Relative changes in cerebral blood flow and neuronal activity in local microdomains during generalized seizures. *J Cereb Blood Flow Metab* 24, 1057-1068

Trubel H, Herman P, Kampmann C, Huth R, Maciejewski PK, Novotny E and Hyder F (2004). A novel approach for selective brain cooling: implications for hypercapnia and seizure activity. *Intensive Care Med* 30, 1829-1833

Trubel H, Herman P, Kampmann C, Novotny E and Hyder F (2004) Duration of induced seizures during selective pharyngeal brain cooling. *Biomed Technik* 49, 278-280

Chang CK, Chiu WT, Chang CP and Lin MT (2004). Effect of hypervolemic haemodilution on cerebral glutamate, glycerol, lactate and free radicals in heatstroke rats. *Clin Sci (Lond)*. 106, 501-9

Trubel H, Maciejewski PK, Farber JH and Hyder F (2004). Brain temperature measured by 1H-NMR in conjunction with a lanthanide complex. *J Appl Physiol* 94, 1641-1649

Nwaigwe CI, Roche MA, Grinberg O and Dunn JF (2003). Brain tissue and sagittal sinus pO2 measurements using the lifetimes of the oxygen-quenched luminescence of a ruthenium compound. *Adv Exp Med Biol* 530, 101-11

Hunter CJ, Bennet L, Power GG, Roelfsema V, Blood AB, Quaedackers JS, George S, Guan J and Gunn AJ (2003). Key neuroprotective role for endogenous adenosine A1 receptor activation during asphyxia in the fetal sheep. *Stroke* 34, 2240-2245

Kuo JR, Lin CL, Chio CC, Wang JJ and Lin MT (2003). Effects of hypertonic (3%) saline in rats with circulatory shock and cerebral ischemia after heatstroke. *Intensive Care Medicine* 29, 1567-1573

Kroppenstedt SN, Thomale UW, Griebenow M, Sakowitz OW, Mayr P, Stover JF and Unterberg AW (2003). Effects of early and late infusion of norepinephrine on cerebral blood flow, brain tissue oxygenation and brain edema formation in brain-injured rats. *Critical Care Medicine* 31, 2211-21

Blood AB, Hunter CJ and Power GG (2003). Adenosine mediates decreased cerebral metabolic rate and increased cerebral blood flow during acute moderate hypoxia in the near-term fetal sheep. *J Physiol* 553, 935-945

Hunter CJ, Blood AB and Power GG (2003). Cerebral metabolism during cord occlusion and hypoxia in the fetal sheep: a novel method of continuous measurement based on heat production. *J Physiol* 552, 241-251

Bishai JM, Blood AB, Hunter CJ, Longo LD and Power GG (2003). Fetal lamb cerebral blood flow (CBF), and oxygen tensions during hypoxia: a comparison of laser Doppler and microsphere measurements of CBF. *J Physiol (Lond)*. 546, 869-878

Shen H, Greene AS, Stein EA and Hudetz AG (2002). Functional cerebral hyperemia is unaffected by isovolemic hemodilution. *Anesthesiology* 96, 142-147

Kannurpatti SS, Biswal BB and Hudetz AG (2002). Differential fMRI-BOLD signal response to apnea in humans and anesthetized rats. *Magnetic Resonance in Medicine* 47, 864-870
Ikjijj

Koistinaho, M, Kettunen MI, Holtzman DM, Kauppinen RA, Higgins LS and Koistinaho J (2002). Expression of Human Apolipoprotein E downregulates amyloid precursor protein – induced ischemic susceptibility. *Stroke* 33, 1905-1910

Koistinaho, M, Kettunen MI, Goldsteins G, Keinänen R, Salminen A, Ort M, Bures J, Liu D, Kauppinen RA, Higgins LS and Koistinaho J (2002). β -Amyloid precursor protein transgenic mice that harbor diffuse A β deposits but do not form plaques show increased ischemic vulnerability: Role of inflammation. *PNAS* 99, 1610-1615

Schmidt-Kastner R, Truettner J, Lin B, Zhao W, Saul I, Busto R and Ginsberg M D (2001). Transient changes of brain-derived neurotrophic factor (BDNF) mRNA expression in hippocampus during moderate ischemia induced by chronic bilateral common carotid artery occlusion in the rat. *Molecular Brain Research* 92, 157-166

Nwaigwe CI, Roche MA, Grinberg O and Dunn JF (2000). Effect of hyperventilation on brain tissue oxygenation and cerebro-venous pO₂ in rats. *Brain Res* 868, 150-6

Alonso-Balancia M, Hudetz AG, Shen H, Harder DR and Roman RJ (1999). Contribution of 20-HETE to vasodilator actions of nitric oxide in the cerebral microcirculation. *Stoke* 30, 2727-34

Physiology / Surgery / Wound Healing

Oda S, Nagahama R, Nakano K, Matoba T, Kubo M, Sunagawa K, Tominaga R and Egashira K (2010). Nanoparticle-mediated endothelial cell-selective delivery of pitavastatin induces functional collateral arteries (therapeutic arteriogenesis) in a rabbit model of chronic hind limb ischemia. *J Vasc Surg.* 2010 Jun 21. [Epub ahead of print]

Khan MAA, Tomlinson S, Dhillon G, Jiang X, and Nicolls MR (2010). The contribution of C3 to allograft hypoxia and perfusion In murine model of orthotopic tracheal transplantation. *Am J Respir Crit Care Med* 181: A1092

Sorkin M, Wong VW, Glotzbach JP; Rustad KC; Major MR; Longaker MT and Gurtner GC (2010). 222C: A novel oxygen-binding delivery protein enhances local oxygenation of ischemic skin. *Plastic & Reconstructive Surgery* 125(6,) 145

Terry MH, Merritt TA, Harding B, Schroeder H, Merrill-Henry J, Mazela J, Gregory TJ, Segal R, Power GG and Blood AB (2010). Pulmonary distribution of lincantant and proactant alfa and their peri-dosing hemodynamic effects in a preterm lamb model of respiratory distress syndrome. *Pediatr Res.* 2010 Jun 7. [Epub ahead of print]

Nematbakhsh M, Eppel GA, Goddard D, O'Connor PM and Evans RG (2010) Local maximum oxygen disappearance rate has limited utility as a measure of local renal tissue oxygen consumption. *J Pharmacol Toxicol Methods* 61(3), 297-303

Shih AC, Vignani A, Loring N, Pereira FG, Szarowicz M and Bandt C (2010). Cardiopulmonary effects of a new inspiratory impedance threshold device in anesthetized hypotensive dogs. *Vet Anaesth Analg* 37(3), 215-21

Roy S, Biswas S, Khanna S, Gordillo GM, Bergdall V, Green J, Marsh CB, Gould LJ and Sen CK (2009). Characterization of a Pre-Clinical Model of Chronic Ischemic Wound. *Physiol. Genomics* 37, 211 - 224

Li LP, Ji L, Santos EA, Dunkle E, Pierchala L and Prasad P (2009). Effect of nitric oxide synthase inhibition on intrarenal oxygenation as evaluated by blood oxygenation level-dependent magnetic resonance imaging. *Invest Radiol* 44, 67-73

Gordillo GM and Sen CK (2009). Evidence-based recommendations for the use of topical oxygen therapy in the treatment of lower extremity wounds. *The International Journal of Lower Extremity Wounds* 8, 105-111

Schlaudraff KU, Pepper MS, Tkatchouk EN, Eherenburg I, Alizadeh N, Montandon D and Pittet B (2008). Hypoxic preconditioning increases skin oxygenation and viability but does not alter VEGF expression or vascular density. *High Altitude Medicine and Biology* 9, 76-88

Rausch ME, Weisberg S, Vardhana P and Tortoriello DV (2008). Obesity in C57BL/6J mice is characterized by adipose tissue hypoxia and cytotoxic T-cell infiltration. *Int J Obes (Lond)* 32, 451-63

Lesnik G, Remenschneider A, Herman P, Ross A and Ross D (2008). Capillary blood gas: A novel means of assessing free flap perfusion in an animal model. *Otolaryngol Head Neck Surg* 139, 250-255

Caporali A, Pani E, Horrevoets AJ, Kraenkel N, Oikawa A, Sala-Newby GB, Meloni M, Cristofaro B, Graiani G, Leroyer AS, Boulanger CM, Spinetti G, Yoon SO, Madeddu P and Emanueli C (2008). Neurotrophin p75 receptor (p75NTR) promotes endothelial cell apoptosis and inhibits angiogenesis: implications for diabetes-induced impaired neovascularization in ischemic limb muscles. *Circ Res* 103, 15-26

Crane NJ, Pinto PA, Hale D, Gage FA, Tadaki D, Kirk AD, Levin IW and Elster EA (2008). Non-invasive monitoring of tissue oxygenation during laparoscopic donor nephrectomy. *BMC Surgery* 8:8

Leong C-L, O'Connor PM, Eppel GA, Anderson WP and Evans RG (2008). Measurement of renal tissue oxygen tension: systematic differences between fluorescence optode and microelectrode recordings in anaesthetized rabbits. *Nephron Physiol* 108, 11-17

O'Connor PM, Anderson WP, Kett MM and Evans RG (2008). Simultaneous measurement of pO₂ and perfusion in the rabbit kidney in vivo. *Adv Exp Med Biol* 599, 93-99

Babu AN, Murakawa T, Thurman JM, Miller EJ, Henson PM, Zamora MR, Voelkel NF and Nicolls MR (2007). Microvascular destruction identifies murine allografts that cannot be rescued from airway fibrosis. *J Clin Invest* 117, 3774-85

Evans RG, Leong C-L, Anderson WP and O'Connor PM (2007). Don't be so BOLD: potential limitations in the use of BOLD MRI for studies or renal oxygenation. *Kidney International* 71, 1327-1328

Seeliger E, Flemming, B, Wronski T, Ladwig M, Arakelyan K, Godes M, Moeckel M and Persson PB (2007). Viscosity of contrast media perturbs renal hemodynamics. *J Am Soc Nephrol* 18, 2912-2920

Dyson A, Stidwill R, Taylor V and Singer M (2007). Tissue oxygen monitoring in rodent models of shock. *Am J Physiol Heart Circ Physiol* 293, H526-H533

dos Santos EA, Li LP, Ji L and Prasad PV (2007). Early changes with diabetes in renal medullary hemodynamics as evaluated by fiberoptic probes and BOLD magnetic resonance imaging. *Invest Radiol.* 42, 157-62

Russell JA, Conforti ML, Connor NP and Hartig GK (2007). Cutaneous tissue flap viability following partial venous obstruction. *Plast Reconstr Surg* 117, 2259-66

Leong C-L, Anderson WP, O'Connor PM and Evans RG (2007). Evidence that renal arterial-venous oxygen shunting contributes to dynamic regulation of renal oxygenation. *Am J Physiol Renal Physiol* 292, F1726-F1733

Murnaghan M, Li G and Marsh DR (2006). Nonsteroidal anti-inflammatory drug-induced fracture nonunion: an inhibition of angiogenesis? *J Bone Joint Surg Am* 88, 140-47

Verberne AJM and McInerney K (2006). Pancreatic vasoconstrictor responses are regulated by neurons in the rostral ventrolateral medulla. *Brain Res* 1102, 127-134

Whitehouse T, Stotz M, Taylor V, Stidwill R and Singer M (2006). Tissue oxygen and hemodynamics in renal medulla, cortex, and corticomedullary junction during hemorrhage-reperfusion. *Am J Physiol Renal Physiol* 291, F647–F653

O'Connor PM, Kett MM, Anderson WP and Evans RG (2006). Renal medullary tissue oxygenation is dependent on both cortical and medullary blood flow. *Am J Physiol Renal Physiol* 290, F688–F694

Badger WJ, Whitbeck C, Kogan B, Chichester P and Levin RM (2006). The immediate effect of castration on female bladder blood flow and tissue oxygenation. *Urologia Internationalis* 76, 264-268

Duggan M, Engelberts D, Jankov RP, Worrall JM, Qu R, Hare GM, Tanswell AK, Mullen JB, Kavanagh BP (2005). Hypocapnia attenuates mesenteric ischemia-reperfusion injury in a rat model. *Can J Anaesth* 52, 262-68

Ryan S, Taylor CT and McNicholas WT (2005). Selective activation of inflammatory pathways by intermittent hypoxia in obstructive sleep apnea syndrome. *Circulation* 112, 2660-7

Rhee TK, Larson AC, Prasad PV, Santos E, Sato KT, Salem R, Deng J, Paunesku T, Woloschak GE, Mulcahy MF, Li D and Omary RA (2005). Feasibility of blood oxygenation level-dependent MR imaging to monitor hepatic transcatheter arterial embolization in rabbits. *J Vasc Interv Radiol.* 16, 1523-28

Baines AD and Ho P (2005). 20-HETE-mediated vasoconstriction by haemoglobin-O₂ carrier in Sprague-Dawley but not Wistar rats. *J Appl Physiol* 98, 772-779

Plock JA, Contaldo C, Sakai H, Tsuchida E, Leunig M, Banic A, Menger MD and Erni D (2005). Is hemoglobin in hemoglobin vesicles infused for isovolemic hemodilution necessary to improve oxygenation in critically ischemic hamster skin? *Am J Physiol heart Circ Physiol* 289, H2624-31

Contaldo C, Plock J, Djonov V, Leunig M, Banic A and Erni D (2005). The influence of trauma and ischemia on carbohydrate metabolites monitored in hamster flap tissue. *Anesth Analg* 100, 817-822

van der Bilt JDW, Kraneburg O, Nijkamp NW, Smakman N, Veenendaal LM, te Velde EA, Voest EE, van Diest PJ and Borel Rinkes IHM (2005). Ischemia/reperfusion accelerates the outgrowth of hepatic micrometastases in a highly standardized murine model. *Hepatology* 42, 165-175

Contaldo C, Plock J, Sakai H, Takeoka S, Tsuchida E, Leunig M, Banic A, Emi D (2005). New generation of hemoglobin-based oxygen carriers evaluated for oxygenation of critically ischemic hamster flap tissue. *Crit Care Med* 33, 806-12

Fries RB, Wallace WA, Roy S, Kuppusamy P, Bergdall V, Gordillo GM, Melvin WS and Sen CK (2005). Dermal excisional wound healing in pigs following treatment with topically applied pure oxygen. *Mutation Research* 579, 172-181

Fukatsu K, Ueno C, Maeshima Y, Hara E, Nagayoshi H, Omata J, Mochizuki H and Hiraide H (2004). Effects of L-arginine infusion during ischemia on gut blood perfusion, oxygen tension, and circulating myeloid cell activation in a murine gut ischemia/reperfusion model. *JPEN J Parenter Enteral Nutr.* 28, 224-30

Yuan LJ, Ueng SW, Lin SS, Yeh WL, Yang CY and Lin PY (2004). Attenuation of apoptosis and enhancement of proteoglycan synthesis in rabbit cartilage defects by hyperbaric oxygen treatment are related to the suppression of nitric oxide production. *J Orthop Res.* 22, 1126-34

Cheung AT, Driessen B, Jahr JS, Duong PL, Ramanujam S, Chen PC and Gunther RA (2004). Blood substitute resuscitation as a treatment modality for moderate hypovolemia. *Artif Cells Blood Substit Immobil Biotechnol* 32, 189-207

Dobryansky M, Galiano RD, Curtis L, Cetrulo Jr, Bhatt KA, Michaels J, Ashinoff R, Levine JP and Gurtner GC (2004). Endostatin inhibits ischemia-induced neovascularization and increased ischemic tissue loss. *Ann Plast Surg* 52, 512-18

Jordan BF, Kimpalou JZ, Beghein N, Dessy C, Feron O and Gallez B (2004). Contribution of oxygenation to BOLD contrast in exercising muscle. *Magn Reson Med* 52, 391-396

Ceradini DJ, Kulkarni AR, Callaghan MJ, Tepper OM, Bastidas N, Kleinman ME, Capla JM, Galiano RD, Levine JP and Gurtner GC (2004). Progenitor cell trafficking is regulated by hypoxic gradients through HIF-1 induction of SDF-1. *Nature Medicine* 10, 858-864

Voss M, Pinheiro J, Reynolds J, Greene R, Dewhirst M, Vaslef SN, Clary E and Eubanks WS (2003). Endoscopic components separation for abdominal compartment syndrome. *Am J Surg* 186, 158-63

Cernanec J, Guilak, Weinberg JB, Pisetsky DS and Fermor B (2002). Influence of hypoxia and oxygenation on cytokine-induced production of proinflammatory mediators in articular cartilage. *Arthritis Rheum* 46, 968-75

Giuliano F, Allard J, Compagnie S, Alexandre L, Droupy S and Bernabe J (2001). Vaginal physiological changes in a model of sexual arousal in anesthetized rats. *Am J Physiol Regul Integr Comp Physiol* 281, R140-149

Minning DM, Gow AJ, Bonaventura J, Braun R, Dewhirst M, Goldberg DE and Stamler JS (1999). Ascaris haemoglobin is a nitric oxide-activated 'deoxygenase'. *Nature* 401, 497-502

Ophthalmology

Shui Y-B, Holekamp NM, Kramer BC, Crowley JR, Wilkins MA, Chu F, Malone PE, Mangers SJ, Hou JH, Siegfried CJ and Beebe DC (2009). The gel state of the vitreous and ascorbate-dependent oxygen consumption: Relationship to the etiology of nuclear cataracts. *Arch Ophthalmol* 127, 475-482

Giblin FJ, Quiram PA, Leverenz VR, Baker RM, Dang L and Trese MT (2009). Enzyme-induced posterior vitreous detachment in the rat produces increased lens nuclear pO₂ levels. *Exp Eye Res* 88, 286-292

Kane R, Godson C and O'Brien C (2008). Chordin-like 1, a bone morphogenetic protein-4 antagonist, is upregulated by hypoxia in human retinal pericytes and plays a role in regulating angiogenesis. *Molecular Vision* 14, 1138-1148

Shui Y-B and Beebe DC (2008). Age-dependent control of lens growth by hypoxia. *IOVS* 49, 1023-1029

Quiram PA, Leverenz VR, Baker RM, Dang L, Giblin FJ and Trese MT (2007). Microplasma-induced posterior vitreous detachment affects vitreous oxygen levels. *Retina* 27(8), 1090-96

Holekamp NM, Shui YB and Beebe D (2006). Lower intraocular oxygen tension in diabetic patients: possible contribution to decreased incidence of nuclear sclerotic cataract. *Am J Ophthalmol* 141, 1027-32

Shui YB, Fu JJ, Garcia C, Dattilo LK, Rajagopal R, McMillan S, Mak G, Holekamp NM, Lewis A and Beebe DC (2006). Oxygen distribution in the rabbit eye and oxygen consumption by the lens. *IOVS* 47, 1571-1580

Holekamp NM, Shui Y-B and Beebe DC (2005). Vitrectomy surgery increases oxygen exposure to the lens: A possible mechanism for nuclear cataract formation. *Am J Ophthalmol* 139, 302-310

McNulty R, Wang H, Mathias RT, Ortwerth BJ, Truscott RJW and Bassnett S (2004). Regulation of tissue oxygen levels in mammalian lens. *J Physiol* 559, 883-898

Bassnett S and McNulty R (2003). The effect of elevated intraocular oxygen on organelle degradation in the embryonic chicken lens. *J Exp Biol* 206, 4353-4361

Shock / Sepsis

- Stern S, Rice J, Philbin N, McGwin G, Arnaud F, Johnson T, Flournoy WS, Ahlers S, Pearce LB, McCarron R and Freilich D** (2009). Resuscitation with the hemoglobin-based oxygen carrier, HBOC-201, in a swine model of severe uncontrolled hemorrhage and traumatic brain injury. *Shock* 31, 64-79
- Cooper ES, Bateman SW and Muir WW** (2009). Evaluation of hyperviscous fluid resuscitation in a canine model of hemorrhagic shock: a randomized, controlled study. *J Trauma* 66, 1365-73
- Deniz T, Agalar C, Agalar F, Comu FM, Caglayan O, Alpaly Y, and Saygun O** (2008). The Effect of hypothermia on splanchnic flows and lung in a two-hit hemorrhagic shock model. *Journal of Surgical Research*
- Chen YC, Liu YC, Yen DHT, Wang LM, Huang CI, Lee CH and Lin MT** (2008). L-Arginine causes amelioration of cerebrovascular dysfunction and brain inflammation during experimental heatstroke. *Shock* 29, 212-216
- Driessen B, Zarrucco L, Gunther RA, Burns PM, Lamb SV, Vincent SE, Boston RA, Jahr JS and Cheung ATW** (2007). Effects of low-volume haemoglobin glutamer-200 versus normal saline and arginine vasopressin resuscitation on systemic and skeletal muscle blood flow and oxygenation in a canine hemorrhagic shock model *Crit Care Med* 35, 1-9
- Tokunaga C, Bateman RM, Boyd J, Wang Y, Russell JA and Walley KR** (2007). Albumin resuscitation improves ventricular contractility and myocardial tissue oxygenation in rat endotoxemia. *Crit Care Med* 35, 1341-47
- Deniz T, Agalar C, Ozdogan M, Comu F, Emirdogan M, Taskin S, Saygun O and Agalar F** (2007). Oral carbohydrate solution ameliorates endotoxemia-induced splanchnic ischemia. *Dig Dis Sci.* 52, 287-91
- Yen DHT, Chan JH, Huang CI, Lee CH, Chan SH and Chang AY** (2005). Coenzyme Q10 confers cardiovascular protection against acute mevinphos intoxication by ameliorating bioenergetic failure and hypoxia in the rostral ventrolateral medulla of the rat. *Shock* 23, 353-9
- Hiltebrand LB, Krejci V, tenHoevel ME, Banic A and Sigurdsson GH** (2003). Redistribution of microcirculatory blood flow within the intestinal wall during sepsis and general anesthesia. *Anesthesiology* 98, 658-69
- Krejci V, Agalar C, Ozdogan M, Erni D and Sigurdsson GH** (2003). Endothelin receptor antagonist bosentan improves microcirculatory blood flow in splanchnic organs in septic shock. *Crit Care Med* 31, 203-10
- Krejci V, Hiltebrand L, Banic A, Erni D, Wheatley AM and Sigurdsson GH** (2000). Continuous measurements of microcirculatory blood flow in gastrointestinal organs during acute haemorrhage. *Br J Anaesth* 84, 468-475

In Vitro

- Li J, Yan B, Huo Z, Liu Y, Xu J, Sun Y, Liu Y, Liang D, Peng L, Zhang Y, Zhou ZN, Shi J, Cui J and Chen YH** (2010). a2- but not a1-adrenoceptor activation modulates intracellular oxygen availability. *J Physiol.* 2010 Jun 14. [Epub ahead of print]
- Atrux-Tallau N, Le TH, Denis A, Padois K, Zahouani H, Haftek M, Falson F and Pirot F** (2009). Simultaneous characterization of oxygen transport into and through porcine skin exposed to oxygen-saturated water. *Skin Pharmacol Physiol.* 22(4), 210-217
- O'Hagan KA, Cocchiglia S, Zhdanov AV, Tambuwala MM, Cummins EP, Monfared M, Agbor TA, Garvey JF, Papkovsky DB, Taylor CT and Allan BB** (2009). PGC-1alpha is coupled to HIF-1alpha-dependent gene expression by increasing mitochondrial oxygen consumption in skeletal muscle cells. *Proc Natl Acad Sci* 106, 2188-93
- Subarsky P and Hill RP** (2008). Graded hypoxia modulates the invasive potential of HT1080 fibrosarcoma and MDA MB231 carcinoma cells. *Clin Exp Metastasis* 25, 253-264
- Khait L, Hecker L, Randoti D and Birla RK** (2008). Micro-perfusion for cardiac tissue engineering: development of a bench-top system for the culture of primary cardiac cells. *Annals of Biomedical Engineering* 36, 713-725
- Chang EI, Bonillas RG, El-Ftesi S, Chang EI, Ceradini DJ, Vial IN, Chan DA, Michaels J 5th and Gurtner GC** (2008). Tissue engineering using autologous microcirculatory beds as vascularized bioscaffolds. *FASEB J. epub* 2008 Nov 10
- Cheema U, Brown RA, Alp B and MacRobert AJ** (2008). Spatially defined oxygen gradients and vascular endothelial growth factor expression in an engineered 3D cell model. *Cell. Mol. Life Sci.* 65, 177-186
- Potier E, Ferreira E, Meunier A, Sedel L, Logeart-Avramoglou D and Petite H** (2007). Prolonged hypoxia concomitant with serum deprivation induces massive human mesenchymal stem cell death. *Tissue Eng* 13, 1325-31
- Fischbach C, Chen R, Matsumoto T, Schmelzle T, Brugge JS, Polverini PJ and Mooney DJ** (2007). Engineering tumors with 3D scaffolds. *Nature Methods* 40(10), 855-860
- Yu G, Peng T, Feng Q and Tymk K** (2007). Abrupt reoxygenation of microvascular endothelial cells after hypoxia activates ERK1/2 and JNK1, leading to NADPH oxidase-dependent oxidant production. *Microcirculation* 14, 125-36
- Abramov AY, Scorziello A and Duchon MR** (2007). Three distinct mechanisms generate oxygen free radicals in neurons and contribute to cell death during anoxia and reoxygenation. *J Neurosci* 27, 1129-38
- Vohra HA and Galinanes M** (2006). Myocardial preconditioning against ischemia-induced apoptosis and necrosis in man. *J Surg Research* 134, 138-144
- Comerford KM, Leonard MO, Cummins EP, Fitzgerald KT, Beullens M, Bollen M and Taylor CT** (2005). Regulation of protein phosphatase 1gamma activity in hypoxia through increased interaction with NIPP1: implications for cellular metabolism. *J Cell Physiol* 209, 211-18.
- Wang DW, Fermo B, Gimble J, Awad H and Guilak F** (2005). Influence of oxygen on the proliferation and metabolism of adipose derived adult stem cells. *J Cell Physiol* 204, 184-91
- Tepper OM, Capla JM, Galiano RD, Ceradini DJ, Callaghan MJ, Kleinman ME and Gurtner GC** (2005). Adult vasculogenesis occurs through in situ recruitment, proliferation, and tubulization of circulating bone marrow-derived cells. *Blood* 105, 1068-1077
- Comerford KM, Cummins, EP and Taylor CT** (2004). c-Jun NH2-terminal kinase activation contributes to hypoxia-inducible factor 1alpha-dependent P-glycoprotein expression in hypoxia. *Cancer Res* 64, 9057-61
- Palacios-Callender M, Quintero M, Hollis VS, Springett RJ and Moncada S** (2004). Endogenous NO regulates superoxide production at low oxygen concentrations by modifying the redox state of cytochrome c oxidase. *Proc Natl Acad Sci* 101, 7630-35
- Roberts N, Ghosh S, Boehm M and Galinanes M** (2003). The radial hyperaemic response: a new and objective assessment of ulnar collateral supply to the hand. *Eur J Cardiothorac Surg* 21, 549-52
- Ho KC, Leach JK, Eley K, Mikkelsen RB and Lin PS** (2003). A simple method of producing low oxygen conditions with oxyrase for cultured cells exposed to radiation and tirapazamine. *Am J Clin Oncol* 26, 86-91
- Hicks KO, Pruijn FB, Sturman JR, Denny WA and Wilson WR** (2003). Multicellular resistance to tirapazamine is due to restricted extravascular transport: a pharmacokinetic/pharmacodynamic study in HT29 multicellular layer cultures. *Cancer Res* 63, 5970-77

- Khanna S, Wallace WA, Lappalainen J, Rink C, Cardounel AJ, Zweier JL and Sen CK** (2003). Characterization of perceived hyperoxia in isolated primary cardiac fibroblasts and in the reoxygenated heart. *J Biol Chem* 278, 47129-35
- Roy S, Khanna S, Bickerstaff AA, Subramanian SV, Atalay M, Bierl M, Pendyala S, Levy D, Sharma N, Venojarvi M, Strauch A, Orosz CG and Sen CK** (2003). Oxygen sensing by primary cardiac fibroblasts – a key role of p21^{Waf1/Cip1/Sd1}. *Circ Res* 92, 264-271
- Gosh S and Galinanes M** (2002). Protection of the human heart with ischemic preconditioning during cardiac surgery: role of cardiopulmonary bypass. *J Thorac Cardiovasc Surg* 126(1), 133-42
- Zhang J-G, Shosh S, Ockelford CD and Galinanes M** (2000). Characterization of an in vitro model for the study of the short and prolonged effects if myocardial ischemia and reperfusion in man. *Clinical Science* 99, 443-453

Methodology / Validation

- Wen B, Urano M, Humm JL, Seshan VE, Li GC and Ling CC** (2008). Comparison of Helzel and OxyLite systems in the measurements of tumor partial oxygen pressure (pO2). *Rad Res* 169, 67-75
- Leong C-L, O'Connor PM, Eppel GA, Anderson WP and Evans RG** (2008). Measurement of renal tissue oxygen tension: systematic differences between fluorescence optode and microelectrode recordings in anesthetized rabbits. *Nephron Physiol* 108, 11-17
- Elas M, Ahn KH, Parasca A, Barth ED, Lee D, Haney C and Halpern HJ** (2006). Electron paramagnetic resonance oxygen images correlate spatially and quantitatively with OxyLite oxygen measurements. *Clin Cancer Res.* 12 (14 Pt 1), 4209-17
- Davda S and Bezabeh T** (2006). Advances in methods for assessing tumor hypoxia in vivo: implications for treatment planning. *Cancer and Metastasis Reviews* 25, 469-80
- Bishai JM, Blood AB, Hunter CJ, Longo LD and Power GG** (2003). Fetal lamb cerebral blood flow (CBF), and oxygen tensions during hypoxia: a comparison of laser Doppler and microsphere measurements of CBF. *J Physiol (Lond).* 546, 869-878
- Nwaigwe CI, Roche MA, Grinberg O and Dunn JF** (2003). Brain tissue and sagittal sinus pO2 measurements using the lifetimes of the oxygen-quenched luminescence of a ruthenium compound. *Adv Exp Med Biol* 530, 101-11
- Mason RP, Constantinescu A, Ran S and Thorpe PE** (2002). Oxygenation in a human tumor xenograft: manipulation through respiratory challenge and antibody-directed infarction. *Adv Exp Med Biol* 530, 197-204
- Seddon BM, Honess DJ, Vojnovic B, Tozer GM and Workman P** (2001). Measurement of tumor oxygenation: in vivo comparison of a luminescence fiber-optic sensor and a polarographic electrode in the p22 tumor. *Radiat Res* 155, 837-46
- Griffiths JR and Robinson SP** (1999). The OxyLite: a fibre-optic oxygen sensor (Commentary). *The British Journal of Radiology* 72, 627-630
- Leahy MJ, de Mul FFM, Nilsson GE and Maniewski R** (1999). Principles and practice of the laser-Doppler perfusion technique. *Technology and Health Care* 7, 143-162
- Dunn JF, Nwaigwe CI and Roche M** (1999). Measurement of arterial, venous, and interstitial pO2 during acute hypoxia in rat brain using a time-resolved luminescence-based oxygen sensor. *Adv Exp Med Biol* 471, 43-48
- Collingridge DR, Young WK, Vojnovic B, Wardman P, Lynch EM, Hill SA, Chaplin DJ** (1997). Measurement of tumour oxygenation: a comparison between polarographic needle electrodes and a time-resolved luminescence-based optical sensor. *Radiat Res* 147, 329-334