

Application sub-categories:

- Tumour / Cancer
- Cerebral / Stroke / MCAO
- Vital Organs / Shock
- Plastic Surgery / Wound Healing
- Physiology / Ischemia
- Ophthalmology
- In Vitro Applications
- Methodology / Validation

Tumour / Cancer

Sheng T, Ong YH, Guo W and Zhu T (2020). Reactive oxygen species explicit dosimetry to predict tumor growth for benzoporphyrin derivative-mediated vascular photodynamic therapy. *J Biomed Opt.* 25(6), 1-13

Sheng T, Ong YH, Busch TM and Zhu TC (2019). Reactive oxygen species explicit dosimetry to predict local tumor control for Photofrin-mediated photodynamic therapy. *Proc SPIE Int Soc Opt Eng.* 10860

Sheng T, Ong YH, Busch TM and Zhu TC (2019). Reactive oxygen species explicit dosimetry to predict tumor growth for BPD-mediated vascular photodynamic therapy. *Proc SPIE Int Soc Opt Eng.* 10861

Ong YH, Dimofte A, Kim MM, Finlay JC, Sheng T, Singhal S, Cengel KA, Yodh AG, Busch TM and Zhu TC (2019). Reactive Oxygen Species Explicit Dosimetry for Photofrin-mediated Pleural Photodynamic Therapy. *Photochem Photobiol.* 2019 Nov 15. doi: 10.1111/php.13176. [Epub ahead of print]

Ho YJ, Chu SW, Liao EC, Fan CH, Chan HL, Wei KC and Yeh CK (2019). Normalization of Tumor Vasculature by Oxygen Microbubbles with Ultrasound. *Theranostics* 9(24), 7370-7383 Bodo S et al. (2019). Single-dose radiotherapy disables tumor cell homologous recombination via ischemia/reperfusion injury. *J Clin Invest.* 129(2), 786-801

Ong YH, Kim MM, Huang Z and Zhu TC (2018). Reactive Oxygen Species Explicit Dosimetry (ROSED) of a Type 1 Photosensitizer. *Proc SPIE Int Soc Opt Eng.* 2018 Feb;10476. pii: 104760V. doi: 10.1117/12.2291385.

Luan X, Guan YY, Liu HJ, Lu Q, Zhao M, Sun D, Lovell JF, Sun P, Chen HZ and Fang C (2018). A Tumor Vascular-Targeted Interlocking Trimodal Nanosystem That Induces and Exploits Hypoxia. *Adv Sci (Weinh)* 5(8):1800034

Luo Z, Tian H, Liu L, Chen Z, Liang R, Chen Z, Wu Z, Ma A, Zheng M and Cai L (2018). Tumor-targeted hybrid protein oxygen carrier to simultaneously enhance hypoxia-dampened chemotherapy and photodynamic therapy at a single dose. *Theranostics* 8(13), 3584-3596

Eisenbrey JR, Shraim R, Liu JB, Li J, Stanczak M, Oeffinger B, Leeper DB, Keith SW, Jablonowski L, Forsberg F, O'Kane P and Wheatley MA (2018). Sensitization of Hypoxic Tumors to Radiation Therapy Using Ultrasound-Sensitive Oxygen Microbubbles. *Int J Radiat Oncol Biol Phys* 101(1), 88-96

Bhandari P, Novikova G, Goergen CJ and Irudayaraj J (2018). Ultrasound beam steering of oxygen nanobubbles for enhanced bladder cancer therapy. *Sci Rep* 8(1):3112

Wang Y, Stewart E, Desjardins L, Hadway J, Morrison L, Crukley C and Lee TY (2017). Assessment of intratumor hypoxia by integrated 18F-FDG PET / perfusion CT in a liver tumor model. *PLoS One* 12(3):e0173016

Bhandari PN, Cui Y, Elzey BD, Goergen CJ, Long CM, Irudayaraj J (2017). Oxygen nanobubbles revert hypoxia by methylation programming. *Sci Rep* 7(1):9268

Nesbitt H, Worthington J, Errington RJ, Patterson LH, Smith PJ, McKeown SR and McKenna DJ (2017). The unidirectional hypoxia-activated prodrug OCT1002 inhibits growth and vascular development in castrate-resistant prostate tumors. *Prostate* 77(15), 1539-1547

Koonce NA, Griffin RJ and Dings RPM (2017). Galectin-1 Inhibitor OTX008 Induces Tumor Vessel Normalization and Tumor Growth Inhibition in Human Head and Neck Squamous Cell Carcinoma Models. *Int J Mol Sci* 18(12). pii: E2671

Fan Q, Tang CY, Gu D, Zhu J, Li G, Wu Y and Tao X (2017). Investigation of hypoxia conditions using oxygen-enhanced magnetic resonance imaging measurements in glioma models. *Oncotarget* 8(19), 31864-31875

Sheng Y, Nesbitt H, Callan B, Taylor MA, Love M, McHale AP and Callan JF (2017). Oxygen generating nanoparticles for improved photodynamic therapy of hypoxic tumours. *J Control Release* 264, 333-340

Tomaszewski MR, Gonzalez IQ, O'Connor JP, Abeyakoon O, Parker GJ, Williams KJ, Gilbert FJ and Bohndiek SE (2017). Oxygen Enhanced Optoacoustic Tomography (OE-OT) Reveals Vascular Dynamics in Murine Models of Prostate Cancer. *Theranostics* 7(11), 2900-2913

Xiong XX, Qiu XY, Hu DX and Chen XQ (2017). Advances in Hypoxia-Mediated Mechanisms in Hepatocellular Carcinoma. *Mol Pharmacol* 92(3), 246-255 Ong YH, Kim MM, Rodriguez CE, Dimofte A, Finlay JC, Busch TM, Yodh AG, Cengel KA, Singhal S and Zhu TC (2017). Monitoring and assessment of tumor hemodynamics during pleural PDT. *Proc. SPIE 10047, Optical Methods for Tumor Treatment and Detection: Mechanisms and Techniques in Photodynamic Therapy XXXI, 100470C (February 16, 2017); doi:10.1117/12.2252979*

Penjweini R, Kim MM, Ong YH and Zhu TC (2017). Singlet oxygen explicit dosimetry to predict long-term local tumor control for BPD-mediated photodynamic therapy. *Proc. SPIE 10047, Optical Methods for Tumor Treatment and Detection: Mechanisms and Techniques in Photodynamic Therapy XXVI, 100470X (February 13, 2017); doi:10.1117/12.2250435*

Kim MM, Penjweini R, Ong YH, Finlay JC and Zhu TC (2017). Oxygen measurements to improve singlet oxygen dosimetry. *Proc. SPIE 10047, Optical Methods for Tumor Treatment and Detection: Mechanisms and Techniques in Photodynamic Therapy XXVI, 100470A (February 13, 2017); doi:10.1117/12.2250432*

Penjweini R, Kim MM, Ong YH and Zhu TC (2017). Singlet oxygen explicit dosimetry to predict local tumor control for HPPH-mediated photodynamic therapy. *Proc. SPIE 10047, Optical Methods for Tumor Treatment and Detection: Mechanisms and Techniques in Photodynamic Therapy XXVI, 1004710 (February 8, 2017); doi:10.1117/12.2251011*

Burmakin M, van Wieringen T, Olsson PO, Stuhr L, Åhgren A, Heldin CH, Reed RK, Rubin K and Hellberg C (2017). Imatinib increases oxygen delivery in extracellular matrix-rich but not in matrix-poor experimental carcinoma. *J Transl Med* 15(1), 47

Li F, Jørgensen JT, Forman J, Hansen AE and Kjaer A (2016). 64Cu-ATSM Reflects pO2 Levels in Human Head and Neck Cancer Xenografts but Not in Colorectal Cancer Xenografts: Comparison with 64CuCl2. *J Nucl Med* 57(3), 437-43

Melsens E, Verberckmoes B, Rosseel N, Vanhove C, Descamps B, Pattyn P and Ceelen W (2016). The VEGFR Inhibitor Cediranib Improves the Efficacy of Fractionated Radiotherapy in a Colorectal Cancer Xenograft Model. *Eur Surg Res* 58(3-4), 95-108

Penjweini R, Kim MM, Finlay JC and Zhu TC (2016). Investigating the impact of oxygen concentration and blood flow variation on photodynamic therapy. *Proc SPIE Int Soc Opt Eng.* 2016 Feb 13;9694. pii: 96940L

O'Connor JBP, Boulton JKR, Jamin Y, Babur M, Finegan KG, Williams KJ, Little RA, Jackson A, Parker GJM, Reynolds AR, Waterton JC and Robinson SP (2016). Oxygen-enhanced MRI accurately identifies, quantifies, and maps tumor hypoxia in preclinical cancer models. *Cancer Res* 76(4), 787-795

Lin WH, Yeh SH, Yeh KH, Chen KW, Cheng YW, Su TH, Jao P, Ni LC, Chen PJ and Chen DS (2016). Hypoxia-activated cytotoxic agent tirapazamine enhances hepatic artery ligation-induced killing of liver tumor in HBx transgenic mice. *Proc Natl Acad Sci USA* 113(42), 11937-11942

Laurens E, Yeoh SD, Rigopoulos A, O'Keefe GJ, Tochon-Danguy HJ, Chong LW, White JM, Scott AM, Ackermann U (2016). Fluorine-18 radiolabeling of a nitrophenyl sulfoxide and its evaluation in an SK-RC-52 model of tumor hypoxia. *J Labelled Comp Radiopharm* 59(10), 416-23

Li F, Jørgensen JT, Forman J, Hansen AE and Kjaer A (2016). 64Cu-ATSM Reflects pO2 Levels in Human Head and Neck Cancer Xenografts but Not in Colorectal Cancer Xenografts: Comparison with 64CuCl2. *J Nucl Med* 57(3), 437-43

Nesbitt H, Browne G, O'Donovan KM, Byrne NM, Worthington J, McKeown SR and McKenna DJ (2016). Nitric Oxide Up-Regulates RUNX2 in LNCaP Prostate Tumours: Implications for Tumour Growth In Vitro and In Vivo. *J Cell Physiol.* 231(2), 473-82

Byrne NM, Nesbitt H, Ming L, McKeown SR, Worthington J and McKenna DJ (2016). Androgen deprivation in LNCaP prostate tumor xenografts induces vascular changes and hypoxic stress, resulting in promotion of epithelial-to-mesenchymal transition. *Br J Cancer* 114(6) 659-68

Epel B, Redler G, Tormyshev V and Halpern HJ (2016). Towards Human Oxygen Images with Electron Paramagnetic Resonance Imaging. *Adv Exp Med Biol* 876, 363-9

Nesbitt H, Browne G, O'Donovan KM, Byrne NM, Worthington J, McKeown SR and McKenna DJ (2016). Nitric Oxide Up-Regulates RUNX2 in LNCaP Prostate Tumours: Implications for Tumour Growth In Vitro and In Vivo. *J Cell Physiol* 231(2), 473-82

Frank J, Gündel Z, Drescher S, Thews O and Mäder K (2015). Injectable LiNi-BuO loaded microspheres as in vivo EPR oxygen sensors after co-implantation with tumor cells. *Free Radic Biol Med* 89, 741-9

Corroyer-Dulmont A, Chakhoyan A, Collet S, Durand L, MacKenzie ET, Petit E, Bernaudin M, Touzani O and Valable S (2015). Imaging Modalities to Assess Oxygen Status in Glioblastoma. *Front Med (Lausanne)*. Aug 19;2:57. doi: 10.3389/fmed.2015.00057

Gremontprez F, Descamps B, Izmer A, Vanhove C, Vanhaecke F, De Wever O and Ceelen W (2015). Pretreatment with VEGF(R)-inhibitors reduces interstitial fluid pressure, increases intraperitoneal chemotherapy drug penetration, and impedes tumor growth in a mouse colorectal carcinomatosis model. *Oncotarget* 6(30), 29889-900

Hueting R, Kersemans V, Tredwell M, Cornelissen B, Christlieb M, Gee AD, Passchier J, Smart SC, Gouverneur V, Muschel RJ and Dilworth JR (2015). A dual radiolabelling approach for tracking metal complexes: investigating the speciation of copper bis(thiosemicarbazones) in vivo and in vitro. *Metalomics* 7(5), 795-804

Cerniglia GJ, Dey S, Gallagher-Colombo SM, Daurio NA, Tuttle S, Busch TM, Lin A, Sun R, Espilova TV, Vinogradov SA, Denko N, Koumenis C and Maity A (2015). The PI3K/Akt Pathway Regulates Oxygen Metabolism via Pyruvate Dehydrogenase (PDH)-E1 α Phosphorylation. *Mol Cancer Ther* 14(8), 1928-38

Johnson JL, Leos RA, Baker AF and Unger EC (2015). Radiosensitization of Hs-766T Pancreatic Tumor Xenografts in Mice Dosed with Dodecafluoropentane Nano-Emulsion-Preliminary Findings. *J Biomed Nanotechnol* 11(2), 274-81

Bluff JE, Reynolds S, Metcalf S, Alizadeh T, Kazan SM, Bucur A, Wholey EG, Bibby BA, Williams L, Paley MN and Tozer GM (2015). Measurement of the acute metabolic response to hypoxia in rat tumours in vivo using magnetic resonance spectroscopy and hyperpolarised pyruvate. *Radiother Oncol* 116(3), 392-9

Levy EB, Johnson CG, Jacobs G, Woods DL, Sharma KV, Bacher JD, Lewis AL, Dreher MR and Wood BJ (2015). Direct Quantification and Comparison of Intratumoral Hypoxia following Transcatheter Arterial Embolization of VX2 Liver Tumors with Different Diameter Microspheres. *J Vasc Interv Radiol* 26(10), 1567-73

Reyal J, Lebas N, Zlatanova I, Vilar J and Silvestre J-B (2015). Post-occlusive Reactive Hyperemia in Mouse Melanoma. *J Cancer Res Ther Oncol* 1, 1-6

Neshatian MN; Chung S; Yohan D; Yang C and Chithrani DB (2015). Uptake of Gold Nanoparticles in Breathless (Hypoxic) Cancer Cells. *J Biomed Nanotechnology* 11(7), 1162-1172

Fleming IN, Manavaki R, Blower PJ, West C, Williams KJ, Harris AL, Domarkas J, Lord S, Baldry C and Gilbert JF (2014). Imaging tumor hypoxia with positron emission tomography. *Br J Cancer* 112(2), 238-50

Rich LJ and Seshadri M (2014). Photoacoustic Imaging of Vascular Hemodynamics: Validation with Blood Oxygenation Level-Dependent MR Imaging. *Radiology* 275(1), 110-8

Collet G, Lamerant-Fayel N, Tertilt M, El Hafny-Rahbi B, Stjepiowski J, Guichard A, Foucault-Collet A, Klimkiewicz K, Petoud S, Matejuk A, Grillon C, Jozkiewicz A, Dulak J and Kieda C (2014). Hypoxia-regulated overexpression of soluble VEGFR2 controls angiogenesis and inhibits tumor growth. *Mol Cancer Ther* 13(1), 165-78

Laurens E, Yeoh SD, Rigopoulos A, Cao D, Cartwright GA, O'Keefe GJ, Tochon-Danguy HJ, White JM, Scott AM and Ackermann U (2014). Radiolabelling and evaluation of a novel sulfoxide as a PET imaging agent for tumor hypoxia. *Nucl Med Biol* 41(5), 419-25

Raykov Z, Grekova SP, Bour G, Lehn JM, Giese NA, Nicolau C and Aprahamian M (2014). Myo-inositol trispyrophosphate-mediated hypoxia reversion controls pancreatic cancer in rodents and enhances gemcitabine efficacy. *Int J Cancer* 134(11), 2572-82

Bailey KM, Cornnell HH, Ibrahim-Hashim A, Wojtkowiak JW, Hart CP, Zhang X, Leos R, Martinez GV, Baker AF and Gillies RJ (2014). Evaluation of the "Steal" Phenomenon on the Efficacy of Hypoxia Activated Prodrug TH-302 in Pancreatic Cancer. *PLoS One*. 2014 Dec 22;9(12):e113586

Tran LB, Bol A, Labar D, Karroum O, Bol V, Jordan B, Grégoire Vand Gallez B (2014). Potential role of hypoxia imaging using (18)F-FAZA PET to guide hypoxia-driven interventions (carbogen breathing or dose escalation) in radiation therapy. *Radiother Oncol* 113(2), 204-9

Weiss A, van Beijnum JR, Bonvin D, Jichlinski P, Dyson PJ, Griffioen AW and Nowak-Sliwinska P (2014). Low-dose angiotensin tyrosine kinase inhibitors improve photodynamic therapy for cancer: lack of vascular normalization. *J Cell Mol Med* 18(3), 480-91

Collet G, Robert E, Lenoir A, Vandamme M, Darny T, Dozias S, Kieda C and Pouvlesle JM (2014). Plasma jet-induced tissue oxygenation: potentialities for new therapeutic strategies. *Plasma Sources Sci. Technol.* 23 012005 doi:10.1088/0963-0252/23/1/012005

Li CX, Wong BL, Ling CC, Ma YY, Shao Y, Geng W, Qi X, Lau SH, Kwok SY, Wei N, Tzang FC, Ng KT, Liu XB, Lo CM and Man K (2014). A novel oxygen carrier "YQ23" suppresses the liver tumor metastasis by decreasing circulating endothelial progenitor cells and regulatory T cells. *BMC Cancer* 14, 293

- Sun CJ, Li C, Lv HB, Zhao C, Yu JM, Wang GH, Luo YX, Li Y, Xiao M, Yin J and Lang JY (2014). Comparing CT perfusion with oxygen partial pressure in a rabbit VX2 soft-tissue tumor model. *J Radiat Res* 55(1), 183-90
- Tertli M, Skrzypek K, Florczyk U, Weglarczyk K, Was H, Collet G, Guichard A, Gil T, Kuzdzal J, Jozkowicz A, Kieda C, Pichon C and Dulak J (2014). Regulation and novel action of thymidine phosphorylase in non-small cell lung cancer: crosstalk with Nrf2 and HO-1. *PLoS One* 9(5), e97070
- Huetting R, Kersemans V, Cornelissen B, Tredwell M, Hussien K, Christlieb M, Gee AD, Passchier J, Smart SC, Dilworth JR, Gougeon V and Muschel RJ (2014). A comparison of the behavior of (64)Cu-acetate and (64)Cu-ATSM in vitro and in vivo. *J Nucl Med* 55(1), 128-34
- Li XF, Du Y, Ma Y, Postel GC and Civelek AC (2014). (18)F-fluorodeoxyglucose uptake and tumor hypoxia: revisit (18)F-fluorodeoxyglucose in oncology application. *Transl Oncol* 7(2), 240-7
- Collet G, Lamerant-Fayel N, Tertli M, El Hafny-Rahbi B, Stepniowski J, Guichard A, Foucault-Collet A, Klimkiewicz K, Petoud S, Matejuk A, Grillon C, Jozkowicz A, Dulak J and Kieda C (2014). Hypoxia-regulated over expression of soluble VEGFR2 controls angiogenesis and inhibits tumor growth. *Mol Cancer Ther* 13(1), 165-78
- Sun CJ, Li C, Lv HB, Zhao C, Yu JM, Wang GH, Luo YX, Li Y, Xiao M, Yin J and Lang JY (2014). Comparing CT perfusion with oxygen partial pressure in a rabbit VX2 soft-tissue tumor model. *J Radiat Res* 55(1), 183-90
- Jordan BF, Magat J, Collier F, Ozel E, Fruytier AC, Marchand V, Mignon L and Gallez B (2013). Application of MOBILE (mapping of oxygen by imaging lipids relaxation enhancement) to study variations in tumor oxygenation. *Adv Exp Med Biol* 789, 281-8
- Rizwan A, Serganova I, Khanin R, Karabeber H, Ni X, Thakur S, Zakian KL, Blasberg R and Koutcher JA (2013). Relationships between LDH-A, lactate, and metastases in 4T1 breast tumors. *Clin Cancer Res* 19(18), 5158-69
- Yoshikawa H, Ehrhart EJ, Charles JB, Custis JT and Larue SM (2013). Assessment of predictive molecular variables in feline oral squamous cell carcinoma treated with stereotactic radiation therapy. *Vet Comp Oncol*. 2016 Mar;14(1):39-57
- Huang T, Civelek AC, Zheng H, Ng CK, Duan X, Li J, Postel GC, Shen B and Li XF (2013). (18)F-misonidazole PET imaging of hypoxia in micrometastases and macroscopic xenografts of human non-small cell lung cancer: a correlation with autoradiography and histological findings. *Am J Nucl Med Mol Imaging*. 2013;3(2), 142-53
- Pagan J, Przybyla B, Jamshidi-Parsian A, Gupta K and Griffin RJ (2013). Blood outgrowth endothelial cells increase tumor growth rates and modify tumor physiology: relevance for therapeutic targeting. *Cancers (Basel)* 5(1), 205-17
- Ming L, Byrne NM, Camac SN, Mitchell CA, Ward C, Waugh DJ, McKeown SR and Worthington J (2013). Androgen deprivation results in time-dependent hypoxia in LNCaP prostate tumours: informed scheduling of the bioreductive drug AQ4N improves treatment response. *Int J Cancer* 132(6), 1323-32
- Mignon L, Magat J, Schakman O, Marbaix E, Gallez B and Jordan BF (2013). Hexafluorobenzene in comparison with perfluoro-15-crown-5-ether for repeated monitoring of oxygenation using 19F MRI in a mouse model. *Magn Reson Med* 69(1), 248-54
- Coudyzer P, Lemoine P, Jordan BF, Gallez B, Galant C, Nisolle M, Courtoy PJ, Henriot P and Marbaix E (2013). Hypoxia is not required for human endometrial breakdown or repair in a xenograft model of menstruation. *FASEB J*. 27(9), 3711-9
- Kieda C, El Hafny-Rahbi B, Collet G, Lamerant-Fayel N, Grillon C, Guichard A, Dulak J, Jozkowicz A, Kotlinowski J, Fylaktakidou KC, Vidal A, Auzeloux P, Miot-Noirault E, Beloeil JC, Lehn JM and Nicolau C (2013). Stable tumor vessel normalization with pO2 increase and endothelial PTEN activation by inositol trisphosphate brings novel tumor treatment. *J Mol Med (Berl)*. 91(7), 883-99
- Skrzypek K, Tertli M, Golda S, Ciesla M, Weglarczyk K, Collet G, Guichard A, Kozakowska M, Boczkowski J, Was H, Gil T, Kuzdzal J, Muchova L, Vitek L, Loboda A, Jozkowicz A, Kieda C and Dulak J (2013). Interplay between heme oxygenase-1 and miR-378 affects non-small cell lung carcinoma growth, vascularization and metastasis. *Antioxid Redox Signal*. 19(7), 644-60
- Deschepper M, Manassero M, Oudina K, Paquet J, Monfoulet LE, Bensidhoum M, Logeart-Avramoglou D and Petite H (2013). Proangiogenic and prosurvival functions of glucose in human mesenchymal stem cells upon transplantation. *Stem Cells* 31(3), 526-35
- Balleger EA, Madril NJ, Berger KL, Agnew DW and McNiel EA (2013). Evaluation of hypoxia in a feline model of head and neck cancer using 64Cu-ATSM positron emission tomography/computed tomography. *BMC Cancer* 13, 218.
- Tran LB, Bol A, Labar D, Jordan B, Magat J, Mignon L, Grégoire V and Gallez B (2012). Hypoxia imaging with the nitroimidazole (18)F-FAZA PET tracer: A comparison with OxyLite, EPR oximetry and (19)F-MRI relaxometry. *Radiation Oncol*. 105, 29-35
- Thrall DE, Maccarini P, Stauffer P, Macfall J, Hauck N, Snyder S, Case B, Linder K, Lan L, McCall Land Dewhirst MW (2012). Thermal dose fractionation affects tumour physiological response. *Int J Hyperthermia* 28(5), 431-40
- Laurens E, Yeoh SD, Rigopoulos A, Cao D, Cartwright GA, O'Keefe GJ, Tochon-Danguy HJ, White JM, Scott AM and Ackermann U (2012). Radiolabelling and evaluation of novel haloethylsulfoxides as PET imaging agents for tumor hypoxia. *Nucl Med Biol* 39(6), 871-82
- Prevo R, Fokas E, Reaper PM, Charlton PA, Pollard JR, McKenna WG, Muschel RJ and Brunner TB (2012). The novel ATR inhibitor VE-821 increases sensitivity of pancreatic cancer cells to radiation and chemotherapy. *Cancer Biol Ther* 13(11), 1072-81
- Fokas E, Yoshimura M, Prevo R, Higgins G, Hackl W, Maira SM, Bernhard EJ, McKenna WG and Muschel RJ (2012). NVP-BE2235 and NVP-BGT226, dual phosphatidylinositol 3-kinase/mammalian target of rapamycin inhibitors, enhance tumor and endothelial cell radiosensitivity. *Radiat Oncol* 7, 48
- Ming L, Byrne N, Camac S, Mitchell C, Ward C, Waugh D, McKeown S and Worthington J (2012). Androgen deprivation results in time-dependent hypoxia in LNCaP prostate tumours: informed scheduling of the bioreductive drug AQ4N improves treatment response. *Int J Cancer* 132(6), 1323-32
- Ellingsen C, Ovrebo KM, Galappathi K, Mathiesen B and Rofstad EK (2012). pO2 fluctuation pattern and cycling hypoxia in human cervical carcinoma and melanoma xenografts. *Int J Radiat Oncol Biol Phys*. 83(4), 1317-23
- Myers AL, Orr WS, Denbo JW, Ng CY, Zhou J, Spence Y, Wu J and Davidoff AM (2012). Rapamycin-induced tumor vasculature remodeling in rhabdomyosarcoma xenografts increases the effectiveness of adjuvant ionizing radiation. *J Pediatr Surg* 47(1), 183-9
- Hsieh CH, Chang HT, Shen WC, Shyu WC and Liu RS (2012). Imaging the Impact of Nox4 in Cycling Hypoxia-mediated U87 Glioblastoma Invasion and Infiltration. *Mol Imaging Biol*. 14(4), 489-99
- Meng F, Evans JW, Bhupathi D, Banica M, Lan L, Lorente G, Duan JX, Cai X, Mowday M, Guise CP, Maroz A, Anderson RF, Patterson AV, Stachelek GC, Glazer PM, Matteucci MD and Hart CP (2011). Molecular and cellular pharmacology of the hypoxia-activated prodrug TH-302. *Mol Cancer Ther*. 11(3), 740-51
- Carreau A, El Hafny-Rahbi B, Matejuk A, Grillon C and Kieda C (2011). Why is the partial oxygen pressure of human tissues a crucial parameter? Small molecules and hypoxia. *J Cell Mol Med* 15(6), 1239-53
- Serganova I, Rizwan A, Ni X, Thakur SB, Vider J, Russell J, Blasberg R and Koutcher JA (2011). Metabolic imaging: a link between lactate dehydrogenase A, lactate, and tumor phenotype. *Clin Cancer Res* 17(19), 6250-61
- Lawrentschuk N, Lee FT, Jones G, Rigopoulos A, Mountain A, O'Keefe G, Papenfuss AT, Bolton DM, Davis ID and Scott AM (2011). Investigation of hypoxia and carbonic anhydrase IX expression in a renal cell carcinoma xenograft model with oxygen tension measurements and ¹⁸F-CG250 PET/CT. *Urol Oncol* 29(4), 411-20
- Hsieh CH, Shyu WC, Chiang CY, Kuo JW, Shen WC and Liu RS (2011). NADPH oxidase subunit 4-mediated reactive oxygen species contribute to cycling hypoxia-promoted tumor progression in glioblastoma multiforme. *PLoS One* 6(9), e23945
- Kersemans V, Cornelissen B, Huetting R, Tredwell M, Hussien K, Allen PD, Falzone N, Hill SA, Dilworth JR, Gougeon V, Muschel RJ and Smart SC (2011). Hypoxia imaging using PET and SPECT: the effects of anesthetic and carrier gas on [Cu]-ATSM, [Tc]-HL91 and [F]-FMISO tumor hypoxia accumulation. *PLoS One* 6(11), e25911
- Sen A, Capitanio ML, Sperryak JA, Schueckler JT, Thomas S, Singh AK, Evans SS, Hylander BL and Repasky EA (2011). Mild elevation of body temperature reduces tumor interstitial fluid pressure and hypoxia and enhances efficacy of radiotherapy in murine tumor models. *Cancer Res* 71(11), 3872-80
- Winter JD, Akens MK and Cheng H-L, M (2011). Quantitative MRI assessment of VX2 tumour oxygenation changes in response to hyperoxia and hypercapnia. *Phys. Med. Biol.* 56, 1225-1242
- Dairymple SL, Becker RE, Zhou H, Dewese TL and Isaacs JT (2011). Tasquinimod prevents the angiogenic rebound induced by fractionated radiation resulting in an enhanced therapeutic response of prostate cancer xenografts. *Prostate* 72(6), 638-48
- 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* 174(3), 331-40
- 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, 761-71
- Bejota R, Kersemans V, Kelly C, Carroll L, King RC and Gougeon 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
- Ostrandner 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(2), 024010
- Bechet D, Tirand L, Faivre B, Plénat F, Bonnet C, Bastogne T, Frochot C, Guillemin F and Barberi-Heyob M (2009). Neurophilin-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, Larivière 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. *Radiation Oncol* 9, 126-31
- Moriyama EH, Niede MJ, Jarvi MT, Mocanu JD, Moriyama Y, Subarsky P, Li B, Lilje 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 F5a fibrosarcomas. *Int J Radiat Oncol Biol Phys* 71, 542-9
- Chan LS, Malcontenti-Wilson C, Muralidharan V and Christoph C (2008). Alterations in vascular architecture and permeability following Oxi4503 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, Huetting R, Bonnitcha PD, Dilworth JR, Aigbirio FI and Christlieb M (2008). In vitro and in vivo evaluations of a hydrophilic 64Cu-bis(thiosemicarbazonato)-glucose conjugate for hypoxia imaging. *J Nucl Med* 49, 1862-8
- Riedl CC, 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 radiotherapy with bleomycin in murine sarcoma. *Br J Cancer* 98,388-98

Via LE, Lin PL, 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 Bhujwala ZM (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). *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, Muneysu 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

Martini P, De Wever J, Bouzin C, Baudalet 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, Baudalet 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

Cemazar M, Wilson I, Prise VE, Bell KM, Hill SA and Tozer GM (2005). The endothelin B (ETB) receptor agonist IRL 1620 is highly vasoconstrictive in two syngeneic rat tumour lines: potential for selective tumour blood flow modification. *British Journal of Cancer* 9, 98-106

Nikfarjam M, Muralidharan V, Malcontenti-Wilson C and 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

Cárdenas-Navia LI, Daohai Yu D, Braun RD, Brizel DM, Secomb TW and Dewhirst MW (2004). Tumor-dependent kinetics of partial pressure of oxygen fluctuations during air and oxygen breathing. *Cancer Research* 64, 6010-6017

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

Baudalet 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 Aboagye EO (2004). In vivo evaluation of [¹⁸F]fluoroetamidazole 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, 401-11

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 P (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 FSall murine tumors. *Int J Cancer* 103, 138-41

Baudalet 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, Lanzén 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

Cerebral / Stroke / MCAO

Shadgan B, Macnab A, Fong A, Manouchehri N, So K, Shortt K, Streijger F, Crompton PA, Sayre EC, Dumont GA, Pagano R, Kim KT and Kwon BK (2019). Optical Assessment of Spinal Cord Tissue Oxygenation Using a Miniaturized Near Infrared Spectroscopy Sensor. *J Neurotrauma* 36(21), 3034-3043

Marina N, Christie IN, Korsak A, Doronin M, Brazhe A, Hosford PS, Wells JA, Sheikhbahaei S, Humoud I, Paton JFR, Lythgoe MF, Semyanov A, Kasparov S and Gourine AV (2019). Astrocytes monitor cerebral perfusion and control systemic circulation to maintain brain blood flow. *Nat Commun* 11(1), 131

Andelius TCK, Pedersen MV, Bøgh N, Omann C, Hjortdal VE, Pedersen M, Kyng KJ and Henriksen TB (2019). Consequence of insertion trauma - effect on early measurements when using intracerebral devices. *Sci Rep* 9(1), 10652

Tran CHT, George AG, Teskey GC and Gordon GR (2019). Seizures cause sustained microvascular constriction associated with astrocytic and vascular smooth muscle Ca2+ recruitment. *bioRxiv* <http://dx.doi.org/10.1101/644039>

Chen SM, Phuangkaopong S, Fang C, Wu JCC, Huang YH, Vivithanaporn P, Lin HH and Tsai CY (2019). Dose-Dependent Acute Circulatory Fates Elicited by Cadmium Are Mediated by Differential Engagements of Cardiovascular Regulatory Mechanisms in Brain. *Front Physiol* 10, 772

Phillips TJ, Gom RC, Wolff MD and Teskey GC (2019). Caffeine Exacerbates Postictal Hypoxia. *Neuroscience* 192, 32-43

Chen CC, Chang CP and Yang CL (2019). An adaptive fall-free rehabilitation mechanism for ischemic stroke rat patients. *Sci Rep* 9(1), 984

Harris SS, Boorman LW, Kennerley AJ, Sharp PS, Martin C, Redgrave P, Schwartz TH and Berwick J (2018). Seizure epicenter depth and translaminar field potential synchrony underlie complex variations in tissue oxygenation during ictal initiation. *Neuroimage* 171, 165-175

Harris SS, Boorman LW, Das D, Kennerley AJ, Sharp PS, Martin C, Redgrave P, Schwartz TH and Berwick J (2018). Physiological and Pathological Brain Activation in the Anesthetized Rat Produces Hemodynamic-Dependent Cortical Temperature Increases That Can Confound the BOLD fMRI Signal. *Front Neurosci* 12: 550

Hosford PS, Christie IN, Niranjan A, Aziz Q, Anderson N, Ang R, Lythgoe MF, Wells JA, Tinker A and Gourine AV (2018). A critical role for the ATP-sensitive potassium channel subunit KIR6.1 in the control of cerebral blood flow. *J Cereb Blood Flow Metab*. 2018 Jun 4:217678X18780602

Lanigan S, Corcoran AE, Wall A, Mukandala G and O'Connor JJ (2018). Acute hypoxic exposure and prolyl-hydroxylase inhibition improves synaptic transmission recovery time from a subsequent hypoxic insult in rat hippocampus. *Brain Res* 1701,212-218

- Harris SS, Boorman LW, Kennerley AJ, Sharp PS, Martin C, Redgrave P, Schwartz TH and Berwick J (2018). Seizure epicenter depth and translinear field potential synchrony underlie complex variations in tissue oxygenation during ictal initiation. *Neuroimage* 171, 165-175
- Wang KC, Tang SC, Lee JE, Tsai JC, Lai DM, Lin WC, Lin CP, Tu YK and Hsieh ST (2018). Impaired microcirculation after subarachnoid hemorrhage in an in vivo animal model. *Sci Rep* 8(1):13315
- Viriyawan V, Oldfield M and Rodriguez y Baena F (2018). Laser Doppler sensing for blood vessel detection with a biologically inspired steerable needle. *Bioinspiration & Biomimetics* Vol 13, Nr 2
- Lee K, Bohnert S, Wu Y, Vair C, Mikler J, Campbell Teskey G and Dunn JF (2018). Assessment of brain oxygenation imbalance following soman exposure in rats. *Neurotoxicology* 65, 28-37
- Wang HC, Tsai JC, Lee JE, Huang SJ, Po-Hao Huang A, Lin WC, Hsieh ST and Wang KC (2017). Direct visualization of microcirculation impairment after acute subdural hemorrhage in a novel animal model. *J Neurosurg* 129(4), 997-1007
- Lin W, Hsuan YC, Su YC, Lin CH, Lin MT, Chen ZH, Chang CP and Lin KC (2017). CD34- human placenta-derived mesenchymal stem cells protect against heat stroke mortality in rats. *Oncotarget* 9(2), 1992-2001
- Hou H, Khan N, Gohain S, Eskey CJ, Moodie KL, Maurer KJ, Swartz HM and Kuppusamy P (2017). Dynamic EPR Oximetry of Changes in Intracerebral Oxygen Tension During Induced Thromboembolism. *Cell Biochem Biophys* 75(3-4), 285-294
- Wang CC, Kuo JR, Chen YC, Chio CC, Wang JJ and Lin BS (2016). Brain tissue oxygen evaluation by wireless near-infrared spectroscopy. *J Surg Res* 200(2), 669-75
- Bakhsheshi MF, Moradi HV, Stewart EE, Keenlside L and Lee T-Y (2015). Brain Cooling with Ventilation of Cold Air Over Respiratory Tract in Newborn Piglets: An Experimental and Numerical Study. *IEEE J Translational Engineering in Health and Medicine*, Vol 3 doi: 10.1109/JTEHM.2015.2424214
- Schoennagel BP, Yamamura J, Fischer R, Tavares de Sousa M, Weyhmler M, Birkelbach M, Kooijman H, Adam G and Wedegaertner U (2015). BOLD MRI in the brain of fetal sheep at 3T during experimental hypoxia. *J Magn Reson Imaging* 41(1), 110-6
- Schilte C, Bouzat P, Millet A, Boucheix P, Pernet-Gallay K, Lemasson B, Barbier EL and Payen JF (2015). Mannitol Improves Brain Tissue Oxygenation in a Model of Diffuse Traumatic Brain Injury. *Crit Care Med* 43(10), 2212-8
- Schoennagel BP, Yamamura J, Fischer R, Tavares de Sousa M, Weyhmler M, Birkelbach M, Kooijman H, Adam G and Wedegaertner U (2015). BOLD MRI in the brain of fetal sheep at 3T during experimental hypoxia. *J Magn Reson Imaging* 41(1), 110-6
- Tseng LS, Chen SH, Lin MT and Lin YC (2015). Transplantation of human dental pulp-derived stem cells protects against heatstroke in mice. *Cell Transplant* 24(5), 921-37
- Angelova PR, Kasymov V, Christie I, Sheikhabaeh S, Turovsky E, Marina N, Korsak A, Zwicker J, Teschemacher AG, Ackland GL, Funk GD, Kasparov S, Abramov AY and Gourine AV (2015). Functional Oxygen Sensitivity of Astrocytes. *J Neurosci* 35(29), 10460-73
- Tsenov G, Vondrakova K, Otahal J, Burchfiel J and Kubova H (2015). Activation of either the ETA or the ETB receptors is involved in the development of electrographic seizures following intrahippocampal infusion of the endothelin-1 in immature rats. *Exp Neurol* 265, 40-7
- Christen T, Bouzat P, Pannetier N, Coquery N, Moisan A, Lemasson B, Thomas S, Grillon E, Detante O, Rémy C, Payen JF and Barbier EL (2014). Tissue oxygen saturation mapping with magnetic resonance imaging. *J Cereb Blood Flow Metab* 34(9), 1550-7
- Hsu CC, Chen LF, Lin MT and Tian YF (2014). Honokiol protected against heatstroke-induced oxidative stress and inflammation in diabetic rats. *Int J Endocrinol* 2014, 134575
- Tseng LS, Chen SH, Lin MT and Lin YC (2014). Umbilical cord blood-derived stem cells improve heat tolerance and hypothalamic damage in heat stressed mice. *Biomed Res Int* 2014, 685683
- Crespi F (2013). In vivo oxymetric analysis of mild hypercapnia upon cerebral oxygen, temperature and blood flow: markers of mood as proposed by concomitant bupropion challenge and electrochemical analysis? *Exp Brain Res*. 230(4), 597-604
- Bouzat P, Millet A, Boue Y, Pernet-Gallay K, Trouve-Buisson T, Gaide-Chevronnay L, Barbier E and Payen JF (2013). Changes in brain tissue oxygenation after treatment of diffuse traumatic brain injury by erythropoietin. *Crit Care Med* 41(5), 1316-24
- Herrmann AG, Deighton RF, Le Bihan T, McCulloch MC, Searcy JL, Kerr LE and McCulloch J (2013). Adaptive changes in the neuronal proteome: mitochondrial energy production, endoplasmic reticulum stress, and ribosomal dysfunction in the cellular response to metabolic stress. *J Cereb Blood Flow Metab* 33(5), 673-83
- Mazela J, Merritt TA, Terry MH, Gregory TG and Blood AB (2012). Comparison of proactant alfa and lyophilized lucinactant in a preterm lamb model of acute respiratory distress. *Ped Research* 72, 32-37
- Dunn JF, Wu Y, Zhao Z, Srinivasan S and Natah SS (2012). Training the brain to survive stroke. *PLoS One*. 2012;7(9), e45108
- Lee K-L, Niu K-C, Mao-Tsun Lin M-T and Niu C-S (2012). Attenuating brain inflammation, ischemia, and oxidative damage by hyperbaric oxygen in diabetic rats after heat stroke. *Journal of the Formosan Medical Association*, <http://dx.doi.org/10.1016/j.fjma.2012.02.017>
- Haille M, Galoyan S, Li YS, Cohen BH, Quartermain D, Blanck T and Bekker A (2012). Nimodipine-induced hypotension but not nitroglycerin-induced hypotension preserves long- and short-term memory in adult mice. *Anesth Analg* 114(5), 1034-41
- Hou H, Dong R, Li H, Williams B, Larivière JP, Dvoriantchikova G, Ivanov D, Barakat D, Grinberg A, Wen R, Slepak VZ and Shestopalov VI (2012). Genetic ablation of Pannexin1 protects retinal neurons from ischemic injury. *PLoS One*. 2012;7(2), e31991
- Li FCH, Yen J-C, Chan SHH and Chang AYW (2012). Bioenergetics Failure and Oxidative Stress in Brain Stem Mediates Cardiovascular Collapse Associated with Fatal Methamphetamine Intoxication. *PLoS One*. 2012; 7(1), e30589
- Hekmatyar SK, Kauppinen RA, Khan N and Swartz H (2012). Dynamic changes in oxygenation of intracranial tumor and contralateral brain during tumor growth and carbogen breathing: a multisite EPR oximetry with implantable resonators. *J Magn Reson* 214(1), 22-8
- Teranishi K, Scultetus A, Haque A, Stern S, Philbin N, Rice J, Johnson T, Auker C, McCarron R, Ferlic D and Arnaud F (2012). Traumatic brain injury and severe uncontrolled haemorrhage with short delay pre-hospital resuscitation in a swine model. *Injury* 43(5), 585-93
- Connell BJ, Saleh MC, Khan BV, Rajagopal D and Saleh TM (2012). UPEI-100, a conjugate of lipoic acid and apocynin, mediates neuroprotection in a rat model of ischemia/reperfusion. *Am J Physiol Regul Integr Comp Physiol*. 302(7), R886-95
- Liew HK, Pang CY, Hsu CW, Wang MJ, Li TY, Peng HF, Kuo JS and Wang JY (2012). Systemic administration of urocortin after intracerebral hemorrhage reduces neurological deficits and neuroinflammation in rats. *J Neuroinflammation*. 19 (9):13. doi: 10.1186/1742-2094-9-13
- Levi H, Schoknecht K, Prager O, Chassidim Y, Weissberg I, Serlin Y and Friedman A (2012). Stimulation of the sphenopalatine ganglion induces reperfusion and blood-brain barrier protection in the photothrombotic stroke model. *PLoS One*. 2012;7(6), e39636
- Zhu XH, Zhang Y, Wiesner HM, Ugurbil K and Chen W (2012). In vivo measurement of CBF using (17) O NMR signal of metabolically produced H(2) (17) O as a perfusion tracer. *Magn Reson Med*. 70(2), 309-14
- Wang LC, Huang CY, Wang HK, Wu MH and Tsai KJ (2012). Magnesium sulfate and nimesulide have synergistic effects on rescuing brain damage after transient focal ischemia. *J Neurotrauma* 29(7), 1518-29
- Connell BJ, Khan BV, Rajagopal D, and Saleh MT (2012). Novel Neurovascular Protective Agents: Effects of INV-155, INV-157, INV-159, and INV-161 versus Lipoic Acid and Captopril in a Rat Stroke Model. *Cardiology Research and Practice*, 2012, 319230
- Marbacher S, Anderegg L, Neuschmelting V, Widmer HR, von Gunten M, Takala J, Jakob SM and Fandino J (2012). A new rabbit model for the study of early brain injury after subarachnoid hemorrhage. *J Neurosci Methods* 208(2), 138-45
- Connell BJ and Saleh TM (2012). Co-administration of apocynin with lipoic acid enhances neuroprotection in a rat model of ischemia/reperfusion. *Neurosci Lett* 507(1), 43-6
- Baskerville TA, Deuchar GA, McCabe C, Robertson CA, Holmes WM, Santosh C and Macrae IM (2011). Influence of 100% and 40% oxygen on penumbral blood flow, oxygen level, and T2*-weighted MRI in a rat stroke model. *J Cereb Blood Flow Metab*. 31(8), 1799-806
- Chou JL, Wu CH, Tsai CY, Chang AY and Chan SH (2011). Proteomic investigation of a neural substrate intimately related to brain death. *Proteomics* 11(2), 239-48
- Chang HH, Lee YC, Chen MF, Kuo JS and Lee TJ (2011). Sympathetic activation increases basilar arterial blood flow in normotensive but not hypertensive rats. *Am J Physiol Heart Circ Physiol*. 302(5), H123-30
- Lin XJ, Mei GP, Liu J, Li YL, Zuo D, Liu SJ, Zhao TB, and Lin MT (2011). Therapeutic effects of melatonin on heatstroke-induced multiple organ dysfunction syndrome in rats. *J Pineal Res* 50(4), 436-444
- Chan JY, Tsai CY, Wu CH, Li FC, Dai KY, Sun EY, Chan SH and Chang AY (2011). Sumoylation of hypoxia-inducible factor-1 α ameliorates failure of brain stem cardiovascular regulation in experimental brain death. *PLoS One* 6(3), e17375.
- Mishra AM, Ellens DJ, Schridde U, Motelow JE, Purcaro MJ, DeSalvo MN, Enev M, Sanganahalli BG, Hyder F and Blumenfeld H (2011). Where fMRI and electrophysiology agree to disagree: corticothalamic and striatal activity patterns in the WAG/Rij rat. *J Neurosci* 31(42), 15053-64
- Liu X, Zhu XH, Zhang Y and Chen W (2011). Neural origin of spontaneous hemodynamic fluctuations in rats under burst-suppression anesthesia condition. *Cereb Cortex* 21(2), 374-84
- Lin YC, Ko TL, Shih YH, Lin MY, Fu TW, Hsiao HS, Hsu JY and Fu YS (2011). Human umbilical mesenchymal stem cells promote recovery after ischemic stroke. *Stroke* 42(7), 2045-53
- Greco R, Meazza C, Mangione AS, Allena M, Bolla M, Amatea D, Mizoguchi H, Sandrini G, Nappi G and Tassorelli C (2011). Temporal profile of vascular changes induced by systemic nitroglycerin in the meningeal and cortical districts. *Cephalalgia* 31(2), 190-8
- Hamadate N, Yamaguchi T, Sugawara A, Togashi H, Izumi T, Yoshida T, Ohmura Y and Yoshioka M (2010). Liposome-encapsulated hemoglobin ameliorates impairment of fear memory and hippocampal dysfunction after cerebral ischemia in rats. *J Pharmacol Sci* 114, 409 – 419
- Sukhotinsky I, Yaseen MA, Sakadzic S, Ruvinskaya S, Sims JR, Boas DA, Moskowitz MA and Ayata C (2010). Perfusion pressure-dependent recovery of cortical spreading depression is independent of tissue oxygenation over a wide physiologic range. *J Cereb Blood Flow Metab* 30(6), 1168-77
- Ortiz-Prado E, Natah S, Srinivasana S and Dunn JF (2010). A method for measuring brain partial pressure of oxygen in unanesthetized unrestrained subjects: The effect of acute and chronic hypoxia on brain tissue pO₂. *Journal of Neuroscience Methods* 193, 217-225
- 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*. 69(4), 805-812
- Ragoanathan TE et al. (2009). Metoprolol reduces cerebral tissue oxygen tension after acute hemodilution in rats. *Anesthesiology* 111, 988-1000
- Bickenbach J, Zoremba N, Fries M, Dembinski R, Doering R, Ogawa E, Rossaint R and Kuhlén R (2009). Low tidal volume ventilation in a porcine model of acute lung injury improves cerebral tissue oxygenation. *Anesth Analg*. 109(3), 847-55
- 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). Dimemorfan 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
- Gorman 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, Sicking N and Mazer DC (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, Ragoanathan 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
- 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
- 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
- Hsiao G, Lee J-J, Chen Y-C, Lin J-H, Shen M-Y, Lin K-H, Chou D-S and Sheu J-R** (2007). Neuroprotective effects of PMC, a potent α -tocopherol derivative, in brain ischemia-reperfusion: reduced neutrophil activation and anti-oxidant actions. *Biochemical Pharmacology* 73, 682-693
- 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, Tatlisumak 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, 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
- Verberne AJM and McInerney K** (2006). Pancreatic vasoconstrictor responses are regulated by neurons in the rostral ventrolateral medulla. *Brain Res* 1102, 127-134
- Lee JJ, Lin MT, Wang NL, Lin CL and Chang CK** (2005). Platinin, 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(1), 1-7
- Ling K, Braakhuis 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 PtiO₂ 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 N, 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 Met* 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
- 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. *Stroke* 30, 2727-34

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- Ngo JP, Lankadeva YR, Zhu MZL, Martin A, Kanki M, Cochrane AD, Smith JA, Thrift AG, May CN and Evans RG** (2019). Factors that confound the prediction of renal medullary oxygenation and risk of acute kidney injury from measurement of bladder urine oxygen tension. *Acta Physiol (Oxf)* 227(1), e13294
- Chen NT, Barth ED, Lee TH, Chen CT, Epel B, Halpern HJ and Lo LW** (2019). Highly sensitive electron paramagnetic resonance nanoradicals for quantitative intracellular tumor oxymetric images. *Int J Nanomedicine* 14, 2963-2971
- Osawa EA, Cutuli SL, Bitker L, Canet E, Cioccarl I, Iguchi N, Lankadeva YR, Eastwood GM, Evans RG, May CN and Bellomo R** (2019). Effect of Furosemide on Urinary Oxygenation in Patients with Septic Shock. *Blood Purif*. 48(4), 336-345
- O'Neill J, Jasione G, Drummond SE, Brett O, Lucking EF, Abdulla MA and O'Halloran KD** (2019). Renal cortical oxygen tension is decreased following exposure to long-term but not short-term intermittent hypoxia in the rat. *Am J Physiol Renal Physiol* 316(4): F635-F645
- Chan TS, Cassim S, Raymond VA, Gottschalk S, Merlen G, Zwingmann C, Lapierre P, Darby P, Mazer CD and Bilodeau M** (2018). Upregulation of Krebs cycle and anaerobic glycolysis activity early after onset of liver ischemia. *PLoS One* 3(6): e0199177
- Iguchi N, Kosaka J, Booth LC, Iguchi Y, Evans RG, Bellomo R, May CN and Lankadeva YR** (2018). Renal perfusion, oxygenation, and sympathetic nerve activity during volatile or intravenous general anaesthesia in sheep. *Br J Anaesth* 122(3), 342-349
- Lankadeva YR, Evans RG, Kosaka J, Booth LC, Iguchi N, Bellomo R and May CN** (2018). Alterations in regional kidney oxygenation during expansion of extracellular fluid volume in conscious healthy sheep. *Am J Physiol Regul Integr Comp Physiol* 315(6), R1242-R1250
- Ciria R, Navarro E, Sánchez-Frías M, Gallardo AB, Medina J, Ayllón MD, Gomez-Luque I, Ruiz-Rabelo J, Luque A, de la Mata M, Rufián S, López-Cillero P and Briceño J** (2018). Preliminary results from the use of intraoperative real-time biliary oxygen monitoring in liver transplantation. *Clin Transplant*. 32(12):e13433
- Anele UA, Ratz PH, Colhoun AF, Roberts S, Musselman R, Vince RA, Speich JE and Klausner AP** (2018). Potential vascular mechanisms in an ex vivo functional pig bladder model. *NeuroUrol Urodyn*. 37(8), 2425-2433
- Arulkumaran N, Pollen S, Greco E, Courtneidge H, Hall AM, Duchon MR, Tam FWK, Unwin RJ and Singer M** (2018). Renal Tubular Cell Mitochondrial Dysfunction Occurs Despite Preserved Renal Oxygen Delivery in Experimental Septic Acute Kidney Injury. *Crit Care Med*. 46(4):e318-e325
- Lankadeva YR, Kosaka J, Evans RG and May CN** (2018). An Ovine Model for Studying the Pathophysiology of Septic Acute Kidney Injury. *Methods Mol Biol* 1717, 207-218
- Cantow K, Flemming B, Ladwig-Wiegand M, Persson PB and Seeliger E** (2018). Low dose nitrite improves reoxygenation following renal ischemia in rats. *Sci Rep* 8(1), 1748
- Letson HL and Dobson GP** (2017). 3% NaCl adenosine, lidocaine, Mg²⁺ (ALM) bolus and 4 hours "drip" infusion reduces noncompressible hemorrhage by 60% in a rat model. *J Trauma Acute Care Surg* 82(6), 1063-1072
- Damiani E, Dyson A, Zacchetti L, Donati A and Singer M** (2016). Exploring alternative routes for oxygen administration. *Intensive Care Med Exp* 4(1), 34
- Sgouralis I, Kett MM, Ow CP, Abdelkader A, Layton AT, Gardiner BS, Smith DW, Lankadeva YR and Evans RG** (2016). Bladder urine oxygen tension for assessing renal medullary oxygenation in rabbits: experimental and modeling studies. *Am J Physiol Regul Integr Comp Physiol* 311(3), R532-44

- Cantow K, Arakelyan K, Seeliger E, Niendorf T and Pohlmann A (2016). Assessment of Renal Hemodynamics and Oxygenation by Simultaneous Magnetic Resonance Imaging (MRI) and Quantitative Invasive Physiological Measurements. *Methods Mol Biol* 1397, 129-54
- Calzavacca P, Evans RG, Bailey M, Bellomo R and May CN (2015). Variable responses of regional renal oxygenation and perfusion to vasoactive agents in awake sheep. *Am J Physiol Regul Integr Comp Physiol* 309(10), R1226-33
- Zhang J, Zhang M, Zhang J and Xia Q (2015). A Novel Mouse Model of Liver Ischemic/Reperfusion Injury and its Differences to the Existing Model. *J Invest Surg* 28(5), 283-91
- Wilde AD, Snyder DJ, Putnam NE, Valentino MD, Hammer ND, Lonergan ZR, Hinger SA, Aysanoa EE, Blanchard C, Dunman PM, Wasserman GA, Chen J, Shopsis B, Gilmore MS, Skaar EP and Cassat JE (2015). Bacterial Hypoxic Responses Revealed as Critical Determinants of the Host-Pathogen Outcome by TnSeq Analysis of *Staphylococcus aureus* Invasive Infection. *PLoS Pathog* 11(12), e1005341
- Calzavacca P, Evans RG, Bailey M, Bellomo R and May CN (2015). Cortical and Medullary Tissue Perfusion and Oxygenation in Experimental Septic Acute Kidney Injury. *Crit Care Med* 43(10), e431-9
- Calzavacca P, Evans RG, Bailey M, Lankadeva YR, Bellomo R and May CN (2015). Long-term measurement of renal cortical and medullary tissue oxygenation and perfusion in unanesthetized sheep. *Am J Physiol Regul Integr Comp Physiol* 308(10), R832-9
- Grosenick D, Cantow K, Arakelyan K, Wabnitz H, Flemming B, Skalweit A, Ladwig M, Macdonald R, Niendorf T and Seeliger E (2015). Detailing renal hemodynamics and oxygenation in rats by a combined near-infrared spectroscopy and invasive probe approach. *Biomed Opt Express* 6(2), 309-23
- Muir WW, Del Rio CL, Ueyama Y, Youngblood BL, George RS, Rausch CW, Lau BS and Hamlin RL (2014). Dose-Dependent Hemodynamic, Biochemical, and Tissue Oxygen Effects of OC99 following Severe Oxygen Debt Produced by Hemorrhagic Shock in Dogs. *Crit Care Res Pract.* 2014, 864237
- Umbrello M, Dyson A, Pinto BB, Fernandez BO, Simon V, Feelisch M and Singer M (2014). Short-term hypoxic vasodilation in vivo is mediated by bioactive nitric oxide metabolites, rather than free nitric oxide derived from haemoglobin-mediated nitrite reduction. *J Physiol*, 592(Pt 5), 1061-75
- Guerci P, Tran N, Menu P, Losser MR, Meistelman C and Longrois D (2014). Impact of fluid resuscitation with hypertonic-hydroxyethyl starch versus lactated ringer on hemorheology and microcirculation in hemorrhagic shock. *Clin Hemorheol Microcirc* 56(4), 301-17
- Sabbatini G, Dyson A and Singer M (2014). Metabolic acidosis induced by haemorrhage and hydrochloric acid generates different cardiorespiratory responses. *Intensive Care Medicine Experimental* 2(Suppl 1):P36 Poster
- He K, Chen X, Han C, Xu L, Zhang J, Zhang M and Xia Q (2013). Lipopolysaccharide-induced cross-tolerance against renal ischemia-reperfusion injury is mediated by hypoxia-inducible factor-2 α -regulated nitric oxide production. *Kidney Int.* 85(2), 276-8
- Dyson A, Simon F, Seifritz A, Zimmerling O, Matallo J, Calzia E, Radermacher P and Singer M (2012). Bladder tissue oxygen tension monitoring in pigs subjected to a range of cardiorespiratory and pharmacological challenges. *Intensive Care Med.* 38(11), 1868-76
- Zhang S, Han CH, Chen XS, Zhang M, Xu LM, Zhang JJ and Xia Q (2012). Transient ureteral obstruction prevents against kidney ischemia/reperfusion injury via hypoxia-inducible factor (HIF)-2 α activation. *PLoS One.* 7(1), e29876
- Shue Dong Chung, Ting Yu Lai, Chiang Ting Chien, and Hong Jen Yu (2012) Activating Nrf-2 Signaling Depresses Unilateral Ureteral Obstruction-Evoked Mitochondrial Stress-Related Autophagy, Apoptosis and Pyroptosis in Kidney. *PLoS One* 7(10), e47299
- Sánchez-Etayo G, Borrat X, Escobar B, Hessheimer A, Rodríguez-Laiz G and Taura P (2012). Effect of intra-abdominal pressure on hepatic microcirculation: implications of the endothelin-1 receptor. *J Dig Dis* 13(9), 478-85
- Cheng H-LM (2012). Effect of Hyperoxia and Hypercapnia on Tissue Oxygen and Perfusion Response in the Normal Liver and Kidney. *PLoS One* 7(7), e40485
- Brügger LE, Beldi G, Stalder M, Porta F, Candinas D, Takala J and Jakob SM (2012). Postoperative splanchnic blood flow redistribution in response to fluid challenges in the presence and absence of endotoxemia in a porcine model. *Shock* 37(1), 116-21
- Patel NN, Lin H, Toth T, Jones C, Ray P, Welsh GI, Satchell SC, Sleeman P, Angelini GD and Murphy GJ (2011). Phosphodiesterase-5 inhibition prevents postcardiopulmonary bypass acute kidney injury in swine. *Ann Thorac Surg* 92(6), 2168-76
- Patel NN, Toth T, Jones C, Lin H, Ray P, George SJ, Welsh G, Satchell SC, Sleeman P, Angelini GD and Murphy GJ (2011). Prevention of post-cardiopulmonary bypass acute kidney injury by endothelin A receptor blockade. *Crit Care Med.* 2011 39(4), 793-802
- Patel NN, Lin H, Toth T, Welsh GI, Jones C, Ray P, Satchell SC, Sleeman P, Angelini GD and Murphy GJ (2011). Reversal of anaemia with allogenic RBC transfusion prevents post-cardiopulmonary bypass acute kidney injury in swine. *Am J Physiol Renal Physiol* 301(3), F605-14
- Dyson A, Bezemer R, Legrand M, Balestra G, Singer M and Ince C (2011). Microvascular and interstitial oxygen tension in the renal cortex and medulla studied in a 4-h rat model of LPS-induced endotoxemia. *Shock* 36(1), 83-9
- Zaets SB, Xu D-Z, Lu Q, Feketova E, Berezina TL, Malinina IV, Deitch EA and Olsen EH (2010). Recombinant Factor XIII Mitigates Hemorrhagic Shock-Induced Organ Dysfunction. *Journal of Surgical Research, J Surg Res.* 166(2), e135-42
- Mac Grory B, O'Connor Et, O'Halloran KD and Jones JFX (2010). The effect of pro-inflammatory cytokines on the discharge rate of vagal nerve paraganglia in the rat. *Respiratory Physiology & Neurobiology* 171, 122-127
- 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
- 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
- Cai RS, Alexander MS, Marson L (2008). Activation of somatosensory afferents elicit changes in vaginal blood flow and the urethrogenital reflex via autonomic efferents. *J Urol* 180, 1167-72
- Guven S, Muci E, Unsal MA, Yulug E, Alver A, Duman MK and Mentese A (2008). The effects of carbon dioxide pneumoperitoneum on ovarian blood flow, oxidative stress markers, and morphology during laparoscopy: a rabbit model. *Fertil Steril.* 93(4), 1327-32
- Deniz T, Agalar C, Agalar F, Comu FM, Caglayan O, Alpay 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* 158(1), 121-126
- 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
- Krejci V, Hildebrand LB and Sigurdsson GH (2006). Effects of epinephrine, norepinephrine, and phenylephrine on microcirculatory blood flow in the gastrointestinal tract in sepsis. *Critical Care Medicine* 34, 1456-146
- 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
- Hildebrand 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, Hildebrand LB, 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, Hildebrand 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
- 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
- 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
- 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 of renal oxygenation. *Kidney International* 71, 1327-1328
- 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
- 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
- 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
- Rhee TK, Larson AC, Prasad PV, Santos E, Sato KT, Salem R, Deng J, Paunesku T, Woloschak GE, Mulchay 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
- 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
- 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

Plastic Surgery / Wound Healing

- Tang D, Yan T, Zhang J, Jiang X, Zhang D and Huang Y (2017). Notch1 Signaling Contributes to Hypoxia-induced High Expression of Integrin β 1 in Keratinocyte Migration. *Sci Rep* 7, 43926
- Wisniewski NA, Nichols SP, Gamsey SJ, Pullins S, Au-Yeung KY, Klitzman B and Helton KL (2017). Tissue-Integrating Oxygen Sensors: Continuous Tracking of Tissue Hypoxia. *Adv Exp Med Biol* 977, 377-383
- Xie P, Jia S, Tye R, Chavez-Munoz C, Vracar-Grabar M, Hong SJ, Galiano R and Mustoe TA (2015). Systemic administration of hemoglobin improves ischemic wound healing. *J Surg Res* 194(2), 696-705
- You JO, Rafat M, Almeda D, Maldonado N, Guo P, Nabzdyk CS, Chun M, LoGerfo FW, Hutchinson JW, Pradhan-Nabzdyk LK and Auguste DT (2015). pH-responsive scaffolds generate a pro-healing response. *Biomaterials* 57, 22-32
- Ponticorvo A, Taydas E, Mazhar A, Scholz T, Kim HS, Rimler J, Evans GR, Cuccia DJ and Durkin AJ (2013). Quantitative assessment of partial vascular occlusions in a swine pedicle flap model using spatial frequency domain imaging. *Biomed Opt Express* 4(2), 298-306
- Koc E, Topaloglu S, Calik A, Sokmensuer C, Abdullazade S, Karabulut E and Piskin B (2013). Hepatic microcirculation in inflow and inflow-outflow occlusion of the liver. *Transplant Proc* 45(2), 474-9
- Covington S, Adams GL, and Dixon K (2012). Ultrasound-mediated oxygen delivery to lower extremity wounds. *Wounds* 24(8)
- 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
- 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
- Lesnik G, Remenschnieder 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
- Russell JA, Conforti ML, Connor NP and Hartig GK (2007). Cutaneous tissue flap viability following partial venous obstruction. *Plast Reconstr Surg* 117, 2259-66
- Contaldo C, Harder Y, Plock J, Banic A, Jakob S and Erni D (2007). The influence of local and systemic preconditioning on oxygenation, metabolism and survival in critically ischaemic skin flaps in pigs. *Journal of Plastic, Reconstructive & Aesthetic Surgery* 60, 1182-1192
- 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
- Contaldo C, Plock J, Sakai H, Takeoka S, Tsuchida E, Leunig M, Banic A, Erni 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, Kuppussamy 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
- Harder Y, Contaldo C, Klenk J, Banic A, Jakob SM and Erni D (2005). Preconditioning with monophosphoryl lipid A improves survival of critically ischemic tissue. *Anesth Analg* 100, 1786-1792
- Rodrigues LM, Pinto PC, Magro MJ and Alves MFJ (2004). Exploring the influence of skin perfusion on transepidermal water loss. *Skin Research and Technology* 10, 257-262
- Rodrigues ML, Magro MJ, Pinto CP, Mouzinho M and Almeida A (2004). Non-invasive assessment of wound-healing pathophysiology by transcutaneous indicators. *Annals of Burns and Fire Disasters* 17(3)
- Peltonen LM and Pyörnilä A (2004). Local action of exogenous nitric oxide (NO) on the skin blood flow of rock pigeons (*Columba livia*) is affected by acclimation and skin site. *Journal of Experimental Biology* 207, 2611-2619
- Hiltebrand LB, Krejci V and Sigurdsson GH (2004). Effects of dopamine, dobutamine, and dexopamine on microcirculatory blood flow in the gastrointestinal tract during sepsis and anesthesia. *Anesthesiology* 100, 1188-1197
- Rosado C and Rodrigues LM (2003). In vivo study of the physiological impact of stratum corneum sampling methods. *International Journal of Cosmetic Science* 25, 37-44
- Schramm S, Wettstein R, Wessendorf R, Jakob SM, Banic A and Erni D (2002). Acute normovolemic hemodilution improves oxygenation in ischemic flap tissue. *Anesthesiology* 96, 478-1484
- Erni D, Wessendorf R, Wettstein R, Banic A and Schilling MK (2001). Endothelin receptor blockade improves oxygenation in contralateral TRAM flap tissue in pigs. *British Journal of Plastic Surgery* 54(5), 412-418
- Raisis AL, Young LE, Taylor PM, Walsh KP and Leukeu P (2000). Doppler ultrasonography and single-fiber laser Doppler flowmetry for measurement of hind limb blood flow in anesthetized horses. *American Journal of Veterinary Research* 61(3), 286-290
- Physiology / Ischemia**
- Baark F, Shaughnessy F, Pell VR, Clark JE, Eykyn TR, Blower P and Southworth R (2019). Tissue acidosis does not mediate the hypoxia selectivity of [64Cu]Cu(ATSM)] in the isolated perfused rat heart. *Sci Rep* 9(1), 499
- Rossello X, He Z and Yellon DM (2018). Myocardial Infarct Size Reduction Provided by Local and Remote Ischaemic Preconditioning: Reference Values from the Hatter Cardiovascular Institute. *Cardiovasc Drugs Ther* 32(2), 127-133
- Shimizu EN, Seifert JL, Johnson KJ and Romero-Ortega MI (2018). Prophylactic Riluzole Attenuates Oxidative Stress Damage in Spinal Cord Distraction. *J Neurotrauma* 35(12), 1319-1328
- Streijger F, So K, Manouchehri N, Gheorge A, Okon EB, Chan RM, Ng B, Shortt K, Sekhon MS, Griesdale DE and Kwon BK (2018). A Direct Comparison between Norepinephrine and Phenylephrine for Augmenting Spinal Cord Perfusion in a Porcine Model of Spinal Cord Injury. *J Neurotrauma* 35(12), 1345-1357
- Perry DA, Thomson LM, Pigula FA, Polizzotti BD, DiNardo JA, Nedder A, Gauvreau K and Kheir JN (2018). Changes in tissue oxygen tension, venous saturation, and Fick-based assessments of cardiac output during hyperoxia. *Acta Anaesthesiol Scand* 63(1), 93-100
- Chan TS, Cassim S, Raymond VA, Gottschalk S, Merlen G, Zwingmann C, Lapierre P, Darby P, Mazer CD and Bilodeau M (2018). Upregulation of Krebs cycle and anaerobic glycolysis activity early after onset of liver ischemia. *PLoS One* 13(6):e0199177
- Ekbal NJ, Hennis P, Dyson A, Mythen M, James MFM and Singer M (2018). The anion study: effect of different crystalline solutions on acid base balance, physiology, and survival in a rodent model of acute isovolemic haemodilution. *Br J Anaesth* 120(6), 1412-1419
- Hellman KM, Yu PY, Oladosu FA, Segel C, Han A, Prasad PV, Jilling T and Tu FF (2017). The Effects of Platelet-Activating Factor on Uterine Contractility, Perfusion, Hypoxia, and Pain in Mice. *Reprod Sci* 25(3), 384-394
- Davidson SM, He Z, Dyson A, Bromage DI and Yellon DM (2017). Ventilation strategy has a major influence on remote ischaemic preconditioning in mice. *J Cell Mol Med* 21(10), 2426-2431
- Streijger F, So K, Manouchehri N, Lee JHT, Okon EB, Shortt K, Kim SE, McInnes K, Crompton P and Kwon BK (2017). Changes in Pressure, Hemodynamics, and Metabolism within the Spinal Cord during the First 7 Days after Injury Using a Porcine Model. *J Neurotrauma* 34(24):3336-3350
- Shadgan B, Kwon BK, Streijger F, Manouchehri N, So K, Shortt K, Crompton P and Macnab A (2017). Optical monitoring of spinal cord hemodynamics, a feasibility study. *Proc SPIE 10072, Optical Diagnostics and Sensing XVII: Toward Point-of-Care Diagnostics, 100720T (February 17, 2017); doi:10.1117/12.2248776*
- Cezar CA, Roche ET, Vandenburgh HH, Duda GN, Walsh CJ, Mooney DJ (2016). Biologic-free mechanically induced muscle regeneration. *Proc Natl Acad Sci USA* 113(6):1534-9
- von Aspern K, Haunschild J, Hoyer A, Luehr M, Bakhtary F, Misfeld M, Mohr FW and Etz CD (2016). Non-invasive spinal cord oxygenation monitoring: validating collateral network near-infrared spectroscopy for thoracoabdominal aortic aneurysm repair. *Eur J Cardiothorac Surg* 50(4):675-683
- Bovis MJ, Noimark S, Woodhams JH, Kay CWM and Weiner J (2015). Photosensitisation studies of silicone polymer doped with methylene blue and nanogold for antimicrobial applications. *RSC Adv.*, 2015, 5, 54830
- Mahling M, Fuchs K, Thaiss WM, Maier FC, Feger M, Bukala D, Harant M, Eichner M, Reutershan J, Lang F, Reischl G, Pichler BJ and Kneilling M (2015). A Comparative pO2 Probe and [18F]-Fluoro-Azomycinarabino-Furanoside ([18F]FAZA) PET Study Reveals Anesthesia-Induced Impairment of Oxygenation and Perfusion in Tumor and Muscle. *PLoS One* 10(4):e0124665
- Hendargo HC, Zhao Y, Allenby T and Palmer GM (2015). Snap-shot multispectral imaging of vascular dynamics in a mouse window-chamber model. *Opt Lett* 40(14), 3292-5
- Jiang X, Nguyen TT, Tian W, Sung YK, Yuan K, Qian J, Rajadas J, Sallenave JM, Nickel NP, de Jesus Perez V, Rabinovitch M and Nicolls MR (2015). Cyclosporine Does Not Prevent Microvascular Loss in Transplantation but Can Synergize With a Neutrophil Elastase Inhibitor, Elafin, to Maintain Graft Perfusion During Acute Rejection. *Am J Transplant* 15(7), 1768-81
- Schafer R and Gmitro AF (2015). Dynamic oxygenation measurements using a phosphorescent coating within a mammary window chamber mouse model. *Biomed Opt Express* 6(2), 639-50
- Dyson A, Ekbal N, Stotz M, Barnes S, Carré J, Tully S, Henderson S, Barrett L and Singer M (2014). Component reductions in oxygen delivery generate variable haemodynamic and stress hormone responses. *Br J Anaesth* 113(4), 708-16]
- Twu CW, Reuther MS, Briggs KK, Sah RL, Masuda K and Watson D (2014). Effect of oxygen tension on tissue-engineered human nasal septal chondrocytes. *Allergy Rhinol (Providence)* 5(3), 125-31
- Eisenbrey JR, Albala L, Kramer MR, Daroshefski N, Brown D, Liu JB, Stanczak M, O'Kane P, Forsberg F and Wheatley MA (2014). Development of an ultrasound sensitive oxygen carrier for oxygen delivery to hypoxic tissue. *Int J Pharm* 478(1), 361-367
- Chemonges S, Shekar K, Tung JP, Dunster KR, Diab S, Platts D, Watts RP, Gregory SD, Foley S, Simonova G, McDonald C, Hayes R, Bellpart J, Timms D, Chew M, Fung YL, Toon M, Maybaur MO and Fraser JF (2014). Optimal management of the critically ill: anaesthesia, monitoring, data capture, and point-of-care technological practices in ovine models of critical care. *Biomed Res Int* 2014:468309
- Umbrello M, Dyson A, Pinto BB, Fernandez BO, Simon V, Feelisch M and Singer M (2014). Short-term hypoxic vasodilation in vivo is mediated by bioactive nitric oxide metabolites, rather than free nitric oxide derived from haemoglobin-mediated nitrite reduction. *J Physiol* 592(Pt 5), 1061-75
- Reger S, Hedayati M, Zhang Y, Zhou H, Dalrymple S, Koch CJ, Isaacs JT and DeWeese TL (2014). Androgen withdrawal fails to induce detectable tissue hypoxia in the rat prostate. *Prostate* 74(8), 805-10
- Yang CC, Yao CA, Lin YR, Yang JC and Chien CT (2014). Deep-sea water containing selenium provides intestinal protection against duodenal ulcers through the upregulation of Bcl-2 and thioredoxin reductase 1. *PLoS One* 9(7), e96006
- Radloff D, Zhao Y, Boico A, Blueschke G, Palmer G, Fontanella A, Dewhirst M, Piantadosi CA, Noveck R, Irwin D, Hamilton K, Klitzman B and Schroeder T (2014). Anti-hypotensive treatment and endothelin blockade synergistically antagonize exercise fatigue in rats under simulated high altitude. *PLoS One* 9(6), e99309
- Seeliger E, Cantow K, Arakelyan K, Ladwig M, Persson PB and Flemming B (2014). Low-dose nitrite alleviates early effects of an X-ray contrast medium on renal hemodynamics and oxygenation in rats. *Invest Radiol* 49(2), 70-7
- Doro CJ, Sitzman TJ and O'Toole RV (2014). Can intramuscular glucose levels diagnose compartment syndrome? *J Trauma Acute Care Surg* 76(2), 474-8
- Poole KM, Tucker-Schwartz JM, Sit WW, Walsh AJ, Duvali CL and Skala MC (2013). Quantitative optical imaging of vascular response in vivo in a model of peripheral arterial disease. *Am J Physiol Heart Circ Physiol* 305(8), H1168-80
- Jiang X, Malkovskiy AV, Tian W, Sung YK, Sun W, Hsu JL, Manickam S, Wagh D, Joubert LM, Semenza GL, Rajadas J and Nicolls MR (2013). Promotion of airway anastomotic microvascular regeneration and alleviation of airway ischemia by deferoxamine nanoparticles. *Biomaterials* 35(2), 803-13
- Pohlmann A, Cantow K, Hentschel J, Arakelyan K, Ladwig M, Flemming B, Hoff U, Persson PB, Seeliger E and Niendorf T (2013). Linking non-invasive parametric MRI with invasive physiological measurements (MR-PHYSIOL): towards a hybrid and integrated approach for investigation of acute kidney injury in rats. *Acta Physiol (Oxf)* 207(4), 673-89
- Needles A, Heimpler A, Sun J, Theodoropoulos C, Bates D, Hirson D, Yin M and Foster F (2013). Development and initial application of a fully integrated photoacoustic micro-ultrasound system. *IEEE Trans Ultrason Ferroelectr Freq Control* 60(5), 888-97
- Khan MA, Maasch C, Vater A, Klussmann S, Morser J, Leung LL, Atkinson C, Tomlinson S, Heeger PS and Nicolls MR (2013). Targeting complement component 5a promotes vascular integrity and limits airway remodeling. *Proc Natl Acad Sci USA* 110(15), 6061-6
- McNamee EN, Korn Johnson D, Homann D and Clambey ET (2013). Hypoxia and hypoxia-inducible factors as regulators of T cell development, differentiation, and function. *Immunol Res* 55(1-3), 58-70
- Rafferty AR, Evans RG, Scheelings TF and Reina RD (2013). Limited oxygen availability in utero may constrain the evolution of live birth in reptiles. *Am Nat* 181(2), 245-53
- Aimot-Macron S, Salomon LJ, Deloison B, Thiam R, Cuenod CA, Clement O and Siauve N (2013). In vivo MRI assessment of placental and foetal oxygenation changes in a rat model of growth restriction using blood oxygen level-dependent (BOLD) magnetic resonance imaging. *Eur Radiol* 23(5), 1335-42
- Khan MA, Dhillon G, Jiang X, Lin YC and Nicolls MR (2012). New Methods for Monitoring Dynamic Airway Tissue Oxygenation and Perfusion in Experimental and Clinical Transplantation. *Am J Physiol Lung Cell Mol Physiol* 303(10), L861-9
- Reuther MS, Briggs KK, Schumacher BL, Masuda K, Sah RL and Watson D (2012). In vivo oxygen tension in human septal cartilage increases with age. *Laryngoscope*. 122(11), 2407-10
- Nasui OC, Nathanael G, Miller E, Belik J, Crawley A, Weiss R, Detzler G, Zhong A, Moineddin R and Doria AS (2012). Responsiveness of BOLD MRI to Short-Term Temperature Changes in Rabbit Knees with Inflammatory Arthritis. *Rheumatol Curr Res* 2012, S2, <http://dx.doi.org/10.4172/2161-1149.S2-003>
- Griffin KM, O'Herlihy C, O'Connell PR and Jones JF (2012). Combined ischemic and neuropathic insult to the anal canal in an animal model of obstetric-related trauma. *Dis Colon Rectum* 55(1), 32-41
- Davis BH, Morimoto Y, Sample C, Olbrich K, Leddy HA, Guilak F and Taylor DA (2012). Effects of myocardial infarction on the distribution and transport of nutrients and oxygen in porcine myocardium. *J Biomech Eng* 134(10), 101005
- Radloff DR, Zhao Y, Boico A, Wu C, Shan S, Palmer G, Hamilton K, Irwin D, Hanna G, Piantadosi CA and Schroeder T (2012). The combination of theophylline and endothelin receptor antagonism improves exercise performance of rats under simulated high altitude. *J Appl Physiol* 113(8), 1243-52
- Mutoh T, Sanosaka T, Ito K and Nakashima K (2012). Oxygen levels epigenetically regulate fate switching of neural precursor cells via hypoxia-inducible factor 1 α -notch signal interaction in the developing brain. *Stem Cells* 30(3), 561-9
- Yamaoka I, Kikuchi T, Arata T and Kobayashi E (2012). Organ preservation using a photosynthetic solution. *Transplantation Research* 2012, 1:2
- Chang HH, Lee YC, Chen MF, Kuo JS and Lee TJ (2012). Sympathetic activation increases basilar arterial blood flow in normotensive but not hypertensive rats. *Am J Physiol Heart Circ Physiol*. 302(5), H1123-30
- El Beheiry MH, Heximer SP, Voigtlaender-Bolz J, Mazer CD, Connelly KA, Wilson DF, Beattie WS, Tsui AK, Zhang H, Golam K, Hu T, Liu E, Lidington D, Bolz SS and Hare GM (2011). Metoprolol impairs resistance artery function in mice. *J Appl Physiol*. 111(4), 1125-33
- Khan MA, Jiang X, Dhillon G, Beilke J, Holers VM, Atkinson C, Tomlinson S and Nicolls MR (2011). CD4+ T cells and complement independently mediate graft ischemia in the rejection of mouse orthotopic tracheal transplants. *Circ Res* 109(11), 1290-301
- Gyawali S, Solis L, Chong SL, Curtis C, Seres P, Kornelsen I, Thompson R and Mushahwar VK (2011). Intermittent electrical stimulation redistributes pressure and promotes tissue oxygenation in loaded muscles of individuals with spinal cord injury. *J Appl Physiol* 110(1), 246-55
- Evans RG, Goddard D, Eppel GA and O'Connor PM (2011). Factors that render the kidney susceptible to tissue hypoxia in hypoxemia. *Am J Physiol Regul Integr Comp Physiol* 300(4), R931-40

- Evans RG, Goddard D, Eppel GA and O'Connor PM (2011). Stability of tissue pO₂ in the face of altered perfusion: a phenomenon specific to the renal cortex and independent of resting renal oxygen consumption. *Clin Exp Pharmacol Physiol* 38(4), 247-54
- Hoff U, Lukitsch I, Chaykovska L, Ladwig M, Arnold C, Manthali VL, Fuller TF, Schneider W, Gollasch M, Muller DN, Flemming B, Seeliger E, Luft FC, Falck JR, Dragun D and Schunck WH (2011). Inhibition of 20-HETE synthesis and action protects the kidney from ischemia/reperfusion injury. *Kid Int* 79(1), 57-65
- 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
- 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* 52(2), 412-20
- 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 lucinactant and proactant alfa and their peri-dosing hemodynamic effects in a preterm lamb model of respiratory distress syndrome. *Pediatr Res* 68(3), 193-8
- 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, Viganì 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
- Isbil-Buyukcoksun N, Gulec G, Cam-Etoz B and Ozluk K (2009). Peripheral GLP-1 gastroprotection against ethanol: The role of exendin, NO, CGRP, prostaglandins and blood flow. *Regul Pept* 152, 22-27
- 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
- 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 Emanuelli 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
- Babu AN, Murakawa T, Thurman JM, Miller EJ, Henson PM, Zamora MR, Voelkel NF and Nicolls MR (2007). Microvascular dysfunction identifies murine allografts that cannot be rescued from airway fibrosis. *J Clin Invest* 117, 3774-85
- 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
- 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
- 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
- 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 Suppl 3, 140-47
- 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
- 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
- van der Bilt JDW, Kranenburg 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 metastases in a highly standardized murine model. *Hepatology* 42, 165-175
- 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. *JPN 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
- 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
- Mäkinen TM, Pääkkönen T, Palinkas LA, Rintamäki H, Leppälä J and Hassi J (2004). Seasonal changes in thermal responses of urban residents to cold exposure. *Comp Biochem Physiol A Mol Integr Physiol* 139, 29-238
- Omar AA, Mavor AID, Jones AM and Homer-Vanniasinkam S (2004). Treatment of venous leg ulcers with Dermagraft®. *European Journal of Vascular and Endovascular Surgery*, 27, 666-672
- Calatayud S, Canet A, Bello R, Hernández C, Martí M and Barrachina MD (2003). Low endotoxemia prevents the reduction of gastric blood flow induced by NSAIDs: role of nitric oxide. *British Journal of Pharmacology* 139, 263-270
- Morales J, Moitinho E, Abalde JG, Fernández M and Bosch J (2003). Effects of the V1a vasopressin agonist F-180 on portal hypertension-related bleeding in portal hypertensive rats. *Hepatology* 38, 1378-1383
- Cernanec J, Gulak, Weinberg JB, Pisetsky DS and Fermor B (2002). Influence of hypoxia and reoxygenation on cytokine-induced production of proinflammatory mediators in articular cartilage. *Arthritis Rheum* 46, 968-75
- Hillebrand U, Kobelt V, vOphoven M, Suwelack B, Matzkies F, Gerhardt U, Sindermann J and Hohage H (2002). Influence of antihypertensive drugs on renal microcirculation and renal hemodynamics in cyclosporine a-treated rats. *Transplantation Proceedings* 34, 1383-1384
- 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
- Castañeda B, Morales J, Lionetti R, Moitinho E, Andreu V, Pérez-del-Pulgar S, Pizcueta P, Rodés J and Bosch J (2001). Effects of blood volume restitution following a portal hypertensive-related bleeding in anesthetized cirrhotic rats. *Hepatology* 33(4), 821-825
- 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
- Nazzaro P, Triggiani R, Ciancio L, Scarano AM, Merlo M, Manzari M, Cicco G, Manicone A and Pirelli A (1999). Microvascular changes during laboratory stimuli and structural haemodynamic indices: the role of pulse pressure. *Clinical Hemorheology and Microcirculation* 21, 225-232
- Calatayud S, Sanz M-J, Canet A, Bello R, Díaz de Rojas F and Esplugues JV (1999). Mechanisms of gastroprotection by transdermal nitroglycerin in the rat. *British Journal of Pharmacology* 127, 1111-1118
- Darlington SE, Carolan-Rees G, Davies WT, Griffiths H and Woodcock JP (1998). Use of a multi-channel laser Doppler flowmeter in the objective assessment of hand-arm vibration syndrome patients. *Journal of Vascular Investigation* 4, 31-34.
- Khatab M, Hohage H, Hollah P, Rahn K-H and Schlatter E (1998). Effects of diadenosine polyphosphates on systemic and regional hemodynamics in anesthetized rats. *Kidney & Blood Pressure Research* 21, 42-49
- Kuznetsova LV, Tomasek N, Sigurdsson GH, Banic A, Erni D and Wheatley AM (1998). Dissociation between volume blood flow and laser-Doppler signal from rat muscle during changes in vascular tone. *Physiol Heart Circ Physiol* 274 (4), H1248-H1254
- Cortijo J, Pons R, Dasí F, Marín N, Martínez-Losa M, Advenier C and Morcillo EJ (1997). Bronchodilator and anti-inflammatory activities of SCA40: studies in human isolated bronchus, human eosinophils, and in the guinea-pig in vivo. *Naunyn-Schmiedeberg's Archives of Pharmacology* 35, 806-814
- Magerl W and Treede R-D (1996). Heat-evoked vasodilatation in human hairy skin: axon reflexes due to low-level activity of nociceptive afferents. *Journal of Physiology* 497, 837-848

Ophthalmology

- Kim JR, Park YG and Roh YJ (2018). Comparison of pre-retinal oxygen pressure changes after selective retina therapy versus conventional photocoagulation in the rabbit eye. *Graefes Arch Clin Exp Ophthalmol* 256(8), 1459-1467
- Williamson BK, Hawkey NM, Blake DA, Frenkel JW, McDaniel KP, Davis JK, Satija C, Beazer A, Dhungana S, Carlson J, McRitchie S and Ayyala RS (2018). The Effects of Glaucoma Drainage Devices on Oxygen Tension, Glycolytic Metabolites, and Metabolomics Profile of Aqueous Humor in the Rabbit. *Transl Vis Sci Technol* 7(1), 14
- Zhang Z, Huang W, Lei M, He Y, Yan M, Zhang X and Zhao C (2016). Laser-triggered intraocular implant to induce photodynamic therapy for posterior capsule opacification prevention. *Int J Pharm* 498(1-2), 1-11
- Murali K, Kang D, Nazari H, Scianmarello N, Cadenas E, Tai YC, Kashani A and Humayun M (2016). Spatial Variations in Vitreous Oxygen Consumption. *PLoS One* 11(3), e0149961
- Huang AJ, Shui YB, Han YP, Bai F, Siegfried CJ and Beebe DC (2015). Impact of Corneal Endothelial Dysfunction on Intraocular Oxygen Levels in Human Eyes. *Invest Ophthalmol Vis Sci* 56(11), 6483-8
- Siegfried CJ, Shui YB, Bai F and Beebe DC (2015). Central corneal thickness correlates with oxygen levels in the human anterior chamber angle. *Am J Ophthalmol* 159(3), 457-62
- Lim JK, Nguyen CT, He Z, Vingrys AJ and Bui BV (2014). The effect of ageing on ocular blood flow, oxygen tension and retinal function during and after intraocular pressure elevation. *PLoS One* 9(5), 98393
- Filas BA, Shui YB and Beebe DC (2013). Computational model for oxygen transport and consumption in human vitreous. *Invest Ophthalmol Vis Sci* 54(10), 6549-59
- Muir ER, Zhang Y, San Emeterio Nateras O, Peng Q and Duong TQ (2013). Human vitreous: MR imaging of oxygen partial pressure. *Radiology* 266(3), 905-11
- Siegfried CJ, Shui YB, Holekamp NM, Bai F and Beebe DC (2011). Racial differences in ocular oxidative metabolism: implications for ocular disease. *Arch Ophthalmol* 129, 849-54
- Park YH, Shui YB, Beebe DC (2011). Comparison of two probe designs for determining intraocular oxygen distribution. *Brit J Ophthalmol* 95(1), 118-22
- Lange CA, Stavrakas P, Luhmann UF, de Silva DJ, Ali RR, Gregor ZJ and Bainbridge JW (2011) Intraocular oxygen distribution in advanced proliferative diabetic retinopathy. *Am J Ophthalmol* 152(3), 406-412
- Abdallah W, Ameri H, Barron E, Chader GJ, Greenbaum E, Hinton DR and Humayun MS (2010). Vitreal oxygenation in retinal ischemia reperfusion. *Invest Ophthalmol Vis Sci* 52(2), 1035-42
- Siegfried CJ, Shui Y-B, Holekamp NM, Bai F and Beebe DC (2010). Oxygen distribution in the human eye: relevance to the etiology of open-angle glaucoma after vitrectomy. *Investigative Ophthalmology & Visual Science* 51, 5731-5738
- 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). Microplasm-in 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
- In Vitro Applications**
- Gehring M, Bohndiek SE and Brunker J (2019). Development of a blood oxygenation phantom for photoacoustic tomography combined with online pO₂ detection and flow spectrometry. *J Biomed Opt* 24(12), 1-11
- Baark F, Shaughnessy F, Pell VR, Clark JE, Eykyn TR, Blower P and Southworth R (2019). Tissue acidosis does not mediate the hypoxia selectivity of [64Cu][Cu(ATSM)] in the isolated perfused rat heart. *Sci Rep* 9(1), 499
- Andreoni A, Penjweini R, Roarke B, Strub M-P; Sackett DL and Jay R. Knutson (2019). Genetically encoded FRET probes for direct mapping and quantification of intracellular oxygenation level via fluorescence lifetime imaging. *Proceedings Volume 10882, Multiphoton Microscopy in the Biomedical Sciences XIX*; 108820O (2019) <https://doi.org/10.1117/12.2510646>
- Penjweini R, Andreoni A, Rosales T, Kim J, Brenner MD, Sackett DL, Chung JH and Knutson JR (2018). Intracellular oxygen mapping using a myoglobin-mCherry probe with fluorescence lifetime imaging. *J. Biomed. Opt.* 23(10), 107001
- Busco G; Fasani F; Dozias S; Ridou L, Douat C, Pouvesle J-M and Grillon C (2018). Changes in oxygen level upon cold plasma treatments: consequences for RONS production. *IEEE Transactions on Radiation and Plasma Medical Sciences* 2(2), 147-152
- Tiwari A, Wong CS, Nekkanti LP, Deane JA, McDonald C, Li J, Pham Y, Sutherland AE, Jenkin G and Kirkland MA (2018). Controlling the Effective Oxygen Tension Experienced by Cells Using a Dynamic Culture Technique for Hematopoietic Ex Vivo Expansion. *Curr Protoc Stem Cell Biol* 44, 2A.11.1-2A.11.13
- Wijesekera D, Willis SA, Gupta A, Torres AM, Zheng G and Price WS (2018). NMR diffusion and relaxation studies of 2-nitroimidazole and albumin interactions. *Spectrochim Acta A Mol Biomol Spectrosc* 193, 318-323
- Khalullina-Skultety H, Zi Chao N and Harris WA (2017). Induction of Hypoxia in Living Frog and Zebrafish Embryos. *J Vis Exp*. 2017 Jun 26;(124). doi: 10.3791/55710
- Foskolou IP, Jorgensen C, Leszczynska KB, Olcina MM, Tarhonskaya H, Haisma B, D'Angiolella V, Myers WK, Domene C, Flashman E and Hammond EM (2017). Ribonucleotide Reductase Requires Subunit Switching in Hypoxia to Maintain DNA Replication. *Mol Cell* 66(2), 206-220
- Minoves M, Morand J, Perriot F, Chatard M, Gonthier B, Lemarié E, Menut JB, Polak J, Pepin JL, Godin-Ribuot D and Briançon-Marjollet A (2017). An innovative intermittent hypoxia model in cell cultures allowing fast PO₂ oscillations with minimal gas consumption. *Am J Physiol Cell Physiol* 313(4), C460-C468
- Lee PS, Eckert H, Hess R, Gelinsky M, Rancourt D, Krawetz R, Cuniberti G and Scharnweber D (2017). Developing a Customized Perfusion Bioreactor Prototype with Controlled Positional Variability in Oxygen Partial Pressure for Bone and Cartilage Tissue Engineering. *Tissue Eng Part C Methods* 23(5), 286-297
- Joniová J, Gerelli E, Zellweger Mand Wagnières G (2017). Optimization and characterization of the endogenous production of protoporphyrin IX in a yeast model. *J Biomed Opt* 21(12), 125008
- Tiwari A, Wong CS, Nekkanti LP, Deane JA, McDonald C, Jenkin G and Kirkland MA (2016). Impact of Oxygen Levels on Human Hematopoietic Stem and Progenitor Cell Expansion. *Stem Cells Dev*. 25(20), 1604-1613
- Baird AM, Gray SG, Richard DJ and O'Byrne KJ (2016). Promotion of a cancer-like phenotype, through chronic exposure to inflammatory cytokines and hypoxia in a bronchial epithelial cell line model. *Sci Rep* 6, 18907
- You JO, Rafat M, Almeda D, Maldonado N, Guo P, Nabzdyk CS, Chun M, LoGerfo FW, Hutchinson JW, Pradhan-Nabzdyk LK and Auguste DT (2015). pH-responsive scaffolds generate a pro-healing response. *Biomaterials* 57, 22-32
- Yaghini E, Pirker KF, Kay CW, Seifalian AM and MacRobert AJ (2014). Quantification of Reactive Oxygen Species Generation by Photoexcitation of PEGylated Quantum Dots. *Small* 10(24), 5106-15
- Giuntini F, Chauhan VM, Aylott JW, Rosser GA, Athanasiadis A, Beeby A, MacRobert AJ, Brown RA, and Boyle RW (2014). Conjugatable water-soluble Pt(II) and Pd(II) porphyrin complexes: novel nano- and molecular probes for optical oxygen tension measurement in tissue engineering. *Photochem Photobiol Sci* 13(7), 1039-51
- Grimes DR, Kelly C, Bloch K and Partridge M (2014). A method for estimating the oxygen consumption rate in multicellular tumour spheroids. *J R Soc Interface* 11(92), 20131124
- Handley MG, Medina RA, Mariotti E, Kenny DJ, Shaw KP, Yan R, Eykyn TR, Blower PJ and Southworth R (2014). Cardiac hypoxia imaging: second-generation analogues of 64Cu-ATSM. *J Nucl Med* 55(3), 488-94
- Taylor CT, Kent BD, Crinion SJ, McNicholas WT and Ryan S (2014). Human adipocytes are highly sensitive to intermittent hypoxia induced NF- κ B activity and subsequent inflammatory gene expression. *Biochem Biophys Res Commun* 447(4), 660-5
- Campbell EL, Bruyninckx WJ, Kelly CJ, Glover LE, McNamee EN, Bowers BE, Bayless AJ, Scully M, Saeedi BJ, Golden-Mason L, Ehrentrauf SF, Curtis VF, Burgess A, Garvey JF, Sorensen A, Nemenoff R, Jedlicka P, Taylor CT, Kominsky DJ and Colgan SP (2014). Transmigrating neutrophils shape the mucosal microenvironment through localized oxygen depletion to influence resolution of inflammation. *Immunity* 40(1), 66-77
- Liu XB, Cheng Q, Geng W, Ling CC, Liu Y, Ng KT, Yam JW, Guan XY, Lo CM and Man K (2014). Enhancement of cisplatin-based TACE by a hemoglobin-based oxygen carrier in an orthotopic rat HCC model. *Artif Cells Nanomed Biotechnol* 42(4), 229-36
- Handley MG, Medina RA, Paul RL, Blower PJ and Southworth R (2013). Demonstration of the retention of 64Cu-ATSM in cardiac myocytes using a novel incubation chamber for screening hypoxia-dependent radiotracers. *Nucl Med Commun* 34(10), 1015-22
- Nyga A, Loizidou M, Emberton M and Cheema U (2013). A novel tissue engineered three-dimensional *in vitro* colorectal cancer model. *Acta Biomater* 9(8), 7917-26
- Cheema U, Rong Z, Kirresh O, MacRobert AJ, Vadgama P and Brown RA (2012). Oxygen diffusion through collagen scaffolds at defined densities: implications for cell survival in tissue models. *J Tissue Eng Regen Med* 6(1), 77-84
- Meng F, Evans JW, Bhupathi D, Banica M, Lan L, Lorente G, Duan JX, Cai X, Mowday AM, Guise CP, Maroz A, Anderson RF, Patterson AV, Stachelek GC, Glazer PM, Matteucci MD and Hart CP (2012). Molecular and cellular pharmacology of the hypoxia-activated prodrug TH-302. *Mol Cancer Ther* 11(3), 740-51
- Hsieh CH, Wu CP, Lee HT, Liang JA, Yu CY and Lin YJ (2012). NADPH oxidase subunit 4 mediates cycling hypoxia-promoted radiation resistance in glioblastoma multiforme. *Free Radic Biol Med* 53(4), 649-58
- Pires IM, Olcina MM, Anbalagan S, Pollard JR, Reaper PM, Charlton PA, McKenna WG and Hammond EM (2012). Targeting radiation-resistant hypoxic tumour cells through ATR inhibition. *Br J Cancer* 107(2), 291-9
- Mutoh T, Sanosaka T, Ito K and Nakashima K (2012). Oxygen Levels Epigenetically Regulate Fate Switching of Neural Precursor Cells via Hypoxia-Inducible Factor 1 α -Notch Signal Interaction in the Developing Brain. *Stem Cells* 30(3), 561-9
- Tamama K, Kawasaka H, Kerpedjewa SS, Guan J, Ganju RK and Sen CK (2011). Differential roles of hypoxia inducible factor subunits in multipotential stromal cells under hypoxic condition. *J Cell Biochem* 112(3), 804-17
- Deschepper M, Oudina K, David B, Myrtil V, Collet C, Bensidhoum M, Logeart-Avramoglou D and Petite H (2011). Survival and function of mesenchymal stem cells (MSCs) depend on glucose to overcome exposure to long-term, severe and continuous hypoxia. *J Cell Mol Med* 15(7), 1505-14
- Streeter I and Cheema U (2011). Oxygen consumption rate of cells in 3D culture: The use of experiment and simulation to measure kinetic parameters and optimise culture conditions. *Analyst* 136, 4013
- Staples KJ, Sotoodehnejadnematlahi F, Pearson H, Frankenberger M, Francescut L, Ziegler-Heitbrock L and Burke B. (2010). Monocyte-derived macrophages matured under prolonged hypoxia transcriptionally up-regulate HIF-1 α mRNA. *Immunobiology*. 216(7), 832-9
- Forde JC, Perry AS, Brennan K, Martin LM, Lawler MP, Lynch TH, Hollywood D and Marignol L (2010). Docetaxel maintains its cytotoxic activity under hypoxic conditions in prostate cancer cells. *Urol Oncol*. 30(6), 912-9
- Agbor TA, Cheong A, Comerford KM, Scholz CC, Bruning U, Clarke A, Cummins EP, Cagney G and Taylor CT (2010). Small ubiquitin-related modifier (SUMO)-1 protein modification promotes glycolysis in hypoxia. *J Biol Chem* 286(6), 4718-26
- Robinson MA, Tuttle SW, Otto CM and Koch CJ (2010). pO₂-dependent NO production determines OPPC activity in macrophages. *Free Radic Biol Med* 48(2), 189-95
- Hicks KO, Siim BG, Jaiswal JK, Pruijn FB, Fraser AM, Patel R, Hogg A, Liyanage HD, Dorie MJ, Brown JM, Denny WA, Hay MP and Wilson WR (2010). Pharmacokinetic/pharmacodynamic modeling identifies SN30000 and SN29751 as tirapazamine analogues with improved tissue penetration and hypoxic cell killing in tumors. *Clinical Cancer Research*. 16(20), 4946-57
- Cheema U, Alekseeva T, Abou-Neel EA and Brown RA (2010). Switching off angiogenic signalling: creating channelled constructs for adequate oxygen delivery in tissue engineered constructs. *European Cells and Materials* 20, 274-281
- 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). β 2- but not β 1-adrenoceptor activation modulates intracellular oxygen availability. *J Physiol*. 588(16), 2987-2988
- 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, Cocchiaglia S, Zhdanov AV, Tambuwala MM, Cummins EP, Monfared M, Agbor TA, Garvey JF, Papkovsky DB, Taylor CT and Allan BB (2009). PGC-1 α is coupled to HIF-1 α pathway 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, Randot 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*. 23(3), 906-15
- 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* 4(10), 855-860
- Yu G, Peng T, Feng Q and Tymk L (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 1 γ activity in hypoxia through increased interaction with NIPP1: implications for cellular metabolism. *J Cell Physiol* 209, 211-18.
- Wang DW, Fermor 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, Galliano 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 1 α -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, Bieri 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, Ockleford CD and Galinanes M (2000). Characterization of an in vitro model for the study of the short and prolonged effects of myocardial ischemia and reperfusion in man. *Clinical Science* 99, 443-453

Methodology / Validation

- Valable S, Corroyer-Dulmont A, Chakhoyan A, Durand L, Toutain J, Divoux D, Barré L, MacKenzie ET, Petit E, Bernaudin M, Touzani O and Barbier EL (2016). Imaging of brain oxygenation with magnetic resonance imaging: A validation with positron emission tomography in the healthy and tumoural brain. *J Cereb Blood Flow Metab* 37(7), 2584-2597
- Hou H, Khan N, Larivière J, Hodge S, Chen EY, Jarvis LA, Eastman A, Williams BB, Kuppusamy P and Swartz HM (2014). Skeletal muscle and glioma oxygenation by carbogen inhalation in rats: a longitudinal study by EPR oximetry using single-probe implantable oxygen sensors. *Adv Exp Med Biol* 812, 97-103
- Laurens E, Yeoh SD, Rigopoulos A, Cao D, Cartwright GA, O'Keefe GJ, Tochon-Danguy HJ, White JM, Scott AM and Ackermann U (2014). Radiolabelling and evaluation of a novel sulfoxide as a PET imaging agent for tumor hypoxia. *Nucl Med Biol* 41(5), 419-25
- Ackermann U, Sigmund D, Yeoh SD, Rigopoulos A, O'Keefe G, Cartwright G, White J, Scott AM and Tochon-Danguy HJ (2011). Synthesis of 2-[[4-[18F]fluorobenzoyloxy)methyl]-1,4-naphthalenedione from 2-hydroxymethyl 1,4-naphthoquinone and 4-[18F]fluorobenzoic acid using dicyclohexyl carbodiimide. *Journal of Labelled Compounds and Radiopharmaceuticals* 54(13), 788-794
- Hsu W-L, Wu TH, Hsu S-M, Chen C-L, Lee JJS and Huang Y-H (2011). An integrated multimodality image-guided robot system for small-animal imaging research. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment* 652(1), 763-766
- Just N, Koh DM, D'Arcy J, Collins DJ and Leach MO (2011). Assessment of the effect of haematocrit-dependent arterial input functions on the accuracy of pharmacokinetic parameters in dynamic contrast-enhanced MRI. *NMR Biomed* 24(7), 902-15
- Bejot R, Kersemans V, Kelly C, Carroll L, King RC, Gouverneur V, Elizarov AM, Ball C, Zhang J, Miraghaie R, Kolb HC, Smart S and Hill S (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), 565-75. [Erratum appears in *Nucl Med Biol*. 37(8), 1013]
- 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 anaesthetized 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