

CURRICULUM VITAE

JEFFREY R. IDLE

Internationally renowned researcher in metabolism and metabolomics with a strong background in biochemistry and analytical chemistry. Discoverer of the first genetic polymorphism in cytochrome P450 with a significant impact on drug and environmental chemical metabolism. Metabolites form the bond between the output from the genome and the input from the exposome. Reported the first cancer susceptibility gene for lung and liver cancers in 1980, launching the field of molecular epidemiology. For the past two decades, employed mass spectrometry-based metabolomics to elucidate the role of metabolism in cancer and preneoplastic disease, working closely with collaborators in CCR, NCI and clinical colleagues in the US and Europe.

Current position, until August 31, 2022

Endowed Professor & Director
Arthur G. Zupko Institute for Systems Pharmacology and Pharmacogenomics
Arnold and Marie Schwartz College of Pharmacy & Health Sciences
Long Island University
75 Dekalb Ave, Brooklyn, NY 11201

Residence: USA Permanent residence: applied for and anticipated

Telephone: +1 (516) 641-6219 (cell); +1 (718) 488-1322

Email: jeffidle@gmail.com, jeffrey.idle@dbmr.unibe.ch

1. Degrees and accreditations

BSc in Applied Chemistry (1972); **BSc (First Class Hons)** in Medicinal Chemistry (1973) and valedictorian (SKF Prize, Best Performance by a Science Student), Hatfield Polytechnic (now University of Hertfordshire); **PhD** in Biochemistry with Professor R Tecwyn Williams FRS, St Mary's Hospital Medical School, University of London (1976); **CChem FRSC** (1987), **CBiol FRSB** (1999) **EurChem** (2000), **EurProBiol** (2000), **CSci** (2004), **FBPhS** (2005), **DSc** (Honoris causa, University of Hertfordshire) (2021).

2. Appointments

- 1971 Research Technician, Ciba Geigy Limited, UK
1972 Research Chemist, Wander Limited, UK
1976 Lecturer in Biochemistry, St Mary's Hospital Medical School (SMHMS), London, UK
1976-1983 Lecturer in Biochemical Pharmacology, SMHMS
1982 Visiting Scientist, Laboratory of Human Carcinogenesis (Chief, Dr. Curtis C. Harris)
1983-1988 Wellcome Trust Senior Lecturer, SMHMS
1985-1988 Reader in Pharmacogenetics, University of London, UK
1988-1995 Professor of Pharmacogenetics, Newcastle University, UK
1992-1995 Chairman, Department of Pharmacological Sciences, Newcastle University
1990-1991 Deputy-Head, School of Clinical Medical Sciences, Newcastle University
1991-1995 Head, School of Clinical Medical Sciences, Newcastle University
1982 Visiting Scientist with Curtis C Harris, MD, Laboratory of Human Carcinogenesis, NCI, NIH
1989 WHO Special Advisor and WHO Committee Chairman "Genetic predisposition to toxic effects of chemicals"
1986-1991 Member, Cancer Research Advancement Board, Irish Cancer Society
1995-1996 Member, Cancer Research Advancement Board, Irish Cancer Society
1991-1998 Founding Editor and Editor-in-Chief of *Pharmacogenetics*
1992-1995 Founder and Chief Executive, GenoType Ltd. (campus biotechnology company)
1995-2004 Professor in Medicine and Molecular Biology, Norwegian University of Science and Technology, Trondheim, Norway
1996-1998 Consultant in Medical Genetics and Founding Head of Department, Regional Teaching Hospital, Trondheim, Norway
2004-2010 Visiting Professor of Pharmacology at Institute of Pharmacology, First Faculty of Medicine, Charles University, Prague, Czech Republic
2003-2016 Visiting Professor at the University of Bern, Switzerland
2002- Consultant in metabolism and scientific contractor, Laboratory of Metabolism [Chief, Dr. Frank J. Gonzalez], Center for Cancer Research, National Cancer Institute, National Institutes of Health, Bethesda MD, USA
2018- Director and Endowed Professor, Arthur G. Zupko Institute for Systems Pharmacology and Pharmacogenomics, Arnold & Marie Schwartz College of Pharmacy and Health Sciences, Long Island University, Brooklyn, NY 11201

3. Society memberships

- Royal Society of Chemistry [Fellow]
Royal Society of Biology [Fellow]
British Pharmacological Society [Honorary Fellow]
Hungarian Society for Experimental and Clinical Pharmacology [Honorary Life Member]
American Society for Pharmacology and Experimental Therapeutics (ASPET)
American Society for Biochemistry and Molecular Biology (ASBMB)
American Chemical Society (ACS)

4. Journal editorial boards and reviewing

Biochemical Pharmacology (2022 IF = 6.1) – Editorial Board member (2010-present)

In addition, currently *ad hoc* reviewer for *ACS Books, Am J Primatol, Animal Biol, Annals of Medicine, BBA Clin, Carcinogenesis, Clin Cancer Res, Curr Pharmacol Rep, Drug Metab Dispos, Drug Metab Rev, DNA Repair, Hepatology, Internat J Radiat Biol, J Chromatogr B, J Hepatol, J Pharm Pharmacol, J Proteome Res, Mol Cancer Res, PLoS ONE, Radiat Environ Biophys, and Radiat Res.*

Evaluator for Frontier Science 2019, National Science Foundation of Mexico (CONACYT)

5. Lectures and talks (2018-)

1. January 18, 2018 – Faculty Retreat, LIU Pharmacy, Brooklyn: “Introduction to systems pharmacology and pharmacogenomics”.
2. February 8, 2018 – St. Jude’s Children’s Research Hospital, Memphis TN: “The Pharmacogenomics Super Bowl – Genotype vs. Phenotype”.
3. March 6, 2018 – The Jewish Pharmaceutical Society, LIU Pharmacy, Brooklyn: “Individuality in drug response”.
4. March 26, 2018 – Pfizer Global Headquarters, New York: “Genotype or phenotype – which is important for precision medicine?”
5. June 11, 2018 – Precision Medicine Leaders’ Summit 2018, Jersey City, NJ: “Why metabolites?”
6. November 7, 2018 -- Traditional Chinese Medicine (TCM) Development and its Global Impact Symposium. United Nations Headquarters, New York, NY: Moderator, Panel 1.
7. June 4, 2019 – College of Pharmacy, University of Minnesota, Minneapolis, MN: “Genotype or phenotype – which is important for precision medicine?”
8. July 26, 2019 – NIPTE Faculty Meeting, Rutgers University, Piscataway, NJ: “The Translational Biomarkers Focus Group.”
9. October 3, 2019 – NIPTE Annual Research Conference, Crystal City, VA: “Emerging ideas, latest innovations, and the new NIPTE focus group lead initiative.”
10. April 27, 2022 – AAPS-NERDG, 24th Annual Conference, Windsor CT: “Why metabolites?”

6. Principal research achievements

My initial training was in chemistry and biochemistry, studying drug metabolism under Professor R. Tecwyn Williams, 1976 nominee for the Nobel Prize in Physiology or Medicine, together with the eminent biochemical pharmacologist Robert L. Smith. I drew on this background to develop a multidisciplinary program in drug metabolism, pharmacokinetics and pharmacogenetics, with translational impact upon a broad array of clinical specialities. My career has taken me on a journey from pure science through pharmacology, human genetics, medical genetics, molecular biology and currently to mass spectrometry-based metabolomics. It is in this field where I especially benefit from

my early training. My career has been highly focused on translational research. Studies in animals, genetically-modified mice, phenotyped volunteer panels and human populations have all generated findings that have been translated into patient studies.

Discovery of the CYP2D6 genetic polymorphism. Before we reported the first genetic polymorphism for the cytochrome P450 superfamily, the debrisoquine 4-hydroxylase (CYP2D6) polymorphism (Mahgoub *et al.*, 1977), interpatient variability in drug handling due to inherited factors was relegated to a single Table in most pharmacology textbooks. Interpatient variability was largely ascribed to environmental and lifestyle factors, such as tobacco and alcohol use, pollutants and drug-drug interactions, mainly due to enzyme induction or inhibition. At this time, cytochromes P450 were described as “multifunctional” and therefore there was no understanding that the absence of a single hepatic P450 could lead to the virtually complete lack of *in vivo* metabolism of a number of drugs. This polymorphism and the others which then followed account for the larger part of plasma level variation for commonly prescribed drugs, adverse drug reactions and, sometimes, patient deaths. Almost one-in-ten persons in several populations lacks CYP2D6 metabolic activity. This finding is significant because it altered the way in which drugs are registered and regulated by the FDA and other international regulatory authorities. In addition, we also reported that cigarette smokers with lung cancer had a concentration of the phenotypically fastest metabolizers of debrisoquine (Ayesh *et al.*, 1984; Caporaso *et al.*, 1989a; Caporaso *et al.*, 1989b), consistent with the concept of metabolic activation of tobacco carcinogens. The discovery of the CYP2D6 polymorphism led to the launch of biochemical and molecular epidemiology field. Perhaps most significantly, this discovery helped to revolutionize the practice of one drug fits all. Together with my colleague Robert L. Smith, I proposed in 1995 a new pattern of healthcare delivery based upon pharmacogenetic phenotypes that would be carried by each patient on a smartcard to be read at the physician’s office (Idle and Smith, 1995). This was the cornerstone of what is now known as precision medicine.

Radiation metabolomics. This phrase was unknown prior to its deployment in a 2004 NIH U19 grant application to fund a Center for High-Throughput Minimally-Invasive Radiation Biodosimetry at Columbia with branches at Harvard, Arizona State, and Bern universities, which was awarded over 2005-2015 for in excess of \$42 million. The Bern component, in collaboration with the Laboratory of Metabolism, CCR, NCI, NIH (Chief, Frank J. Gonzalez) focused on the discovery of metabolomic biomarkers for ionizing radiation exposure, leading to the core of radiation metabolomics papers (Patterson *et al.*, 2008; Tyburski *et al.*, 2008; Lanz *et al.*, 2009; Tyburski *et al.*, 2009; Patterson *et al.*, 2010; Johnson *et al.*, 2011; Johnson *et al.*, 2012; Manna *et al.*, 2013; Wang *et al.*, 2016; Golla *et al.*, 2017). We are currently collaborating with an expert group in the UK to develop hand-held devices for the detection of radiation metabolomic biomarkers.

Clinical cancer metabolomics. We have been among the first to report metabolomic and lipidomic biomarkers for several cancers, including hepatocellular carcinoma (Patterson *et al.*, 2011; Beyoglu *et al.*, 2013), lung cancer (Mathe *et al.*, 2014), and acute myeloid leukemia (AML) (Pabst *et al.*, 2017). In all cases, the findings are leading to new insights into disease pathogenesis. For example, the finding that urinary creatine riboside, a hitherto unreported endogenous metabolite, was elevated in non-small cell lung cancer patients ($P < 0.00001$), associated with a worse prognosis (HR=1.81; $P = 0.0002$), and enriched in tumor tissue compared with adjacent nontumour tissue ($P < 0.03$) has led to a program of research investigating the role of creatine riboside in lung cancer etiology (recently published as Parker AL *et al. J Clin Invest* 2022; 132(14):e157410). In addition, plasma arachidonic acid and its fatty acid precursors were elevated in AML patients, particularly those with high

peripheral or bone marrow blasts and an unfavorable prognostic risk. Conversely, plasma PGF2 α was predominantly elevated in AML patients with low peripheral or bone marrow blasts and with a favorable prognostic risk. These and other findings in this report (Pabst *et al.*, 2017) are leading to novel insights into the pathobiology of AML.

In summary, my research experience over four decades can best be described as multidisciplinary translational research in the field of cancer and preneoplastic disease. There has been a significant focus on cancer etiology, specifically, *CYP2D6* as the first susceptibility gene for lung cancer (Ayesh *et al.*, 1984; Caporaso *et al.*, 1989a,b; Law *et al.*, 1989), *GSTM1* in bladder cancer (Daly *et al.*, 1993) and *CYP2D6* in breast cancer (Pontin *et al.*, 1990). Moreover, we have applied metabolomics to the discovery of cancer biomarkers and improved insights into cancer mechanisms. Examples include hepatocellular carcinoma (Patterson *et al.*, 2011; Beyoğlu *et al.*, 2013), lung cancer (Mathé *et al.*, 2014), acute myeloid leukemia (Pabst *et al.*, 2017), lipidome reprogramming in relation to the murine tumor suppressor gene *Hint1* (Beyoğlu *et al.*, 2014), chronic hepatitis C (Semmo *et al.*, 2015) and alcoholic liver disease (Manna *et al.*, 2010, 2011). These and other aspects of cancer mechanisms have been investigated and reported together with Dr. Frank J. Gonzalez, Chief, Laboratory of Metabolism, CCR, NCI, NIH, in my role as a consultant and contactor at NCI since 2002.

7. Grant funding history

a. St. Mary's Hospital Medical School, UK

1981-1988 UK Cancer Research Campaign (as PI)	\$260,000 [\$585,000 today]
1983-1993 Wellcome Trust Senior Lectureship (as PI)	\$610,000 [\$1.2 million today]
1978-1988 Various PhD studentships (as PI)	\$345,000 [\$836,000 today]

b. Newcastle University, UK

1988-1994 Bayer UK Limited (as PI)	\$245,000 [\$433,000 today]
1988-1994 BAT Ltd. (as PI)	\$570,000 [\$1 million today]
1991-1995 NECCR (as co-PI)	\$120,000 [\$200,000 today]
1991-1995 NECR (as PI)	\$150,000 [\$250,000 today]
1991-1994 MRC (as co-PI)	\$160,000 [\$267,000 today]

c. Norwegian University of Science and Technology, Trondheim

1996 Research Council of Norway (as PI)	\$307,000 [\$473,000 today]
1997 Research Council of Canada (as PI)	\$100,000 [\$149,000 today]
1997 The Norwegian Ministry of Health (as PI)	\$2.7 million [\$4.1 million today]

d. Charles University Prague

2005-2015 NIAID/NIH U19 AI067773 (as co-PI)	\$42.3 million [\$46.4 million today]
---	---------------------------------------

e. University of Bern

2005-2015 U19 grant transferred from Prague to Bern.	
2013-2016 industrial funding (as PI)	\$609,000 [\$618,000 today]
2016 Stiftung für Leberkrankheiten (as PI)	\$81,000 [\$81,000 today]

f. Long Island University Brooklyn

2020-2022 California Table Grape Commission	\$89,000
2022 (pending) Ambys Medicines	\$278,769

I therefore have a record of competitive grant funding in several different countries.

8. Former postgraduate students

Afaf Mahgoub, MD	(EG)	London	1977 King Saud University, Riyadh, KSA
Timothy P. Sloan	(UK)	London	1980 Lecturer in Pharmacology (deceased 1983)
James C. Ritchie	(UK)	London	1980 Senior Assessor, European Medicines Agency and Director, GlaxoSmithKline plc, UK
Rashmi R. Shah, MB, BS	(UK)	London	1982 Senior Medical Advisor, EMA
Barbara A. Osikowska	(PO)	London	1982 Pharmacy owner, Düsseldorf, Germany
Sabah G. Al-Dabbagh	(IQ)	London	1983 Dean of Pharmacy, Mosul, Iraq
Hikmat H. Nadir	(IQ)	London	1984 Professor, Mosul University, Iraq
Hakam F. Al-Hadidi, MD	(JO)	London	1987 President, Hashemite University of Jordan and Professor of Pharmacology, Jordan University of Science and Technology
Makram Al-Waiz, MD	(IQ)	London	1988 Specialist Dermatologist, Almadar Medical Center, UAE
Riad Ayeshe, MD	(SY)	London	1988 Director, Victoria Medical Centre, UK
Susan M. Jones	(UK)	London	1988 ?
Martin Armstrong	(UK)	Newcastle	1995 ?
Constance C. Höfer	(DE)	Newcastle	1996 Global Program Head, Sandoz, Germany
Cathrine Broberg Vågbo	(NO)	Trondheim	1997 Senior Researcher, NTNU, Trondheim
Monica Holthe	(NO)	Trondheim	1997 Research Administrator, NMBU, Oslo
Louise Grevle	(NO)	Trondheim	1997 Researcher, University of Bergen
Anders Brunsvik	(NO)	Trondheim	1997 Research Scientist, SINTEF, Trondheim
Janice Ellis	(UK)	Newcastle	1997 Professor, School of Dental Sciences, Newcastle
J Mark Thomason	(UK)	Newcastle	1998 Professor, School of Dental Sciences, Newcastle
Stefanie Lerch	(CH)	Bern	2005 Co-Director Neuroclinical Trial Unit, Bern
Catherine Nicolo	(CH)	Bern	2010 ?

9. Former Postdoctoral Fellows

Sunday I. Ette, PhD	(NG)	London	1977 Professor, University College Hospital, Ibadan
Ben Andoh, PhD	(GH)	London	1978 ? Ghana
Michael A. Fafunso, PhD	(NG)	London	1978 Professor, University of Ibadan, Nigeria
Samira Islam, PhD	(SA)	London	1978-81 Professor and Dean, Jeddah, KSA
Charles Mbanefo, MD	(NG)	London	1979 Professor, Case Western Reserve University
James C. Ritchie, PhD	(UK)	London	1980-84 <u>see above</u>
Stephen C. Mitchell, PhD	(UK)	London	1981-84 Reader, Imperial College London
Nebuo Nemoto	(JP)	London	1982 Professor, Toyama University, Japan
Bernhard Dick, PhD	(CH)	London	1982 Pharmacy owner and researcher, Inselspital, Bern

Balthazar Schmid, PhD	(CH)	London	1982-84 Pharmacy owner, Luzern, Switzerland
Nicholas S. Oates, PhD	(UK)	London	1983-85 ? London
Rashmi R. Shah, MD	(UK)	London	1983-85 <u>see above</u>
Barbara A. Brooks, PhD	(US)	London	1987-88 Toxicologist, Hawaii Department of Health
Colin T. Dolphin, PhD	(UK)	London	1988 Senior Lecturer, Kings College, London
Ann K. Daly, PhD	(IR)	Newcastle	1989-95 Professor of Pharmacogenetics, Newcastle; President ISSX
Suzanne Cholerton, PhD	(UK)	London	1988
		Newcastle	1989-95 Professor and Pro-Vice-Chancellor, Newcastle
Alan Boddy, PhD	(UK)	Newcastle	1990-95 Dean of Research/Institute Director, Adelaide
Dianne Ford, PhD	(UK)	Newcastle	1991-94 Professor and Pro-Vice-Chancellor, Northumbria
Wendy Gregory, MD	(UK)	Newcastle	1992-94 Consultant Gastroenterologist, Northumbria
Semra Şardaş, PhD	(TR)	London	1986
		Newcastle	1991 Professor, Istinye University, Istanbul, Turkey
Ádám Vas, MD, PhD	(HU)	Newcastle	1991 Professor and Medical Director, Gedeon Richter (deceased)
Hakam F. Al-Hadidi, MD	(JO)	Newcastle	1995
		Trondheim	1997-98 <u>see above</u>
Constance C. Höfer, PhD	(DE)	Trondheim	1995-97 <u>see above</u>
I. Cüneyt Güzey, MD	(TR)	Newcastle	1995
		Trondheim	1995-98 Associate Professor, NTNU, Trondheim
Chantal Guillemette, PhD	(CA)	Trondheim	1997-98 Professor and Director, Pharmacogenomics, Québec
Aiming Yu, PhD	(CN)	Bethesda	2002-05 Professor, UC Davis
Xiaochao Ma, PhD	(CN)	Bethesda	2004-09 Associate Professor, University of Pittsburgh
Chi Chen, PhD	(CN)	Bethesda	2004-08 Professor, University of Minnesota
Christian Lanz, PhD	(CH)	Bern	2005-10 Pharmacy owner, Langenthal, Switzerland
Yueying Zhen, PhD	(CN)	Bethesda	2005-07 Group Leader, Tianjin Hemay Pharmaceuticals, PRC
Sarbani Giri, PhD	(IN)	Bethesda	2005-06 Professor and Chair, Assam University, India
John B. Tyburski, PhD	(US)	Bethesda	2006-10 Founder, Integral Foundations, LLC
Andrew D. Patterson, PhD	(US)	Bethesda	2007-10 Professor, Penn State University
Caroline H. Johnson, PhD	(UK)	Bethesda	2008-11 Assistant Professor, Yale University
Diren Beyoğlu, PhD	(TR)	Bern	2011-16 Associate Professor, Long Island University
Min Wang, PhD	(CN)	Bern	2015-16 Associate Professor, Lanzhou University, PRC

10. Principal administrative accomplishments

- (i) Managed the Department of Pharmacological Sciences and the School of Clinical Medical Sciences at the University of Newcastle upon Tyne, UK. Managed the Department of Medical Genetics in the Regional Teaching Hospital, Trondheim, Norway.
- (ii) Establishment *ab initio* of the Pharmacogenetics Research Unit, University of Newcastle, with a high international visibility for excellence and innovation in pharmacogenetic research (1988-1995). All four post-docs have become full professors. One of the two junior academics

is now Pro-Vice-Chancellor for Learning and Teaching, the other, a professor of pharmacogenetics. This shows clear evidence of mentoring junior staff.

- (iii) Establishment *ab initio* of the Department of Medical Genetics (*Medisinsk Genetikk avdelingen*), Regional Teaching Hospital, Trondheim, Norway which ran local and national clinical laboratory services, including the first national routine service worldwide for clinical pharmacogenetics (1996-1998). The department also housed a SCIEX API 150 triple quadrupole mass spectrometer, the first TQMS in Norway.
- (iv) Establishment, in collaboration with Dr. Frank J. Gonzalez, an internationally visible research group in metabolomics at the Laboratory of Metabolism, Center for Cancer Research, National Cancer Institute, Bethesda (2004-). The group began with a single UPLC-ESI-QTOFMS funded by an award from the NCI director. We were successful in raising funds to purchase several more MS platforms, which now total nine. In this period, funding for radiation metabolomics was awarded to the lab from NIAID/NIH.
- (v) The establishment in 1991 of the high impact pharmacology/toxicology/genetics journal *Pharmacogenetics*, later renamed *Pharmacogenetics and Genomics*, currently in its 31st year and volume.
- (vi) The launch in 1992 of the campus-based biotechnology limited company GenoType Ltd., which rapidly became the world leader in the provision of genetic services to both the pharmaceutical industry in Europe, the USA and Japan, and US governmental research institutions. GenoType Ltd. was able to both raise venture capital and to develop patentable intellectual property.
- (vii) Development and management of a lab for metabolomics in hepatology at the University of Bern, Switzerland and Inselspital Regional Teaching Hospital, Bern.
- (viii) Complete rebuilding, restructuring and equipping of the new Arthur G. Zupko Institute for Systems Pharmacology and Pharmacogenomics, Arnold & Marie Schwartz College of Pharmacy and Health Sciences, Long Island University, Brooklyn, New York.

11. Letters of recommendation may be obtained from:

1. Dr. Frank J. Gonzalez, Senior Investigator, Cancer Innovation Laboratory, Center for Cancer Research, National Cancer Institute, NIH, Bethesda MD 20892-4258. Email: gonzalef@mail.nih.gov. Tel: 240-760-6875 [collaborator since 1986].
2. Professor Hans E. Krokan, Institute for Cancer Research and Molecular Medicine, Norwegian University of Science and Technology, Trondheim, Norway. Email: hans.krokan@ntnu.no. Tel: +47 72 573 074 [institute director during my time in Norway].

3. Professor Andrea De Gottardi, Gastroenterology and Hepatology, Ente Ospedaliero Cantonale, Lugano, Switzerland. Email: andrea.degottardi@insel.ch. Tel: +41 91 811 7637 [senior colleague and collaborator when in Bern].
4. Professor David Gordon, President, World Federation for Medical Education, 01210 Ferney-Voltaire, France. Email: president@wfme.org. Tel: +33 4 50 59 20 07 [contemporary and colleague at St Mary's Hospital Medical School, London].

12. Scientific publications

Over 430 original scientific articles, reviews, editorials and communications. Ranked in the **top 0.44%** in *Pharmacology and Pharmacy* (413/94,611) and in the **top 0.17%** of 230,678 worldwide researchers in *oncology and carcinogenesis* by Stanford University Top 2% Database (Ioannidis JPA, *et al. PLOS Biology* 2020; <https://doi.org/10.1371/journal.pbio.3000918>). Ranked in the **top 0.21%** of 114,350 worldwide published authors in *metabolomics*.

Complete publication list can be found at ORCID <http://orcid.org/0000-0002-6143-1520>

Total number of citations = 23,279; h-index = 84

287 Publications listed in PubMed; 284 in ORCID; 368 in Web of Science; 394 in Google Scholar (<https://scholar.google.com/citations?hl=en&user=c3tr-UAAAAAJ>)

PUBLICATIONS

A. Peer reviewed papers

- Beyoğlu D, Park EJ, Quiñones-Lombraña A, Dave A, Parande F, Pezzuto JM, Idle JR. Addition of grapes to both a standard and a high-fat Western pattern diet modifies hepatic and urinary metabolite profiles in the mouse. *Food & Function*, 2022, **13**, 8489 – 849.
- Dave A, Park EJ, Kumar A, Parande F, Beyoğlu D, Idle JR, Pezzuto JM. Consumption of grapes modulates gene expression, reduces non-alcoholic fatty liver disease, and extends longevity in female C57BL/6J mice on a high-fat western-pattern diet. *Foods* 2022; **11**: 1984.
- Beyoğlu D, Simillion C, Storni F, De Gottardi A, Idle JR. A metabolomic analysis of cirrhotic ascites. *Molecules* 2022, **27**, 3935. <https://doi.org/10.3390/molecules27123935>

- Mocan T, Kang DW, Molloy BJ, Jeon H, Spârchez ZA, Beyoğlu D, Idle JR. Plasma fetal bile acids 7 α -hydroxy-3-oxochol-4-en-24-oic acid and 3-oxachola-4,6-dien-24-oic acid indicate severity of liver cirrhosis. *Sci Rep* 2021; 11:8298.
- Idle JR, Seipel K, Bacher U, Pabst T, Beyoğlu D. (2R,3S)-Dihydroxybutanoic acid synthesis as a novel metabolic function of mutant isocitrate dehydrogenase 1 and 2 in acute myeloid leukemia. *Cancers* 2020; 12: 2842. <https://doi.org/10.3390/cancers12102842>
- Beyoğlu D, Zhou Y, Chen C, Idle JR. Mass isotopomer-guided decluttering of metabolomic data to visualize endogenous biomarkers of drug toxicity. *Biochem Pharmacol* 2018; 156: 491-500.
- Simillion C, Semmo N, Idle JR, Beyoğlu D. Robust regression analysis of GCMS data reveals differential rewiring of metabolic networks in hepatitis B and C patients. *Metabolites* 2017, 7, 51; doi:10.3390/metabo7040051.
- Patel DP, Krausz KW, Xie X, Beyoğlu D, Gonzalez FJ, Idle JR. Metabolic profiling of energy metabolism in high-fat diet-fed obese mice. *PLoS ONE* 2017, May 16;12(5):e0177953. doi: 10.1371/journal.pone.0177953. eCollection 2017.
- Keogh A, Şenkardeş S, Idle JR, Küçükgülzel ŞG, Beyoğlu D. A novel antihepatitis C virus and antiproliferative agent alters metabolic networks in hepatoma cells. *Metabolites* 2017, Jun 2;7(2). pii: E23. doi: 10.3390/metabo7020023
- Pabst T, Kortz L, Fiedler GM, Ceglarek U, Idle JR, Beyoğlu D. The plasma lipidome in acute myeloid leukemia at diagnosis in relation to clinical disease features. *BBA Clin* 2017; 7: 105-114.
- Golla S, Golla JP, Krausz KW, Mann SK, Simillion C, Beyoğlu D, Idle JR, Gonzalez FJ. Metabolomic analysis of mice exposed to γ -irradiation reveals a systemic understanding of total body radiation exposure. *Radiat Res* 2017; 187: 612-629.
- Wang M, Keogh A, Treves S, Idle JR, Beyoğlu D. The metabolomic profile of gamma-irradiated human hepatoma and muscle cells reveals metabolic changes consistent with the Warburg effect. *PeerJ* 2016 Jan 26;4:e1624. doi: 10.7717/peerj.1624. eCollection 2016.
- Semmo N, Weber T, Idle JR, Beyoğlu D. Metabolomics reveals that aldose reductase activity due to AKR1B10 is upregulated in hepatitis C virus infection. *J Viral Hepatit* 2015; 22: 617-624.
- Beyoğlu D, Krausz KW, Martin J, Maurhofer O, Dorow J, Ceglarek U, Gonzalez FJ, Dufour JF, Idle JR. Disruption of tumor suppressor gene *Hint1* leads to remodeling of the lipid metabolic phenotype of mouse liver. *J Lipid Res* 2014; 55: 2309-19.
- Wang H, Fang ZZ, Zheng Y, Zhou K, Hu C, Krausz KW, Sun D, Idle JR, Gonzalez FJ. Metabolic profiling of praziquantel enantiomers. *Biochem Pharmacol* 2014; 90: 166-178.
- Mathé EA, Patterson AD, Haznadar M, Manna SK, Krausz KW, Bowman ED, Shields PG, Idle JR, Smith PB, Anami K, Kazandjian DG, Hatzakis E, Gonzalez FJ, Harris CC. Noninvasive urinary metabolic profiling identifies diagnostic and prognostic markers in lung cancer. *Cancer Res* 2014; 74: 3259-3270.
- Cheng J, Chen C, Krausz KW, Manna SK, Scerba M, Friedman FK, Luecke H, Idle JR, Gonzalez FJ. Identification of 2-piperidone as a biomarker of CYP2E1 activity through metabolomic phenotyping. *Toxicol Sci* 2013; 135: 37-47.
- Cheng J, Zhen Y, Miksys S, Beyoğlu D, Krausz KW, Tyndale RF, Yu A, Idle JR, Gonzalez FJ. Potential role of CYP2D6 in the central nervous system. *Xenobiotica* 2013; 43: 973-984.
- Manna SK, Krausz KW, Bonzo JA, Idle JR, Gonzalez FJ. Metabolomics reveals age-associated attenuation of noninvasive radiation biomarkers in mice: potential role of polyamine catabolism and incoherent DNA damage-repair. *J Proteome Res* 2013; 12: 2269-2281.
- Fang ZZ, Krausz KW, Tanaka N, Li F, Qu A, Idle JR, Gonzalez FJ. Metabolomics reveals trichloroacetate as a major contributor to trichloroethylene-induced metabolic alterations in

- mouse serum and urine. *Arch Toxicol* 2013; DOI 10.1007/s00204-013-1053-1 [Epub ahead of print].
- Beyoğlu D, Imbeaud S, Maurhofer O, Bioulac-Sage P, Zucman-Rossi J, Dufour JF, Idle JR. Tissue metabolomics of hepatocellular carcinoma: Tumor energy metabolism and the role of transcriptomic classification. *Hepatology* 2013; 58: 229-238.
- Johnson CH, Cheng J, Bonzo JA, Krausz KW, Kang DW, Luecke H, Idle JR, Gonzalez FJ. Cytochrome P450 regulation by α -tocopherol in Pxr-null and humanized-PXR mice. *Drug Metab Dispos* 2013; 41: 406-413.
- Fahrner R, Beyoğlu D, Beldi G, Idle JR. Metabolomic markers for intestinal ischemia in a mouse model. *J Surg Res* 2012; 178: 879-887.
- Johnson CH, Slanař O, Krausz KW, Kang DW, Patterson AD, Kim JH, Luecke H, Gonzalez FJ, Idle JR. Novel metabolites and roles for α -tocopherol in humans and mice discovered by mass spectrometry-based metabolomics. *Am J Clin Nutr* 2012; 96: 818-830.
- Johnson CH, Patterson AD, Krausz KW, Kalinich JF, Tyburski JB, Kang DW, Luecke H, Gonzalez FJ, Blakely WF, Idle JR. Radiation metabolomics. 5. Identification of urinary biomarkers of ionizing radiation exposure in non-human primates by MS-based metabolomics. *Radiat Res* 2012; 178: 328-340.
- Li F, Patterson AD, Krausz KW, Dick B, Frey FJ, Gonzalez FJ, Idle JR. Metabolomics reveals the metabolic map of procainamide in humans and mice. *Biochem Pharmacol* 2012; 83: 1435-1444.
- Patterson AD, Maurhofer O, Beyoğlu D, Lanz C, Krausz KW, Pabst T, Gonzalez FJ, Dufour J-F, Idle JR. Aberrant lipid metabolism in hepatocellular carcinoma revealed by plasma metabolomics and lipid profiling. *Cancer Res* 2011; 71: 6590-6600.
- Manna SK, Patterson AD, Yang Q, Krausz KW, Idle JR, Fornace AJ, Gonzalez FJ. UPLC-MS-based urine metabolomics reveals indole-3-lactic acid and phenyllactic acid as conserved biomarkers for alcohol-induced liver disease in the PPAR α -null mouse model. *J Proteome Res* 2011; 10: 4120-4133.
- Hague DE, Idle JR, Mitchell SC, Smith RL. Racemates revisited: heterochiral assemblies and the example of dl-thalidomide. *Xenobiotica* 2011; 41: 837-843.
- Patterson AD, Bonzo JA, Li F, Krausz KW, Eichler GS, Aslam S, Tigno X, Weinstein JN, Hansen BC, Idle JR, Gonzalez FJ. Metabolomics reveals attenuation of the SLC6A20 kidney transporter in nonhuman primate and mouse models of type 2 diabetes mellitus. *J Biol Chem* 2011; 286: 19511-19522.
- Johnson CH, Patterson AD, Krausz KW, Lanz C, Kang DW, Luecke H, Gonzalez FJ, Idle JR. Radiation metabolomics. 4. UPLC-ESI-QTOFMS-based metabolomics for urinary biomarker discovery in gamma-irradiated rats. *Radiat Res* 2011; 175: 473-484.
- Li F, Patterson AD, Höfer CC, Krausz KW, Gonzalez FJ, Idle JR. A comprehensive understanding of thioTEPA metabolism in the mouse using UPLC-ESI-QTOFMS-based metabolomics. *Biochem Pharmacol* 2011; 81: 1043-1053.
- Lanz C, Ledermann M, Slavik J, Idle JR. The production and composition of rat sebum is unaffected by 3 Gy gamma radiation. *Int J Radiat Biol* 2011; 87: 360-371.
- Li F, Patterson AD, Höfer CC, Krausz KW, Gonzalez FJ, Idle JR. Comparative metabolism of cyclophosphamide and ifosfamide in the mouse using UPLC-ESI-QTOFMS-based metabolomics. *Biochem Pharmacol* 2010; 80: 1063-1074.
- Niu S, Li F, Tan DX, Zhang L, Idle JR, Gonzalez FJ, Ma X. Analysis of N1-acetyl-N2-formyl-5-methoxykynuramine/N1-acetyl-5-methoxy-kynuramine formation from melatonin in mice. *J Pineal Res* 2010; 49: 106-114.

- Manna SK, Patterson AD, Yang Q, Krausz KW, Li H, Idle JR, Fornace AJ, Gonzalez FJ. Identification of noninvasive biomarkers for alcohol-induced liver disease using urinary metabolomics and the Ppara-null mouse. *J Proteome Res* 2010; 9: 4176-4188.
- Li F, Patterson AD, Höfer CC, Krausz KW, Gonzalez FJ, Idle JR. Comparative metabolism of cyclophosphamide and ifosfamide in the mouse using UPLC-ESI-QTOFMS-based metabolomics. *Biochem Pharmacol* 2010; 80: 1063-1074.
- Wang T, Shah YM, Matsubara T, Zhen Y, Tanabe T, Nagano T, Fotso S, Krausz KW, Zabriskie TM, Idle JR, Gonzalez FJ. Control of steroid 21-oic acid synthesis by peroxisome proliferator activated receptor alpha and the role of the hypothalamic-pituitary-adrenal axis. *J Biol Chem* 2010; 285: 7670-7685.
- Cho J-Y, Matsubara T, Kang DW, Ahn S-H, Krausz KW, Idle JR, Luecke H, Gonzalez FJ. Urinary metabolomics in FXR-null mice reveals activated adaptive metabolic pathways upon bile acid challenge. *J Lipids Res* 2010; 51: 1063-1074.
- Patterson AD, Slanař O, Krausz KW, Li F, Höfer CC, Perlík F, Gonzalez FJ, Idle JR. Human urinary metabolomic profile of PPAR α induced fatty acid β -oxidation. *J Proteome Res* 2009; 8: 4293-4300.
- Lanz C, Patterson AD, Slavík J, Krausz KW, Ledermann M, Gonzalez FJ, Idle JR. Radiation metabolomics. 3. Biomarker discovery in the urine of gamma-irradiated rats using a simplified metabolomics protocol of gas chromatography-mass spectrometry combined with random forests machine learning algorithm. *Radiat Res* 2009; 172: 198-212.
- Tyburski JB, Patterson AD, Krausz KW, Slavík J, Fornace AJ Jr, Gonzalez FJ, Idle JR. Radiation Metabolomics. 2. Dose- and time-dependent urinary excretion of deaminated purines and pyrimidines after sublethal gamma-radiation exposure in mice. *Radiat Res* 2009; 172: 42-57.
- Cheng J, Ma X, Krausz KW, Idle JR, Gonzalez FJ. Rifampicin-activated human PXR and CYP3A4 induction enhance acetaminophen-induced toxicity, *Drug Metab Dispos* 2009; 37: 1611-1621.
- Chen C, Krausz KW, Shah YM, Idle JR, Gonzalez FJ. Serum metabolomics reveals irreversible inhibition of fatty acid β -oxidation through the suppression of PPAR α activation as a contributing mechanism of acetaminophen-induced hepatotoxicity. *Chem Res Toxicol* 2009; 22: 699-707.
- Liu A, Patterson AD, Yang Z, Zhang X, Liu W, Qiu F, Sun H, Krausz KW, Idle JR, Gonzalez FJ, Dai R. Fenofibrate metabolism in the Cynomolgus monkey using UPLC-QTOFMS-based metabolomics. *Drug Metab Dispos* 2009; 37: 1157-1163.
- Cho J-Y, Kang DW, Ma X, Ahn S-H, Krausz KW, Luecke H, Idle JR, Gonzalez FJ. Metabolomics reveals a novel vitamin E metabolite and attenuated vitamin E metabolism upon PXR activation. *J Lipid Res* 2009; 50: 924-937.
- Ma X, Cheung C, Krausz KW, Shah Y, Wang T, Idle JR, Gonzalez FJ. A double transgenic mouse model expressing human pregnane X receptor and cytochrome P450 3A4. *Drug Metab Dispos* 2008; 36: 2506-2512.
- Tyburski JB, Patterson AJ, Krausz KW, Slavík J, Fornace AJ, Gonzalez FJ, Idle JR. Radiation metabolomics. 1. Identification of minimally invasive urinary biomarkers for gamma radiation in mice. *Radiat Res* 2008; 170: 1-14.
- Chen C, Shah Y, Morimura K, Krausz KW, Miyazaki M, Ntambi JM, Idle JR, Gonzalez FJ. Metabolomics reveals that hepatic stearyl-CoA desaturase 1 downregulation exacerbates inflammation and acute colitis, *Cell Metabolism* 2008; 7: 135-147.
- Patterson AJ, Li H, Eichler G, Krausz KW, Weinstein JN, Fornace AJ, Gonzalez FJ, Idle JR. UPLC-ESI-TOFMS-based metabolomics and Gene Expression Dynamics Inspector self-organizing

- metabolomic maps as tools for understanding the cellular response to ionizing radiation, *Anal Chem* 2008; 80: 665-674.
- Ma X, Chen C, Krausz KW, Idle JR, Gonzalez FJ. A metabolomic perspective of melatonin metabolism in the mouse. *Endocrinology* 2008; 149: 1869-1879.
- Chen C, Krausz KW, Idle JR, Gonzalez FJ. Identification of novel toxicity-associated metabolites by metabolomics and mass isotopomer analysis of acetaminophen metabolism in wild-type and CYP2E1-null mice. *J Biol Chem* 2008; 283: 4543-4559.
- Wang T, Ma X, Krausz KW, Idle JR, Gonzalez FJ. Role of pregnane X receptor in resistance to all-trans-retinoic acid. *J Pharmacol Exp Ther* 2008; 324: 674-684.
- Idle JR, Gonzalez FJ. Metabolomics. *Cell Metabolism* 2007; 6: 348-351.
- Zhen Y, Krausz KW, Chen C, Idle JR, Gonzalez FJ. Metabolomic and genetic analysis of biomarkers for PPAR α expression and activation. *Mol Endocrinol* 2007; 21: 2136-51.
- Ma X, Shah YM, Guo GL, Wang T, Krausz KW, Idle JR, Gonzalez FJ. Rifaximin is a gut-specific human pregnane X receptor activator. *J Pharmacol Exp Ther* 2007; 322: 391-398.
- Chen C, Ma X, Malfatti MA, Krausz KW, Kimura S, Felton JS, Idle JR, Gonzalez FJ. A comprehensive investigation of 2-amino-1-methyl-6-phenylimidazo[4,5-b]pyridine (PhIP) metabolism in the mouse using a multivariate data analysis approach. *Chem Res Toxicol* 2007; 20: 531-542.
- Giri S, Krausz KW, Idle JR, Gonzalez FJ. The metabolomics of (\pm)-arecoline 1-oxide in the mouse and its formation by human flavin-containing monooxygenases, *Biochem Pharmacol* 2007; 73: 561-573.
- Ma X, Shah Y, Cheung C, Guo GL, Feigenbaum L, Krausz KW, Idle JR, Gonzalez FJ. The pregnane X-receptor gene-humanized mouse: a model for investigating drug-drug interactions mediated by cytochromes P450 3A, *Drug Metab Dispos* 2007; 35:194-200.
- Ma X, Idle JR, Malfatti MA, Krausz KW, Nebert DW, Chen C-S, Felton JS, Waxman DJ, Gonzalez FJ. Mouse lung CYP1A1 catalyzes the metabolic activation of 2-amino-1-methyl-6-phenylimidazo[4,5-b]pyridine (PhIP). *Carcinogenesis* 2007; 28: 732-737.
- Slanař O, Nobilis M, Květina J, Mikoviny R, Zima T, Idle JR, Perlík F. Miotic action of tramadol is determined by CYP2D6 genotype. *Physiol Res* 2007; 56: 129-136.
- Herraiz T, Guillen H, Aran VJ, Idle JR, Gonzalez FJ. Comparative aromatic hydroxylation and N-demethylation of MPTP neurotoxin and its analogs, N-methylated β -carboline and isoquinoline alkaloids by human cytochrome P450 2D6. *Toxicol Appl Pharmacol* 2006; 216: 387-398.
- Chen C, Meng L, Ma X, Krausz KW, Pommier Y, Idle JR, Gonzalez FJ. Urinary metabolite profiling reveals CYP1A2-mediated metabolism of Aminoflavone (NSC 686288). *J Pharmacol Exp Ther* 2006; 318: 1330-1342.
- Zhen Y, Slanař O, Krausz KW, Chen C, Slavík J, McPhail KL, Zabriskie TM, Perlík F, Gonzalez FJ, Idle JR. 3,4-Dehydrodebrisoquine, a novel debrisoquine metabolite formed from 4-hydroxydebrisoquine that impacts the CYP2D6 metabolic ratio. *Drug Metab Dispos* 2006; 34:1563-1574.
- Giri S, Idle JR, Chen C, Zabriskie TM, Krausz KW, Gonzalez FJ. A metabolomic approach to the metabolism of the areca nut alkaloids arecoline and arecaidine in the mouse. *Chem Res Toxicol* 2006; 19: 818-827.
- Ma X, Idle JR, Krausz KW, Tan DX, Ceraulo L, Gonzalez FJ. Urinary metabolites and antioxidant products of exogenous melatonin in the mouse. *J Pineal Res* 2006; 40: 343-349.

- Lerch S, Küpfer A, Idle JR, Lauterburg BH. Cerebral formation in situ of S-carboxymethylcysteine after ifosfamide administration to mice: a further clue to the mechanism of ifosfamide encephalopathy. *Toxicol Lett* 2006; 161: 188-194.
- Cheung C, Ma X, Krausz KW, Kimura S, Feigenbaum L, Dalton TP, Nebert DW, Idle JR, Gonzalez FJ. Differential metabolism of 2-amino-1-methyl-6-phenylimidazo[4,5-b]pyridine (PhIP) in mice humanized for CYP1A1 and CYP1A2. *Chem Res Toxicol* 2005; 18: 1471-1478.
- Idle JR. Christmas gingerbread (Lebkuchen) and Christmas cheer – Review of the potential role of mood elevating amphetamine-like compounds formed in vivo and in furno. *Prague Medical Report* 2005; 106: 27-38.
- Ma X, Idle JR, Krausz KW, Gonzalez FJ. Metabolism of melatonin by human cytochromes P450. *Drug Metab Dispos* 2005; 33: 489-494.
- Barennes H, Valea I, Boudat AM,, Idle JR, Nagot N. Early glucose and methylene blue are effective against unripe ackee apple (*Blighia sapida*) poisoning in mice. *Fd Chem Toxicol* 2004; 42: 809-815.
- Yu A-M, Idle JR, Herraiz T, Küpfer A, Gonzalez FJ. Screening for endogenous substrates reveals that CYP2D6 is a 5-methoxyindolethylamine O-demethylase. *Pharmacogenetics* 2003; 13: 307-319.
- Yu A-M, Idle JR, Byrd LG, Krausz KW, Küpfer A, Gonzalez, FJ. Regeneration of serotonin from 5-methoxytryptamine by polymorphic human cytochrome P450 CYP2D6. *Pharmacogenetics* 2003; 13: 173-181.
- Holthe M, Rakvåg T, Klepstad P, Idle JR, Kaasa S, Krokan HE, Skorpen F. Sequence variations in the UDP-glucuronosyltransferase 2B7 (UGT2B7) gene: identification of 10 novel single nucleotide polymorphisms (SNPs) and analysis of their relevance to morphine glucuronidation in cancer patients. *Pharmacogenomics J* 2003; 3: 17-26.
- Yu A-M, Idle JR, Krausz KW, Küpfer A, Gonzalez FJ. Role of P450 isoenzymes in O-demethylation of the psychotropic β -carboline alkaloids harmaline and harmine. *J Pharmacol Exp Ther* 2003; 305: 315-322.
- Yu A-M, Granvil CP, Haining RL, Krausz KW, Corchero J, Küpfer A, Idle JR, Gonzalez FJ. The contribution of monoamine oxidase and cytochromes P450 to the oxidative deamination of the trace amine tryptamine. *J Pharmacol Exp Ther* 2003; 304: 539-546.
- Granvil CP, Krausz KW, Gelboin HV, Idle JR, Gonzalez FJ. 4-Hydroxylation of debrisoquine by human CYP1A1 and its inhibition by quinidine and quinine. *J Pharmacol Exp Ther* 2002; 301: 1025-1032.
- Corchero J, Granvil CP, Hayhurst GP, Pimprale S, Feigenbaum L, Idle JR, Gonzalez FJ. The CYP2D6 humanized mouse: Effect of the human CYP2D6 transgene and HNF4 α on the disposition of debrisoquine in the mouse. *Mol Pharmacol* 2001; 60: 1260-1267.
- Chatton J-Y, Idle JR, Vågbø CB, Magistretti PJ. A plausible mechanism of ifosfamide encephalopathy: drug metabolites have agonistic effects on alpha-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA)/kainate receptors and interfere with lactate transport in mouse cortical neurons. *J Pharmacol Exp Ther* 2001; 299: 1161-1168.
- Grevle L, Güzey C, Hadidi H, Brennersted R, Idle JR, Aasly J. Allelic association between the DRD2 TaqI A polymorphism and Parkinson's disease. *Mov Disord* 2000; 15: 1070-1074.
- Leathart JB, London SJ, Steward A, Adams JB, Idle JR, Daly AK. CYP2D6 phenotype-genotype relationships in African-Americans and Caucasians in Los Angeles. *Pharmacogenetics* 1998; 8: 529-541.

- Hadidi H, Irshaid Y, Vågbø CB, Brunsvik A, Cholerton S, Zahlens K, Idle JR. Variability of coumarin 7- and 3-hydroxylation in a Jordanian population is suggestive of a functional polymorphism in cytochrome P450 CYP2A6. *Eur J Clin Pharmacol* 1998; 54: 437-41.
- Boustead C, Taber H, Idle JR, Cholerton S. CYP2D6 genotype and smoking behaviour in cigarette smokers. *Pharmacogenetics* 1997; 7: 411-414.
- London SJ, Sullivan-Klose T, Daly AK, Idle JR. Lung cancer risk in relation to the CYP2C9 genetic polymorphism among Caucasians in Los Angeles County. *Pharmacogenetics* 1997; 7: 401-404.
- Hildesheim A, Anderson LM, Chen C-J, Cheng Y-J, Brinton LA, Daly AK, Reed CD, Chen I-H, Caporaso NE, Hsu M-M, Chen Y-J, Idle JR, Hoover RN, Yang C-S, Chhabra SK. Cytochrome P4502E1 genetic polymorphism and risk of nasopharyngeal carcinoma in Taiwan. *J Natl Cancer Inst* 1997; 89: 1207-1212.
- Hadidi H, Zahlens K, Idle JR, Cholerton S. A single amino acid substitution (Leu160His) in cytochrome P450 CYP2A6 causes switching from 7-hydroxylation to 3-hydroxylation of coumarin. *Fd Chem Toxicol* 1997; 35: 903-907.
- Boustead C, Taber H, Idle JR, Cholerton S. CYP2D6 genotypes in cigarette smokers and non-tobacco users. *Pharmacogenetics* 1996; 6: 261-263.
- Løvlie R, Daly AK, Idle JR, Steen VM. Characterization of the 16+9 kb and 30+9 kb CYP2D6 XbaI alleles. *Pharmacogenetics* 1997; 7: 149-152.
- London SJ, Daly AK, Leathart JBS, Navidi WC, Carpenter CC, Idle JR. Genetic polymorphism of CYP2D6 and lung cancer risk in African-Americans and Caucasians in Los Angeles County. *Carcinogenesis* 1997; 18: 1203-1214.
- Fernandez-Salguero PM, Sapone, Wei X, Holt JR, Jones S, Idle JR, Gonzalez FJ. Lack of correlation between phenotype and genotype for the polymorphically expressed dihydropyrimidine dehydrogenase in a family of Pakistani origin. *Pharmacogenetics* 1997; 7: 161-163.
- Armstrong M, Daly AK, Blennerhassett R, Ferrier N, Idle JR. Antipsychotic drug-induced movement disorders in schizophrenics in relation to CYP2D6 genotype. *Br J Psych* 1997, 170: 23-26.
- Yule SM, Boddy AV, Cole M, Price L, Wyllie R, Tasso MJ, Pearson ADJ, Idle JR. Cyclophosphamide pharmacokinetics in children. *Br J Clin Pharmacol* 1996, 41: 13-19.
- Thomason JM, Seymour RA, Ellis JS, Kelly PJ, Parry G, Dark J, Wilkinson R, Idle JR. Determinants of gingival overgrowth severity in organ transplant patients. An examination of the role of HLA phenotype. *J Clin Periodontol* 1996, 23: 628-634.
- Sandy MS, Armstrong M, Tanner CM, Daly AK, Di Monte DA, Langston JW, Idle JR. CYP2D6 allele frequencies in young-onset Parkinson's disease. *Neurology* 1996, 47: 225-230.
- Monkman SC, Ellis JS, Cholerton S, Thomason JM, Seymour RA, Idle JR. Automated gas chromatographic assay for amlodipine in plasma and gingival crevicular fluid. *J Chromatogr B* 1996, 678: 360-364.
- Løvlie R, Daly AK, Molven A, Idle JR, Steen VM. Ultrarapid metabolizers of debrisoquine: Characterization and PCR-based detection of alleles with duplication of the CYP2D6 gene. *FEBS Lett* 1996, 392: 30-34.
- London SJ, Navidi WC, Daly AK, Idle JR. Correspondence re: S.J. London et al., Lung cancer risk in African-Americans in relation to a race-specific CYP1A1 polymorphism. *Cancer Res* 1996, 56: 4276-4277.
- London SJ, Daly AK, Leathart JBS, Navidi WC, Idle JR. Lung cancer risk in relation to the CYP2C9*1/CYP2C9*2 polymorphism among African-Americans and Caucasians in Los Angeles County, California. *Pharmacogenetics* 1996, 6: 527-533.

- London SJ, Daly AK, Cooper J, Carpenter CL, Ding L, Navidi WC, Idle JR. Lung cancer risk in relation to the CYP2E1 RsaI genetic polymorphism among African-Americans and Caucasians in Los Angeles County. *Pharmacogenetics* 1996, 6: 151-158.
- Daly AK, Fairbrother KS, Andreassen OA, London SJ, Idle JR, Steen VM. Characterization and PCR-based detection of two different hybrid CYP2D7P/CYP2D6 alleles associated with the poor metabolizer phenotype. *Pharmacogenetics* 1996, 6: 319-328.
- Cholerton S, Boustead C, Taber H, Arpanahi A, Idle JR. CYP2D6 genotypes in cigarette smokers and non-tobacco users. *Pharmacogenetics* 1996, 6: 261-263.
- Boddy AV, Yule SM, Wyllie R, Price L, Pearson AD, Idle JR. Intrasubject variation in children of ifosfamide pharmacokinetics and metabolism during repeated administration. *Cancer Chemother Pharmacol* 1996; 38: 147-154.
- Boddy AV, English M, Pearson AD, Idle JR, Skinner R. Ifosfamide nephrotoxicity: limited influence of metabolism and mode of administration during repeated therapy in paediatrics. *Eur J Cancer* 1996; 32A: 1179-1184.
- Beyeler C, Armstrong M, Bird HA, Idle JR, Daly AK. Relationship between genotype for the cytochrome P450 CYP2D6 and susceptibility to ankylosing spondylitis and rheumatoid arthritis. *Ann Rheum Dis* 1996, 55: 66-68.
- Beyeler C, Armstrong M, Bird HA, Idle JR, Daly AK. Relationship between genotype for the cytochrome P450 CYP2D6 and susceptibility to ankylosing spondylitis and rheumatoid arthritis. *Anals Rheumatol* 1996, 55: 66-68.
- Yule SM, Boddy AV, Cole M, Price L, Wyllie R, Tasso MJ, Pearson ADJ, Idle JR. Cyclophosphamide Metabolism in Children. *Cancer Res* 1995, 55: 803-809.
- Thomason JM, Seymour RA, Ellis JS, Kelly PJ, Parry G, Dark J, Idle JR. Iatrogenic gingival overgrowth in cardiac transplantation. *J Periodontol* 1995, 66: 742-746.
- Steen VM, Andreassen OA, Daly AK, Tefre T, Børresen A-L, Idle JR, Gulbrandsen AK. Detection of the poor metabolizer-associated CYP2D6 gene deletion (CYP2D6D allele) by long-PCR technology. *Pharmacogenetics* 1995, 5: 215-223.
- London, SJ, Daly AK, Cooper J, Navidi WC, Carpenter CL, Idle JR. Polymorphism of glutathione S-transferase M1 (GSTM1) and the risk of lung cancer among African-Americans and Caucasians in Los Angeles County. *J Natl Cancer Inst* 1995, 87: 1246 - 1253.
- London SJ, Daly AK, Fairbrother KS, Holmes C, Carpenter CL, Navidi WC, Idle JR. Lung cancer risk in African-Americans in relation to a race-specific CYP1A1 polymorphism. *Cancer Res* 1995, 55: 6035-6037.
- Hildesheim A, Chen C-J, Caporaso NE, Cheng Y-J, Hoover RN, Hsu M-M, Levine PH, Chen I-H, Chen J-Y, Yang C-S, Daly AK, Idle JR. Cytochrome P450 2E1 genetic polymorphisms and risk of nasopharyngeal carcinoma: results from a case-control study conducted in Taiwan. *Cancer Epidemiol Biomarkers Prevent* 1995, 4: 607-610.
- Hadidi HF, Irshaid YM, Woosley RL, Idle JR, Flockhart DA. S-mephenytoin hydroxylation phenotypes in a Jordanian population. *Clin Pharmacol Ther* 1995, 58: 542-547.
- Hadidi HF, Cholerton S, Atkinson S, Irshaid YM, Rawashdeh NM, Idle JR. The N-oxidation of trimethylamine in a Jordanian population. *Br J Clin Pharmacol* 1995, 39: 179-181.
- Furuya H, Gregory W, Taber H, Gonzalez FJ, Idle JR. Genetic Polymorphism of CYP2C9 and its effect on warfarin maintenance dose requirement in patients undergoing anticoagulation. *Pharmacogenetics* 1995, 5: 389-392.
- Fernandez-Salguero P, Hoffman SMG, Cholerton S, Mohrenweiser H, Raunio H, Pelkonen O, Huang J-D, Evans WE, Idle JR and Gonzalez FJ. A genetic polymorphism in coumarin 7-hydroxylation:

- sequence of the human CYP2A genes and identification of variant CYP2A6 alleles. *Am J Hum Genet* 1995, 57: 651-660.
- Ellis JS, Seymour RA, Thomason JM, Butler TM, Idle JR. Periodontal variables affecting nifedipine sequestration in gingival crevicular fluid. *J Periodontol Res* 1995, 30: 272-276.
- de Berker D, Ibbotson S, Simpson NB, Matthews JNS, Idle JR, Rees JL. Reduced experimental contact sensitivity in squamous cell but not basal cell carcinomas of the skin. *Lancet* 1995, 345: 425-426.
- Daly, AK, Leathart JBS, London SJ, Idle JR. An inactive cytochrome P450 CYP2D6 allele containing a deletion and a base substitution. *Human Genet* 1995, 95: 337-341.
- Crespi CL, Steimel DT, Kenman BW, Korzekwa KR, Fernandez-Salguero P, Buters JTM, Gelboin HV, Gonzalez FJ, Idle JR, Daly AK. Comparison of substrate metabolism by wild type CYP2D6 protein and a variant containing methionine, not valine, at position 374. *Pharmacogenetics* 1995, 5: 234-243.
- Boddy AV, Yule SM, Wyllie R, Price L, Pearson ADJ, Idle JR. Comparison of continuous infusion and bolus administration of ifosfamide in children. *Eur J Cancer* 1995, 31: 785-790.
- Boddy AV, Proctor M, Simmonds D, Lind MJ, Idle JR. Pharmacokinetics, metabolism and clinical effect of ifosfamide in breast cancer patients. *Eur J Cancer* 1995, 31: 69-76.
- Boddy AV, Cole M, Pearson ADJ, Idle JR. The kinetics of the auto-induction of ifosfamide metabolism during continuous infusion. *Cancer Chemother Pharmacol* 1995, 36: 53-60.
- Yule SM, Walker D, Pearson ADJ, Idle JR. Potential inhibition of alkylating agent metabolism by fluconazole. *Eur J Clin Microbiol Infect Dis* 1994, 13: 1086-1087.
- Walker D, Flinois J-P, Monkman SC, Beloc C, Boddy AV, Cholerton S, Daly AK, Lind MJ, Pearson ADJ, Beaune PH, Idle JR. Identification of the major human hepatic cytochrome P450 involved in activation and N-dechloroethylation of ifosfamide. *Biochem Pharmacol* 1994, 7: 1157-1163.
- Tefre T, Daly AK, Armstrong M, Leathart, JBS, Idle JR, Haugen A, Brøgger A, Børresen AL. Genotyping of the CYP2D6 gene in Norwegian lung cancer patients and controls. *Pharmacogenetics* 1994, 4: 47-57.
- Seymour RA, Ellis JS, Thomason JM, Monkman S, Idle JR. Amlodipine-induced gingival overgrowth. *J Clin Periodontol* 1994, 21: 281-283.
- Hadidi HF, Cholerton S, Monkman S, Irshaid YM, Rawashdeh NM, Idle JR. Debrisoquine 4-hydroxylation polymorphism in a Jordanian population, *Pharmacogenetics* 1994, 4: 159-161.
- Gregory WL, Game FL, Farrer M, Idle JR, Laker MF, James OFW. Reduced serum lipoprotein(a) levels in patients with primary biliary cirrhosis. *Atherosclerosis* 1994, 105: 43-50.
- Gregory WL, Daly AK, Dunn AN, Cavanagh G, Idle JR, James OFW, Bassendine MF. Analysis of HLA-class-II-encoded antigen-processing genes TAP1 and TAP2 in primary biliary cirrhosis. *Quart J Med* 1994, 87: 237-244.
- Caporaso N, Whitehouse J, Monkman S, Boustead C, Issac H, Fox S, Morse MA, Idle JR, Chung F-L. In-vitro but not in vivo inhibition of CYP2D6 by phenethyl isothiocyanate (PEITC), a constituent of watercress. *Pharmacogenetics* 1994, 4: 275-281.
- Beyeler C, Daly AK, Armstrong M, Astbury C, Bird HA, Idle JR. Phenotype/genotype relationships for the cytochrome P450 enzyme CYP2D6 in rheumatoid arthritis: influence of drug therapy and disease severity. *J Rheumatol* 1994, 21: 1034-1039.
- Armstrong M, Fairbrother K, Idle JR, Daly AK. The cytochrome P450 CYP2D6 allelic variant CYP2D6J and related polymorphisms in a European population. *Pharmacogenetics* 1994, 4: 73-81

- Gregory WL, Mehal W, Dunn AN, Cavanagh G, Chapman R, Fleming KA, Daly AK, Idle JR, James OFW, Bassendine MF. Primary biliary cirrhosis: contribution of HLA class II allele DR8, *Quart J Med* 1993, 86: 393-399.
- Gregory WL, James OFW, Turner I, Meese CO, Idle JR. Re-evaluation of the metabolism of carbocysteine in a British white population: lack of evidence for a genetic polymorphism. *Pharmacogenetics* 1993, 3: 270-274.
- Foster JR, Idle JR, Hardwick JP, Bars R, Scott P, Braganza JM. Induction of drug-metabolizing enzymes in human pancreatic cancer and chronic pancreatitis. *J Pathol* 1993, 169: 457-463.
- Ellis JS, Seymour RA, Monkman S, Idle JR. Disposition of nifedipine in plasma and gingival crevicular fluid in relation to drug-induced gingival overgrowth. *J Periodontal Res* 1993; 28: 373-378.
- Ellis JS, Monkman SC, Seymour RA, Idle JR. Determination of nifedipine in gingival crevicular fluid: a capillary gas chromatographic method for nifedipine in microlitre volumes of biological fluid. *J Chromatogr B* 1993, 621: 95-101.
- Daly AK, Thomas DJ, Cooper J, Pearson WR, Neal DE, Idle JR. Homozygous deletion of the glutathione S-transferase M1 (GSTM1) gene is a risk factor in bladder cancer. *Brit Med J* 1993, 307: 481-482.
- Boddy AV, Yule SM, Wyllie R, Price L, Pearson ADJ, Idle JR. Pharmacokinetics and metabolism of ifosfamide administered as a continuous infusion in children. *Cancer Res* 1993, 53: 1-7.
- Armstrong MA, Idle JR, Daly AK. A polymorphic CfoI site in exon 6 of the human CYP2D6 gene detected by the polymerase chain reaction. *Human Genet* 1993, 91: 616-617.
- Tasso MJ, Boddy AV, Price L, Wyllie RA, Idle JR, Pearson ADJ. Pharmacokinetics and metabolism of cyclophosphamide in paediatric patients. *Cancer Chemother Pharmacol* 1992, 30: 207-211.
- Philip PA, Joel S, Monkman SC, Dolega-Ossowski E, Tonkin K, Carmichael J, Idle JR, Harris AL. A phase I study on the reversal of multidrug resistance (MDR) in vivo: nifedipine plus etoposide. *Br J Cancer* 1992, 65: 267-270.
- McCracken NW, Cholerton S, Idle JR. Cotinine formation by cDNA-expressed human cytochromes P450. *Med Sci Res* 1992, 20: 877-878.
- Ellis JS, Seymour RA, Monkman SC, Idle JR. Nifedipine-induced gingival overgrowth is associated with massively elevated nifedipine concentrations in gingival crevicular fluid. *Lancet* 1992, 339: 1382-1383.
- Daly AK, Salh BS, Bilton D, Allen J, Knight AD, Webb AK, Braganza, JM, Idle JR. Deficient nifedipine oxidation: a rare inherited trait associated with cystic fibrosis kindreds. *Pharmacogenetics* 1992, 2: 19-24.
- Cholerton S, Idle ME, Vas A, Gonzalez FJ, Idle JR. Comparison of a novel thin-layer chromatography-fluorescence detection method with a spectrofluorometric method for the determination of 7-hydroxycoumarin in human urine. *J Chromatogr B* 1992, 575: 325-330.
- Boddy AV, Idle JR. Combined thin-layer chromatography-photography-densitometry for the quantitation of ifosfamide and its principal metabolites in urine and plasma. *J Chromatogr B* 1992, 575: 137-142.
- Boddy AV, Furtun Y, Sardas S, Sardas O, Idle JR. Interindividual variation in the activation and inactivation metabolic pathways of cyclophosphamide. *J Natl Cancer Inst* 1992, 84: 1744-1748.
- Barclay S, Thomason JM, Idle JR, Seymour RA. The incidence and severity of nifedipine-induced gingival overgrowth. *J Clin Periodontol* 1992, 19: 311-314.
- Armstrong M, Daly AK, Cholerton S, Bateman DN, Idle JR. Mutant debrisoquine hydroxylation genes in Parkinson's disease. *Lancet* 1992, 339: 1017-1018.

- Sardas S, Pontin J, Idle JR. Polymorphic 4-hydroxylation of debrisoquine in a Turkish population. *Pharmacogenetics* 1991; 1: 123-124.
- Nikolov IG, Chernozemsky IN, Idle JR. Genetic predisposition to Balkan endemic nephropathy: ability to hydroxylate debrisoquine as a host risk factor. *IARC Sci Pub* 1991; 115: 289-296.
- Daly, AK, Armstrong M, Monkman SC, Idle ME, Idle JR. The genetic and metabolic criteria for the assignment of debrisoquine 4-hydroxylation (cytochrome P450IID6) phenotypes. *Pharmacogenetics* 1991; 1: 33-41.
- Ayesh R, Dawling S, Hayler A, Oates NS, Cholerton S, Widdop B, Idle JR, Smith RL. Comparative effects of the diastereoisomers quinine and quinidine in producing phenocopy debrisoquine poor metabolisers (PMs) in healthy volunteers. *Chirality* 1991; 3: 14-18.
- Pontin JE, Hamed H, Fentiman IS, Idle JR. Cytochrome P450db1 phenotypes in malignant and benign breast disease. *Eur J Cancer* 1990; 26: 790-792.
- Lind MJ, Roberts HL, Thatcher N, Idle JR. The effect of route administration and fractionation of dose on the metabolism of ifosfamide. *Cancer Chemother Pharmacol* 1990; 26: 105-111.
- Ferner RE, Monkman S, Reilley J, Cholerton S, Idle JR, Bateman DN. Pharmacokinetics and toxic effects of nifedipine in massive overdose. *Human Exp Toxicol* 1990; 9: 309-311.
- Edwards C, Monkman S, Cholerton S, Rawlins MD, Idle JR, Ferner RE. Lack of effect of co-trimoxazole on the pharmacokinetics and pharmacodynamics of nifedipine. *B J Clin Pharmacol* 1990; 30: 889-891.
- Rimoy GH, Idle JR, Bhaskar NK, Rubin P. The influence of food on the pharmacokinetics of 'biphasic' nifedipine at steady state in normal subjects. *Br J Clin Pharmacol* 1989; 28: 612-615.
- Law MR, Hetzel MR, Idle JR. Debrisoquine metabolism and genetic predisposition to lung cancer. *Br J Cancer* 1989; 59: 686-687.
- Caporaso N, Pickle LW, Bale S, Ayesh R, Hetzel M, Idle JR. The distribution of debrisoquine metabolic phenotypes and implications for the suggested association with lung cancer risk. *Genet Epidemiol* 1989; 6: 517-524.
- Caporaso N, Hayes RB, Dosemeci M, Hoover R, Ayesh R, Hetzel M, Idle J. Lung cancer risk, occupational exposure and the debrisoquine metabolic phenotype. *Cancer Res* 1989; 49: 3675-3679.
- Ayesh R, Al-Waiz M, McBurney A, Mitchell SC, Idle JR, Ward JW, Smith RL. Variable metabolism of pinacidil: lack of correlation with the debrisoquine and trimethyl C- and N-oxidative polymorphisms. *Br J Clin Pharmacol* 1989; 27: 423-428.
- Al-Waiz M, Ayesh R, Mitchell SC, Idle JR, Smith RL. Trimethylaminuria: the detection of carriers using a trimethylamine load test. *J Inher Metab Dis* 1989; 12: 80-85.
- Schmid BJ, Perry HE, Idle JR. Determination of nifedipine and its three principal metabolites in plasma and urine by automated electron-capture capillary gas chromatography. *J Chromatogr* 1988; 425: 107-119.
- Jones SM, Idle JR, Hirom PC. Differential expression of glutathione transferase by native and cultured human lymphocytes. *Biochem Pharmacol* 1988; 37: 4586-4590.
- Jones SM, Brooks BA, Langley SC, Idle JR, Hirom PC. Glutathione transferase activities of cultured human lymphocytes. *Carcinogenesis* 1988; 9: 395-398.
- Idle JR. Pharmacogenetics: Enigmatic variations. *Nature* 1988; 331: 391-392.
- Hadidi AFA, Idle JR, Combined thin-layer chromatography-photography-densitometry for the quantitation of cyclophosphamide and its four principal urinary metabolites. *J Chromatogr* 1988; 427: 121-130.

- Hadidi AFA, Coulter CEA, Idle JR. Phenotypically deficient elimination of carboxyphosphamide after cyclophosphamide administration to cancer patients. *Cancer Res* 1988; 48: 5167-5171.
- Gonzalez FJ, Schmid B, Umeno M, McBride OW, Hardwick JP, Meyer UA, Gelboin HV, Idle JR. Human P450PCN1: Sequence, chromosome localization, and direct evidence through cDNA expression that P450PCN1 is nifedipine oxidase. *DNA* 1988; 7: 79-86.
- Feher MD, Oates NS, Schmid BJ, Perry HE, Sever PS, Idle JR. Metabolism and pharmacokinetics of two formulations of nifedipine. *J Drug Dev* 1988; 1: 93-97.
- Brooks BA, McBride OW, Dolphin CT, Farrall M, Scambler PJ, Gonzalez FJ, Idle JR. The gene CYP3 encoding P450PCN1 (nifedipine oxidase) is tightly linked to the gene COL1A2 encoding collagen type 1 alpha on 7q21.3-q22.1. *Am J Hum Genet*; 1988; 43: 280-284.
- Al-Waiz M, Ayes R, Mitchell SC, Idle JR, Smith RL. Trimethylaminuria (fish-odour syndrome): a study of an affected family. *Clin Sci* 1988; 74: 231-236.
- Sardas S, Idle JR, Pontin J. Debrisoquine oxidation in a Turkish population. *J Fac Pharm Gazi* 1987; 4: 137-142.
- Al-Waiz M, Mitchell SC, Idle JR, Smith RL. The relative importance of N-oxidation and N-demethylation in the metabolism of trimethylamine in man. *Toxicology* 1987; 43: 117-121.
- Al-Waiz M, Mitchell SC, Idle JR, Smith RL. The metabolism of ¹⁴C-labelled trimethylamine and its N-oxide in man. *Xenobiotica* 1987; 17: 551-558.
- Al-Waiz M, Ayes R, Mitchell SC, Idle JR, Smith RL. Disclosure of the metabolic retroversion of trimethylamine N-oxide in man: a pharmacogenetic approach. *Clin Pharmacol Ther* 1987; 42: 608-612.
- Al-Waiz M, Ayes R, Mitchell SC, Idle JR, Smith RL. A genetic polymorphism of the N-oxidation of trimethylamine in man. *Clin Pharmacol Ther* 1987; 42: 588-594.
- Ritchie JC, Crothers MJ, Shah RR, Idle JR, Smith RL. The metabolism of debrisoquine in man: (1) regioselectivity of hydroxylation and (2) aberrant oxidative metabolism in two sibling patients with carbimazole-induced agranulocytosis. *Xenobiotica* 1986; 16: 503-509.
- Mitchell SC, Waring RH, Wilson VL, Idle JR, Autrup H, Harris CC, Ritchie JC, Crothers MJ, Sieber SM. Sulphoxidation of S-carboxymethyl-L-cysteine in the rhesus monkey (*Macaca mulatta*), cynomolgus monkey (*Macaca fascicularis*), African green monkey (*Cercopithecus aethiops*) and the marmoset (*Callithrix jacchus*). *Comp Biochem Physiol* 1986; 84B: 143-144.
- Hietanen E, Malaveille C, Camus A-M, Gereziat J-C, Brun G, Castegnaro M, Michelon J, Idle JR, Bartsch H. Interstrain comparison of hepatic and renal microsomal carcinogen metabolism and liver S-9 mediated mutagenicity in DA and Lewis rats phenotypes as poor and extensive metabolizers of debrisoquine. *Drug Metab Dispos* 1986; 14: 118-126.
- Woodhouse NM, Eichelbaum M, Oates NS, Idle JR, Smith RL. Dissociation of co-regulatory control of debrisoquine/phenformin and sparteine oxidation in Ghanaians. *Clin Pharmacol Ther* 1985; 37: 512-521.
- Shah RR, Evans DAP, Oates NS, Idle JR, Smith RL. The genetic control of phenformin 4-hydroxylation. *J Med Genet* 1985; 22: 361-366.
- Haley CS, Waring RH, Mitchell SC, Shah RR, Idle JR, Smith RL. Lack of congruence of S-carboxymethyl-L-cysteine sulphoxidation and debrisoquine 4-hydroxylation in a caucasian population. *Xenobiotica* 1985; 15: 445-450.
- Mitchell SC, Waring RH, Haley CS, Idle JR, Smith RL. Genetic aspects of the polymodally distributed sulphoxidation of S-carboxymethyl-L-cysteine in man. *Br J Clin Pharmacol* 1984; 18: 507-521.

- Emery P, Panayi GS, Hutson G, Welsh KI, Mitchell SC, Shah RR, Idle JR, Smith RL, Waring RH. D-penicillamine induced toxicity in rheumatoid arthritis: the role of sulphoxidation status and HLA-DR3. *J Rheumatol* 1984; 11 626-632.
- Ayesh R, Idle JR, Ritchie JC, Crothers MJ, Hetzel MR. Metabolic oxidation phenotypes as markers for susceptibility to lung cancer. *Nature* 1984; 312:169-170.
- Sloan TP, Lancaster R, Shah RR, Idle JR, Smith RL. Genetically determined oxidation capacity and the disposition of debrisoquine. *Br J Clin Pharmacol* 1983; 15: 443-450.
- Shah RR, Oates NS, Idle JR, Smith RL, Lockhart JDF. Prediction of subclinical perhexiline neuropathy in a patient with an inborn error of debrisoquine hydroxylation. *Am Heart J* 1983; 105: 159-161.
- Ritchie JC, Mitchell SC, Idle JR, Smith RL. Sex dimorphism of metiamide sulphoxidation and glucuronidation in rodent species. *Biochem Soc Trans* 1983; 11: 183-184.
- Oates NS, Shah RR, Idle JR, Smith RL. Influence of oxidation polymorphism on phenformin kinetics and dynamics. *Clin Pharmacol Ther* 1983; 34: 827-834.
- Evans DAP, Harmer D, Downham DY, Whibley EJ, Idle JR, Ritchie J, Smith RL. The genetic control of sparteine and debrisoquine metabolism in man with new methods of analysing bimodal distributions. *J Med Genet* 1983; 20: 321-329.
- Devonshire HW, Kong I, Cooper M, Sloan TP, Idle JR, Smith RL. The contribution of genetically determined oxidation status to inter-individual variation in phenacetin disposition. *Br J Clin Pharmacol* 1983; 16: 157-166.
- Waring RH, Mitchell SC, Shah RR, Idle JR, Smith RL. Polymorphic sulphoxidation of S-carboxymethyl-L-cysteine in man. *Biochem Pharmacol* 1982; 31: 3151-3154.
- Shah RR, Oates NS, Idle JR, Smith RL. Impaired oxidation of debrisoquine in patients with perhexiline neuropathy. *Br Med J* 1982; 284: 295-299.
- Osikowska BA, Idle JR, Swinbourne FJ, Sever PS. Unequivocal synthesis and characterisation of dopamine 3- and 4-O-sulphates. *Biochem Pharmacol* 1982; 31: 2279-2284.
- Oram M, Wilson K, Burnett D, Al-Dabbagh SG, Idle JR, Smith RL. Metabolic oxidation of methaqualone in extensive and poor metabolisers of debrisoquine. *Eur J Clin Pharmacol* 1982; 23: 147-150.
- Oates NS, Shah RR, Idle JR, Smith RL. Genetic polymorphism of phenformin 4-hydroxylation. *Clin Pharmacol Ther* 1982; 32 81-89.
- Nadir HH, Al-Dabbagh SG, Idle JR. Elevated serum cholesterol in drug-oxidation-deficient rats. *Biochem Pharmacol* 1982; 31: 81-89.
- Mitchell SC, Ritchie JC, Idle JR, Smith RL. Nature of the polar metabolites of metiamide and cimetidine in man. *Biochem Soc Trans* 1982; 10: 123-124.
- Mitchell SC, Idle JR, Smith RL. Reductive metabolism of cimetidine sulfoxide in man. *Drug Metab Dispos* 1982; 10: 289-290.
- Mitchell SC, Idle JR, Smith RL. The metabolism of [14C]cimetidine in man. *Xenobiotica* 1982; 12: 283-292.
- Küpfer A, Al-Dabbagh SG, Ritchie JC, Idle JR, Smith RL. Spectral binding studies of the polymorphically metabolised drugs debrisoquine, sparteine and phenformin by cytochrome P-450 by normal and hydroxylation deficient rat strains. *Biochem Pharmacol* 1982; 31: 3193-3199.
- Sloan TP, Idle JR, Smith RL. Influence of the DH/DL alleles regulating debrisoquine oxidation on phenytoin hydroxylation. *Clin Pharmacol Ther* 1981; 29 493-497.

- Mitchell SC, Waring RH, Idle JR, Smith RL. Cimetidine pretreatment decreases carbocysteine sulphoxidation in man. *I.R.C.S. Med Sci* 1981; 9: 1028-1029.
- Idle JR, Mahgoub A, Sloan TP, Smith RL, Mbanefo CO, Bababunmi EA. Some observations of the oxidative phenotype status of Nigerian patients presenting with cancer. *Cancer Lett* 1981; 11: 331-338.
- Danhof M, Idle JR, Teunissen MWE, Sloan TP, Breimer DD, Smith RL. Influence of the genetically controlled deficiency in debrisoquine hydroxylation on antipyrine metabolite formation. *Pharmacology* 1981; 22: 349-358.
- Al-Dabbagh SG, Idle JR, Smith RL. Animal modelling of human polymorphic drug oxidation - the metabolism of debrisoquine and phenacetin in rat inbred strains. *J Pharm Pharmacol* 1981; 33: 161-164.
- Evans DAP, Mahgoub A, Sloan TP, Idle JR, Smith RL. A family and population study of the genetic polymorphism of debrisoquine oxidation in a British white population. *J Med Genet* 1980; 17: 102-105.
- Oates NS, Shah RR, Idle JR, Smith RL. On the urinary disposition of phenformin and 4-hydroxyphenformin and their rapid simultaneous measurement. *J Pharm Pharmacol* 1980; 32: 731-732.
- Mbanefo C, Bababunmi EA, Mahgoub A, Sloan TP, Idle JR, Smith RL. A study of the debrisoquine hydroxylation polymorphism in a Nigerian population. *Xenobiotica* 1980; 10: 811-818.
- Islam SI, Idle JR, Smith RL. The polymorphic 4-hydroxylation of debrisoquine in a Saudi arab population. *Xenobiotica* 1980; 10: 819-825.
- Woolhouse NM, Andoh B, Mahgoub A, Sloan TP, Idle JR, Smith RL. Debrisoquine hydroxylation polymorphism among Ghanaians and caucasians. *Clin Pharmacol Ther* 1979; 26: 584-591.
- Wakile LA, Sloan TP, Idle JR, Smith RL. Genetic evidence for the involvement of different oxidative mechanisms in drug oxidation. *J Pharm Pharmacol* 1979; 31: 350-352.
- Kitchen I, Tremblay J, Andre J, Dring LG, Idle JR, Smith RL, Williams RT. Interindividual and interspecies variation in the metabolism of the hallucinogen 4-methoxy-amphetamine. *Xenobiotica* 1979; 9: 397-404.
- Idle JR, Mahgoub A, Angelo MM, Dring LG, Lancaster R, Smith RL. The metabolism of [14C]-debrisoquine in man. *Br J Clin Pharmacol* 1979; 7: 257-266.
- Sloan TP, Mahgoub A, Lancaster R, Idle JR, Smith RL. Polymorphism of carbon oxidation of drugs and clinical implications. *Br Med J* 1978; 2: 655-657.
- Mahgoub A, Idle JR, Smith RL. A population and familial study of the defective alicyclic hydroxylation of debrisoquine among Egyptians. *Xenobiotica* 1978; 9: 51-56.
- Idle JR, Millburn P, Williams RT. Taurine conjugates as metabolites of arylacetic acids in the ferret. *Xenobiotica* 1978; 8: 253-264.
- Idle JR, Mahgoub A, Lancaster R, Smith RL. Hypotensive response to debrisoquine and hydroxylation phenotype. *Life Sci* 1978; 22: 979-984.
- Mahgoub A, Idle JR, Dring LG, Lancaster R, Smith RL. Polymorphic hydroxylation of debrisoquine in man. *Lancet* 1977; ii: 584-586 [citations 1,455].
- Hiron PC, Idle JR, Millburn P, Williams RT. Glutamine conjugation of phenylacetic acid in the ferret. *Biochem Soc Trans* 1977; 5: 1033-1035.
- Collins MW, French MR, Hiron PC, Idle JR, Bassir O, Williams RT. The conjugation of benzoic acid in the African bat *Epomops franqueti*. *Comp Biochem Physiol* 1977; 56C: 103-104.
- Angelo MM, Idle JR. The conjugation of benzoic acid and phenylacetic acid by the Pipestrelle bat. *Comp Biochem Physiol* 1977; 58C: 57-59.

- Idle JR, Millburn P, Williams RT, Zini G. The conjugation of arylacetic acids in the pigeon compared to the hen. *Biochem Soc Trans* 1976; 4: 141-143.
- Idle JR, Millburn P, Williams RT. Taurine conjugation of arylacetic acids in the ferret. *Biochem Soc Trans* 1976; 4: 139-141.
- Idle JR, Millburn P, Williams RT. Benzoylglutamic acid, a metabolite of benzoic acid in Indian fruit bats. *FEBS Lett* 1975; 59: 234-256.
- Caldwell J, French MR, Idle JR, Renwick AG, Bassir O, Williams RT. Conjugation of foreign compounds in the elephant and hyaena. *FEBS Lett* 1975; 60: 391-395.
- Bridges JW, Evans ME, Idle JR, Millburn P, Osiyemi FO, Smith RL, Williams RT. The conjugation of indolylacetic acid in man, monkeys and other species. *Xenobiotica* 1974; 4: 645-652.

B. Book chapters and review articles

- Beyoğlu D, Idle JR. The gut microbiota – a vehicle for the prevention and treatment of hepatocellular carcinoma. *Biochem Pharmacol*, in press.
- Beyoğlu D, Idle JR. Metabolic rewiring and the characterization of oncometabolites. *Cancers* 2021 June 10; 13(12):2900. doi: 10.3390/cancers13122900.
- Beyoğlu D, Idle JR. Metabolomic insights into the mode of action of natural products in the treatment of liver disease. *Biochem Pharmacol* 2020; 180: 114171.
- Beyoğlu D, Idle JR. Metabolomic and lipidomic biomarkers for premalignant liver disease diagnosis and therapy. *Metabolites* 2020; 10: 50, 1-56; doi:10.3390/metabo10020050
- Beyoğlu D, Zhou Y, Chen C, Idle JR. Mass isotopomer-guided decluttering of metabolomic data to visualize endogenous biomarkers of drug toxicity. *Biochem Pharmacol* 2018; 156: 491-500.
- Beyoğlu D, Idle JR. A history and overview of phenotypic variability in CYP2D6 activity. In: *CYP2D6: Genetics, Pharmacology and Clinical Relevance* (Baumann P, Ed.), Future Medicine, London, 2014, p. 8-27.
- Beyoğlu D, Idle JR. Painting the liver with lasers: The future of liver histology? *Hepatology* 2013; 59: 757-760.
- Beyoğlu D, Idle JR. The metabolomic window into hepatobiliary disease. *J Hepatol* 2013; 59: 842-858.
- Beyoğlu D, Idle JR. Metabolomics and its potential in drug development. *Biochem Pharmacol* 2013; 85: 12-20.
- Beyoğlu D, Idle JR. The glycine deportation system and its pharmacological consequences. *Pharmacol Ther* 2012; 135: 151-167.
- Beyoğlu D, Smith RL, Idle JR. Dog bites man or man bites dog? The enigma of the amino acid conjugations. *Biochem Pharmacol* 2012; 83: 1331-1339.
- Johnson CH, Patterson AD, Idle JR, Gonzalez FJ. Xenobiotic metabolomics: Major impact on the metabolome. *Annu Rev Pharmacol Toxicol* 2012; 52: 37-56.
- Patterson AD, Gonzalez FJ, Idle JR. Xenobiotic metabolism in cancer research – A view through the metabolometer. *Chem Res Toxicol* 2010; 23: 851-860.
- Patterson AD, Lanz C, Gonzalez FJ, Idle JR. The role of mass spectrometry-based metabolomics in medical countermeasures against radiation. *Mass Spectrom Rev* 2010; 29: 503-521.
- Patterson A, Idle JR. A metabolomic perspective of small molecule toxicity. *General and Applied Toxicology*, Third Edition, Balantyne B, Marrs T & Syversen T (Eds), John Wiley & Sons, Ltd, Chichester, p. 439-465; 2009.

- Ma X, Idle JR, Gonzalez FJ. Refining the role of pregnane X receptor in vivo using genetically engineered mouse models. *Proceedings of the 17th International Symposium on Microsomes and Drug Oxidations*, Saratoga Springs, NY, USA, July 6-10, 2008, p. 19-23.
- Ma X, Idle JR, Gonzalez FJ. The pregnane X receptor: From bench to bedside. *Expert Opin Drug Metab Toxicol* 2008; 4: 895-908.
- Chen C, Gonzalez FJ, Idle JR. LC-MS-based metabolomics in drug metabolism. *Drug Metab Rev* 2007; 39: 581-597.
- Yu A-M, Idle JR, Gonzalez FJ. Polymorphic cytochrome P450 2D6: Humanized mouse model and endogenous substrates. *Drug Metab Rev* 2004; 36: 243-277.
- Gonzalez FJ, Yu A, Granvil CP, Küpfer A, Idle JR. The study of xenobiotic-metabolizing P450s using transgenic mice. *Proceedings of the 13th International Conference on Cytochromes P450*, Prague, 29 June- 3 July, 2003, Monduzzi Editore, Bologna, 2003, p. 35-40.
- Hadidi H, Güzey C, Idle JR. Pharmacogenetics and toxicological consequences of human drug oxidation and reduction. In: Ballantyne B, Marrs T, Syversen T, eds. *General and applied toxicology*, second edn. Basingstoke: Macmillan Reference, 1999: 215-250.
- Daly AK, Brockmöller J, Broly F, Eichelbaum M, Evans WE, Gonzalez FJ, Huang JD, Idle JR, Ingelman-Sundberg M, Ishizaki T, Jacqz-Aigrain E, Meyer UA, Nebert DW, Steen VM, Wolf CR, Zanger UM. Nomenclature for human CYP2D6 alleles. *Pharmacogenetics* 1996; 6: 193-201.
- Daly AK, Steen VM, Fairbrother KS, Idle JR. CYP2D6 Multiallelism. *Methods Enzymol* 1996; 272: 199-210.
- Daly AK, Idle JR. Pharmacogenetics. In: *Encyclopedia of Molecular Biology and Molecular Medicine*. Chernow, New York, 1996, pp.399-405.
- Idle JR, Smith RL. Pharmacogenetics in the new patterns of healthcare delivery. *Pharmacogenetics* 1995, 5: 347-350.
- Hall MCS, Gregory WL, Idle JR. Pharmacogenetics: can the therapeutic key objective be accomplished? In: *Horizons in Medicine No. 5*, 1994 pp 79-91, eds. Seymour CA, Weetman PA, Blackwell Scientific Publications.
- Daly AK, Cholerton S, Armstrong A, Idle JR. Genotyping for polymorphisms in xenobiotic metabolism as a predictor of disease susceptibility. *Env Health Persp* 1994, 102: 55-61.
- Gonzalez FJ, Idle JR. Pharmacogenetic phenotyping and genotyping: present status and future potential. *Clin Pharmacokinet* 1994, 26: 59-70
- Monkman S, Cholerton S, Idle JR. Problems and solutions encountered during method development for the analysis of nisoldipine. A second generation calcium antagonist. In: *Sample Preparation for Biomedical and Environmental Analysis*, eds. Stevenson D, Wilson ID. Plenum Press, New York, 1994, pp. 147-155.
- Idle JR, Daly AK. New opportunities in cancer risk evaluation using PCR-based DNA analysis for CYP2D6 (Debrisoquine 4-hydroxylase). *Env Health Persp* 1993, 101: (Suppl. 3) 117-120.
- Boddy AV, Idle JR. The role of pharmacogenetics in chemotherapy: modulation of tumour response and host toxicity. *Cancer Surveys* 1993; 17: 79-104.
- Daly AK, Cholerton S, Gregory W, Idle JR. Metabolic Polymorphisms. *Pharmacol Ther* 1993, 57: 129-160.
- Daly AK, Idle JR. Animal and human P450 polymorphisms. In: *Handbook of Experimental Pharmacology, Cytochrome P450*, Volume 105, eds. Schenkman JB & Greim H, Springer Verlag, New York, 1993, p.433-446.

- Cholerton S, McCracken NW, Idle JR. Factors influencing individual variation in nicotine pharmacokinetics. In: *Biochemistry and Metabolism of Nicotine and Related Alkaloids*, eds. Gorrod JW and Wahrens J, Chapman and Hall, London, 1992, 11: 219-254.
- Idle JR, Armstrong M, Boddy AV, Boustead C, Cholerton S, Cooper J, Daly AK, Ellis J, Gregory W, Hadidi H, Höfer C, Holt J, Leathart J, McCracken N, Monkman SC, Painter JE, Taber H, Walker D, Yule M. The pharmacogenetics of chemical carcinogenesis. *Pharmacogenetics* 1992, 2: 246-258.
- Cholerton S, Daly AK, Idle JR. The role of individual human cytochromes P450 in drug metabolism and clinical responses. *Trends Pharmacol Sci* 1992, 13: 434-439.
- Nikolov IG, Chernozemsky IN, Idle JR. Genetic predisposition to Balkan endemic nephropathy: ability to hydroxylate debrisoquine as a host factor. *IARC Sci Publ* 1991; 115: 289-296.
- Idle JR. Is environmental carcinogenesis modulated by host polymorphism? *Mutation Res* 1991; 247: 259-266.
- Idle JR. Titrating exposure to tobacco smoke using cotinine - a minefield of misunderstandings. *J Clin Epidemiol* 1990; 43: 313-317.
- Idle JR. Cytochrome P450IID phenotypes and human cancer risk. *Cancer Detection and Prevention* 1989; 14: 275-280.
- Weston A, Manchester DK, Choi JS, Rowe M, Trivers GE, Poirer MC, Idle JR, Cartmel B, Mann DL, Harris CC. Human biomonitoring: Detection and characterization of carcinogen-macromolecular adducts. In: *Methods for detecting DNA damaging agents in humans: Applications in cancer epidemiology and prevention*. IARC Scientific Publication No. 89, IARC, Lyon, 1988.
- Jones SM, Brooks BA, Hiron PC, Idle JR. Glutathione S-transferase activity towards 1-chloro-2,4-dinitrobenzene in cultured human lymphocytes. In: *Glutathione S-transferases and carcinogenesis* (TJ Mantle CB Pickett & JD Hayes, eds.), Taylor & Francis, London, pp. 261-263, 1987.
- Ayesh R, Idle JR. Evaluation of drug oxidation phenotypes in the biochemical epidemiology of lung cancer risk. In: *Microsomes and drug oxidations*. (Boobis A, Caldwell J, De Matteis F, Elcombe C, eds.) Taylor & Francis, London, 1985: 340-346.
- Smith RL, Idle JR. The debrisoquine hydroxylation gene : a gene of multiple consequence. *Proc Second World Conference on Clinical Pharmacology and Therapeutics* 1984: 148-164.
- Idle JR, Ritchie JC. Probing genetically variable carcinogen metabolism using drugs. In: *Human Carcinogenesis* (C Harris and H Autrup, eds) Academic press, 1983: 857-881.
- Ritchie JC, Crothers MJ, Idle JR, Grieg JB, Connors TA, Nikolov IG, Chernozemsky IN. Evidence for an inherited metabolic susceptibility to endemic (Balkan) nephropathy. In: *Current Research in Endemic (Balkan) Nephropathy* (S Strahinjic & V Steefanovic, eds). University Press Nis, 1983: 23-27.
- Ritchie JC, Idle JR. Population studies of polymorphism in drug oxidation and its relevance to carcinogenesis. In: *Host factors in human carcinogenesis* B Armstrong & H Bartsch eds. IARC Scientific Publications, No. 39, Lyon (1982).
- Hetzel MR, Law M, Keal EE, Sloan TP, Idle JR, Smith RL. Inborn susceptibility/resistance to lung cancer. In: *Cellular Biology of the Lung*. pp.448-457, Plenum Publishing Corporation, New York (1982).
- Smith RL, Idle JR. Genetic polymorphism in drug oxidation. In: *Drug Reactions and the Liver* (M Davis, JM Treger and R Williams, eds) pp.95-104, Pitman Medical, London (1981).

- Idle JR, Hydroxylation phenotype and hepatocellular carcinoma. In: Drug Reactions and the Liver (M Davis, JM Treger and R Williams, eds) pp.313-315, Pitman Medical, London (1981).
- Ritchie JC, Sloan TP, Idle JR, Smith RL. Toxicological implications of polymorphic drug metabolism. In: Environmental Chemicals, Enzyme Function and Human Disease Ciba Foundation Symposium No. 76, pp.219-244 (1980).
- Idle JR, Smith RL. Inter-ethnic differences in the metabolic disposition of drugs and toxic substances. In: Toxicology in the Tropics (RL Smith and EA Bababunmi eds) pp 239-253, Taylor & Francis Ltd., London (1980).
- Idle JR, Oates NS, Ritchie JC, Shah RR, Sloan TP, Smith RL. New perspectives of genetic polymorphism in drug metabolism. *Advanced Medicine* 1980; 16: 227-234.
- Caldwell J, Idle JR, Smith RL. The amino acid conjugations. In: Extrahepatic Metabolism of Drugs and Other Foreign Compounds (TE Gram, ed) pp. 453-492, Spectrum Publications, New York (1980).
- Idle JR, Smith RL. Polymorphisms of oxidation at carbon centers of drugs and their clinical significance. *Drug Metab Rev* 1979; 9: 301-317.
- Hirrom PC, Idle JR, Millburn P. Comparative aspects of the biosynthesis and excretion of xenobiotic conjugates by non-primate mammals. In: Drug Metabolism from Microbe to Man (RL Smith and DV Parke, eds) pp.299-329, Taylor & Francis Ltd., London (1977).

C. Communications, abstracts, letters and editorials

- Beyoğlu D, Dufour JF, Idle JR. Lipid metabolomics in hepatocellular carcinoma. EASL Monothematic Conference. Systems Biology of the Liver. Systems Biology and Clinics Face à Face. February 21-23, 2013, Luxembourg.
- Beyoğlu D, Fahrner R, Beldi G, Idle JR. GCMS metabolomics reveals serum biomarkers for intestinal ischemia in a mouse model. Poster 2, Metabolomics and proteomics workshop “Technologies and Applications”. October 1-3, 2012, CIC bioGUNE, Bilbao, Spain.
- Idle J. Radiation metabolomics – Progress to date and next steps. Metabolomics and proteomics workshop “Technologies and Applications”. October 1-3, 2012, CIC bioGUNE, Bilbao, Spain.
- Idle JR, Beyoğlu D. The origins and the future of metabolomics in clinical chemistry – individualized diagnosis. *Clin Chem Lab Med* 2012; 50: A219.
- Gonzalez F, Patterson A, Krausz K, Idle J. Investigating the roles of lipids in disease and chemical toxicities using metabolomics. *Chem Phys Lipids* 2011; 164: S5-S8.
- Chen C, Krausz KW, Shah YM, Idle JR, Gonzalez FJ. LC-MS-based metabolomics of acetaminophen-induced acute toxicity. Abstract #1651, SOT, Baltimore, March 15-19, 2009.
- Tyburski JB, Krausz KW, Fornace AJ Jr, Gonzalez FJ, Idle JR. Metabolomics reveals dose- and time-dependent urinary excretion of deaminated purines and pyrimidines after sublethal gamma-radiation exposure in mice. Late Health Effects of Ionizing Radiation. Bridging the Experimental and Epidemiologic Divide. Georgetown University, May 4-6, 2009.
- Patterson AD, Gonzalez FJ, Idle JR. Random Forests-based biomarker discovery from metabolomics datasets. Late Health Effects of Ionizing Radiation. Bridging the Experimental and Epidemiologic Divide. Georgetown University, May 4-6, 2009.
- Idle JR, Gonzalez FJ. Metabolomic and bioinformatic approaches to quantitative radiation biodosimetry in animal models. Late Health Effects of Ionizing Radiation. Bridging the Experimental and Epidemiologic Divide. Georgetown University, May 4-6, 2009.

- Tyburski J, Krausz K, Gonzalez F, Idle J. High-throughput, minimally invasive radiation biodosimetry in the mouse using metabolomics. NIH Research Festival, October 14-17, 2008, Abstract PHYSIO-10.
- Patterson A, Eichler G, Krausz K, Aslam S, Weinstein J, Hansen B, Idle J, Gonzalez F. Redefining the complex metabolic phenotype of type 2 diabetes by UPLC-ESI-TOFMS-based metabolomics profiling of rhesus macaque urine. NIH Research Festival, October 14-17, 2008, Abstract ENDO-5.
- Cheng J, Zhen YY, Krausz K, Idle J, Gonzalez F. Human CYP2D6-transgenic mouse. A model for the CYP2D6 polymorphism. NIH Research Festival, October 14-17, 2008, Abstract PHARM-2.
- Idle JR. From drug metabolism to drug metabolomics in mice. *Prague Med Rep* 2008; 109 Suppl: 49-50.
- Gonzalez FJ, Ma X, Yang Q, Idle JR. Humanized mouse models to predict chemical safety and metabolism. Proceedings of 236th ACS National Meeting & Exposition, Philadelphia, PA, USA, August 17-21, 2008.
- Ma X, Idle JR, Gonzalez FJ. Defining the role of pregnane X receptor in vivo using genetically engineered mouse models. Proceedings of the 17th International Symposium on Microsomes and Drug Oxidations, Saratoga Springs, NY, USA, July 6-10, 2008.
- Lee KS, Idle JR. Pinning down the polo-box domain (Preview). *Chem Biol* 2008; 15: 415-416.
- Laiakis EC, Patterson AD, Hyde DR, Doiron K, Krausz KW, Gonzalez FJ, Idle JR, Fornace AJ Jr. Determination of metabolomic signatures in mouse sera following exposure to gamma radiation. Proceedings of the Radiation Research Society Congress, Boston, September 21-25, 2008.
- Mathe EA, Patterson AD, Bowman E, Krausz KW, Chen C, Gonzalez FJ, Idle JR, Harris CC. Combining metabolic fingerprinting and random forests for early lung cancer diagnosis. Proceedings of AACR, San Diego, April, 2008.
- Mathe EA, Patterson AD, Bowman E, Krausz KW, Chen C, Gonzalez FJ, Idle JR, Harris CC. Combining metabolic fingerprinting and random forests for early lung cancer diagnosis. Proceedings of Keystone Symposium, Biomarker Discovery, Validation, and Applications, Lake Tahoe, February 3-8, 2008.
- Nazarov EG, Coy SL, Krylov EV, Brenner DJ, Krausz KW, Tyburski JB, Patterson AD, Slavik J, Fornace AJ Jr, Gonzalez FJ, Idle JR. Miniature differential mobility ion pre-filtration in API-MS for rapid, non-invasive radiation-exposure biodosimetry. Proceedings of ASMS, Denver, June, 2008.
- Mathe E, Bowman E, Patterson A, Krausz K, Chen C, Gonzalez FJ, Idle J, Harris CC. Combining mass spectrometry and machine learning for early lung cancer diagnosis. The Fellows Award for Research Excellence 2008 (FARE 2008), Poster #, NIH, September 25, 2007.
- Ma X, Krausz KW, Idle JR, Gonzalez FJ. A novel transgenic human CYP3A4 mouse model with human PXR. The Fellows Award for Research Excellence 2008 (FARE 2008), Poster #, NIH, September 25, 2007.
- Tyburski JB, Krausz KW, Fornace AJ, Gonzalez FJ, Idle JR. Radiation metabolomics used to identify thymidine as a non-invasive urinary biomarker for gamma radiation exposure in the mouse. The Fellows Award for Research Excellence 2008 (FARE 2008), Poster #, NIH, September 25, 2007.
- Chen C, Shah Y, Morimura K, Krausz KW, Miyazaki M, Ntambi JM, Idle JR, Gonzalez FJ. Metabolomics reveals that hepatic stearyl-CoA desaturase 1 downregulation exacerbates

- inflammation and acute colitis. The Fellows Award for Research Excellence 2008 (FARE 2008), Poster #, NIH, September 25, 2007.
- Tyburski JB, Slavík J, Krausz KW, Doiron K, Lanz C, Fornace AJ, Gonzalez FJ, Idle JR. Radiation metabolomics permits discovery of mouse urinary biomarkers for gamma radiation exposure. Proceedings of the International Congress of Radiation Research, San Francisco, July 8-12, 2007.
- Patterson AJ, Li H, Krausz KW, Fornace AJ, Gonzalez FJ, Idle JR. Metabolomics as a tool for understanding the cellular stress response of TK6 cells following ionizing radiation exposure. Proceedings of the International Congress of Radiation Research, San Francisco, July 8-12, 2007.
- Ma X, Chen C, Shah Y, Morimura K, Krausz KW, Idle JR, Gonzalez FJ. The effect of pregnane X receptor (PXR)-mediated CYP3A induction on acetaminophen hepatotoxicity. *FASEB J* 2007 21: 886.21.
- Wang T, Ma X, Krausz KW, Idle JR, Gonzalez FJ. Role of the pregnane X receptor in the clinical resistance to all-trans retinoic acid. *FASEB J* 2007 21: 890.9.
- Chen C, Ma X, Malfatti MA, Krausz KW, Kimura S, Felton JS, Idle JR, Gonzalez FJ. A metabolomic investigation of 2-amino-1-methyl-6-phenylimidazo[4,5-b]pyridine (PhIP) metabolism in the mouse. *FASEB J* 2007; 21: 731.1.
- Chen C, Shah Y, Morimura K, Krausz KW, Idle JR, Gonzalez FJ. Metabolomic analysis of inflammatory bowel disease. Proceedings of Lipids in the Lipidomics Era, Keystone Symposia, Taos, New Mexico, February 20-25, 2007.
- Slanař O, Nobilis M, Květina J, Matoušková O, Idle JR, Perlík F. The pharmacokinetics of tramadol is affected by MDR1 polymorphism C3435T. *Eur J Clin Pharmacol* 2007, 63: 419-421.
- Gonzalez FJ, Krausz KW, Chen C, Giri S, Idle JR. Mouse metabolomics for the analysis and prediction of drug metabolism. *Acta Pharmacologica Sinica* 2006: 27 Suppl 1: 24 .
- Wang T, Ma X, Krausz KW, Idle JR, Gonzalez FJ. Role of pregnane X receptor (PXR) in the clinical resistance to all-trans retinoic acid (ATRA). The Fellows Award for Research Excellence 2007 (FARE 2007), Poster #77, NIH, September 25, 2006.
- Gonzalez FJ, Idle JR. Mouse metabolomics. Proc Am Chem Soc, San Francisco, September 10-14, 2006.
- Slanař O, Nobilis M, Květina J, Idle JR, Perlík F. CYP2D6 polymorphism, tramadol pharmacokinetics and pupillary response. *Eur J Clin Pharmacol* 2006; 62: 75-76.
- Cheung C, Morimura K, Ward JM, Zhen Y, Krausz KW, Idle JR, Gonzalez FJ. The PPAR α -humanized mouse. Proc. 3rd Internat Symp PPARS Efficacy and Safety, Monte Carlo, 19-23 March 2005, p. 20.
- Yu A-M, Cheung C, Akiyama TE, Granvil CP, Idle JR, Gonzalez FJ. P450 humanized mice for the study of xenobiotics. Proceedings of the 12th North American ISSX Meeting, Providence RI, 12-16 October, 2003, The International Society for the Study of Xenobiotics, Bethesda, 2003.
- Yu A-M, Haining RL, Idle JR, Gonzalez FJ. Functional difference in biotransformation of drugs and endogenous substrates by CYP2D6 allelic isoforms. Proceedings of the 12th North American ISSX Meeting, Providence RI, 12-16 October, 2003, The International Society for the Study of Xenobiotics, Bethesda, 2003.
- Holthe M, Rakvag T, Klepstad P, Zahlsten K, Borchgrevink PC, Dale O, Kaasa S, Idle JR, Krokan HE, Skorpen F. Morphine in pain control – is the effect influenced by genetic variation? Proc NBS Winter Meeting, Røros (17-20 January, 2002).

- Holthe M, Klepstad P, Borchgrevink P, Kaasa S, Idle JR, Krokan HE, Skorpen F. The significance of the UGT2B7 His268Tyr polymorphism in the formation of morphine 3-glucuronide and morphine 6-glucuronide from morphine in humans. *Internat Narcotics Res Conf, Helsinki* (15-19 July 2001), Abstract.
- Idle JR. The heart of psychotropic drug therapy. *Lancet* 2000; 355: 1824-1825.
- Idle JR, Corchero J, Gonzalez FJ. Medical implications of HGP's sequence of chromosome 22. *Lancet* 2000; 355: 319.
- Idle JR. CYP2A6 polymorphism, nicotine, and environmental nitrosamines. *Lancet* 1999; 12: 353: 2073.
- Küpfer A, Idle JR. Methylene blue and fatal encephalopathy from ackee fruit poisoning. *Lancet* 1999; 353: 1622-3.
- London SJ, Idle JR, Daly AK, Coetzee GA. Genetic variation of CYP2A6, smoking, and risk of cancer. *Lancet* 1999; 353: 898-9.
- Waldum HL, Sandvik AK, Idle JR. Gastrin is the most important factor in ECL tumorigenesis. *Gastroenterology* 1998; 114: 1113-1115.
- Cholerton S, Arpanahi A, McCracken N, Boustead C, Taber H, Johnstone E, Leathart J, Daly AK, Idle JR. Poor metabolisers of nicotine and CYP2D6 polymorphism. *Lancet* 1994, 343: 62-63.
- Idle JR. The long and the short of drug safety. *Lancet* 1993; 341: 696.
- Ellis JS, Seymour RA, Thomason JM, Monkman SC, Idle JR. Gingival sequestration of amlodipine and amlodipine-induced gingival overgrowth. *Lancet* 1993; 341: 1102-1103.
- Cholerton S, Idle JR. The influence of water diuresis on the urinary excretion of 7-hydroxycoumarin. *Br J Clin Pharmacol* 1993, 180-181P.
- Cholerton S, Boustead C, Taber H, Idle JR. A population study of the cardiovascular effects of an oral dose of nicotine in non-smokers. *Br J Clin Pharmacol* 1993, 173-174P.
- Boddy AV, Wyllie R, Price L, Pearson ADJ, Idle JR. Increased clearance of ifosfamide in children during continuous infusion of repeated bolus administration. Abstract, British Paediatric Association 65th Annual Meeting, Warwick, 20-23 April 1993.
- Boddy, A, Pearson A., Idle J. Pharmacokinetics and metabolism of ifosfamide given by continuous infusion compared to bolus administration. Abstract. *New Techniques in Paediatric Oncology*, Paris, December 1992.
- Nikolov IG, Idle JR, Chernozemsky IN. Genetic predisposition to Balkan endemic nephropathy: ability to hydroxylate debrisoquine as host-risk factor. Abstract, *Mycotoxins, Nephropathy and Urinary Tract Tumours*, IARC, Lyon, France, 6-8 June 1991.
- Gregory W, Game F, Farrer M, Idle J, Laker M, James O. Low lipoprotein (a)(Lp(a)) levels may protect patients with primary biliary cirrhosis (PBC) from coronary heart disease. Abstract, *International Association for the Study of the Liver Biennial Scientific Meeting*, Brighton UK, 3-6 June, 1992.
- Gregory W, Burke D, Robertson H, Wheeler J, Freeman R, Idle J, Bassendine M, James O. Plasma tumour necrosis factor a (TNF) in patients with primary biliary cirrhosis (PBC). Abstract, *International Association for the Study of the Liver Biennial Scientific Meeting*, Brighton UK, 3-6 June, 1992.
- Gregory W, Mehal W, Daly AK, Dunn AN, Cavanagh G, Chapman R, Idle J, James OFW, Bassendine MF. Analysis of major histocompatibility complex class I genotype in primary biliary cirrhosis using RFLP and PCR. Abstract, *American Association for the Study of Liver Disease*, Chicago, USA October 31-November 3, 1992.

- Idle JR, Gonzalez FJ. Editorial, *Pharmacogenetics* 1992 2: 47.
- Idle JR, Gonzalez FJ. Editorial, *Pharmacogenetics* 1992 2: 1.
- Gregory W, Game F, Farrer M, Idle J, Laker M, James O. Lipoprotein(a)[Lp(a)] levels and primary biliary cirrhosis (PBC). British Hyperlipidaemia Association, July 1992, Cambridge.
- Daly AK, Armstrong M, Cholerton S, Bateman DN, Idle JR. CYP2D6 genotypes in Parkinson's disease. Abstract, 9th International Symposium on Microsomes and Drug Oxidations, Jerusalem, Israel, 1992.
- Tefre T, Daly A, Armstrong M, Haugen A, Idle J, Børresen A-L. Genotyping of the CYP2D6 gene in lung cancer patients and controls. Abstract, 9th International Symposium on Microsomes and Drug Oxidations, Jerusalem, Israel, 1992.
- Beyeler C, Armstrong M, Daly A, Idle JR, Astbury C, Bird HA, Debrisoquine (DBQ) oxidation polymorphisms do not predispose to rheumatoid arthritis (RA). *B J Rheumatol. Proc BSR Meeting*, 1992 31: 9.
- Beyeler C, Armstrong M, Daly A, Idle JR, Astbury C, Bird HA. Debrisoquine genotype as a marker of susceptibility to ankylosing spondylitis (AS). *B J Rheumatol, Proc BSR Meeting*, 1992 31: 7.
- Idle JR, Gonzalez FJ. Editorial, *Pharmacogenetics* 1992 1: 125.
- Idle JR, Gonzalez FJ. Editorial, *Pharmacogenetics* 1992 1: 65.
- Cholerton S, McCracken NW, Idle JR. Factors influencing individual variation in nicotine pharmacokinetics. Abstract, IUTOX Satellite Meeting on Absorption, Distribution, Metabolism and Excretion of Nicotine and Related Alkaloids, Salsomaggiore, Italy 1992.
- Boddy AV, Wyllie R, Price L, Pearson ADJ, Idle JR. Increased clearance of ifosfamide in children during continuous infusion or repeated bolus administration. Abstract, AAPS Annual Meeting November 15-19 1992, San Antonio, Texas, USA.
- Gregory W, Burke D, Robertson H, Wheeler J, Freeman R, Idle J, Bassendine M, James O. Plasma tumour necrosis factor a (TNF) inpatients with primary biliary cirrhosis. IASL, Brighton, June 1992.
- Gonzalez FJ, Idle JR. Pharmacogenetics - at the dawn of a new era. Abstract, Vth World Conference on Clinical Pharmacology & Therapeutics, Yokohama, Japan, 1992.
- Boddy, AV, Wyllie R, Price L, Idle JR, Pearson AJ. Pharmacokinetics and metabolism of ifosfamide in Paediatric patients. UKCCSG, November 1991, Oral Communication, accepted.
- Gregory WL, James OFW, Idle JR. Carbocysteine polymorphism and disease. *Lancet* 1992; 339: 616.
- Cholerton S, Idle M, Gonzalez FJ, Idle JR. A population study of coumarin metabolism. *Am J Hum Genet* 1992; 49 (Suppl): 540.
- Boddy AV, Furtun Y, Sardas O, Sardas S, Idle JR. Polymorphic urinary metabolite profile of cyclophosphamide in Turkish patients. *Am J Hum Genet* 1992; 49 (Suppl): 538.
- Daly AK, Armstrong M, Monkman SC, Idle ME & Idle JR. Debrisoquine hydroxylation (CYP2D6) phenotype assignment by genotyping. *Am J Hum Genet* 1992 49 (Suppl): 110.
- Idle JR, Gonzalez F. Editorial - *Pharmacogenetics* 1991; 1: 1
- Boddy AV, Lind MJ, Idle JR. The kinetics of ifosfamide and its metabolites in plasma and urine. Abstract E.O.R.T.C. Vienna, June 1991.
- Gregory W, Turner I, Küpfer A, James OFW, Idle JR. Lack of association between poor metabolism of S-carboxymethyl-L-cysteine and primary biliary cirrhosis. *Am J Hum Genet* 49 (Suppl): 542.

- Küpfer A, Idle JR, Cerny T. Uroprotective activity of mesna in man and pH-dependent velocities of chloroacetaldehyde inactivation by thiol groups. *Naun-Schm Arch Pharmacol*, 1991; 344 Suppl. 1: R53
- Küpfer A, Schlunegger UP, Bigler P, Idle JR, Cerny T. Aziridino-ifosfamide : structural and toxicological aspects of ifosfamide (IFO) metabolism in man. *Naun-Schm Arch Pharmacol* 1990; 342 (suppl): R20.
- Küpfer A, Gerber F, Manser E, Turner I, Idle JR. Revised protocol for carbocysteine phenotyping in man. *Naun-Schm Arch Pharmacol* 1991; 343: R10.
- Küpfer A, Gregory W, Meese CO, Idle JR. Phenocopy of extensive carbocysteine metabolism by acetylcysteine co-administration in poor metabolizer subjects. *Experientia*, 1991 47: A29.
- Caporaso N, Weston A, Idle J, Foiles P, Hoover R, Harris CC. NNK-Hemoglobin adducts in a smoking cessation study. *Proc Annu Meet Am Assoc Cancer Res* 1991; 32: A1334.
- Daly AK, Armstrong M, Idle JR. Molecular genotyping to predict debrisoquine hydroxylation phenotype. *Lancet* 1990; 336: 889-890.
- Caporaso N, Idle JR. The rationale for case-control methodology in epidemiological studies of cancer risk (response to Speirs et al., 1990) *Br J Clin Pharmacol* 1990; 30: 149.
- Küpfer A, Cerny T, Idle JR. Intramolecular rearrangement of ifosfamide in aqueous solutions. *Lancet* 1990; 335: 1461.
- Küpfer A, Idle JR. The poor sulphoxidiser phenotype - current carbocysteine protocol produces false positives. *Lancet* 1990; 335: 1107.
- Cholerton S, Ayesh R, Robinson H, Idle JR, Smith RL. Secondary trimethylaminurias; effect of liver disease on the N-oxidation of trimethylamine. *Proc IVth Symp Nitrogen Oxidation*. P10/1: 78.
- McNally P, Mistry N, Idle J, Walls J, Feehally J. Calcium Channel Blockers and Cyclosporine Metabolism. *Transplantation* 1989; 48: 1071.
- Idle JR. Poor metabolisers of debrisoquine reveal their true colours. *Lancet* 1989; ii: 1097.
- Cholerton S, Ayesh R, Idle JR, Smith RL. The effect of quinine and quinidine on the metabolic ratio of debrisoquine in healthy volunteers. *Br J Clin Pharmacol* 1989; 28: 732P.
- McFadden JP, Pontin JE, Powles AV, Fry L, Idle JR. Cyclosporin decreases nifedipine metabolism. *Br Med J* 1989; 299: 1224.
- Sardas S, Karakaya AE, Idle JR. Are the traits for drug acetylation and oxidation co-inherited? *Clin Genet* 1988; 34: 4586-4590.
- Roberts HL, Lind MJ, Thatcher N, Idle JR. Urinary ifosfamide metabolite profile after oral and intravenous administration. *Br J Cancer* 1988; 58: 262.
- Oates NS, Feher MD, Perry HE, Schmid BJ, Sever PS, Idle JR. Influence of quinidine on nifedipine plasma pharmacokinetics. *Br J Clin Pharmacol* 1988; 25: 675P.
- Feher MD, Lucas RA, Farid NA, Idle JR, Bergstrom RF, Lemberger L, Sever PS. Single dose pharmacokinetics of tomoxitene in poor and extensive metabolisers of debrisoquine. *Br J Clin Pharmacol* 1988; 231P.
- Ayesh R, Scadding G, Brostoff J, Idle JR, Smith RL. Stability of the debrisoquine metabolic ratio to immunoperturbation by influenza and pneumococcus vaccines. *Br J Clin Pharmacol* 1988; 25: 141-142P.
- Ayesh R, Dawlins S, Widdop B, Idle JR, Smith RL. Influence of quinidine on the pharmacokinetics of nortriptyline and desipramine in man. *Br J Clin Pharmacol* 1988 25: 140-141P.
- Ayesh R, Al-Waiz M, McBurney A, Mitchell SC, Idle JR, Ward JW, Smith RL. Variable pinacidil N-oxidation: lack of correlation with the debrisoquine and trimethylamine oxidation polymorphisms. *Br J Clin Pharmacol* 1988; 25: 142P.

- Ayesh R, Al-Waiz M, Crothers MJ, Cholerton S, Mitchell SC, Idle JR, Smith RL. Deficient nicotine N-oxidation in two sisters with trimethylaminuria. *Br J Clin Pharmacol* 1988; 25: 664-665P.
- Weston A, Manchester DK, Choi JS, Rowe M, Trivers GE, Idle JR, Cartmel B, Vahakangas K, Mann DL, Harris CC. Detection and characterization of benzo[a]pyrene macromolecular adducts in human peripheral blood cells. *Proc Am Assoc Cancer Res* 1987; 28: 91.
- Oates NS, Ayesh R, Cartmel B, Idle JR. Influence of smoking on the distribution of the debrisoquine metabolic ratio. *Proc Xth Int Congr Pharmacol (Sydney)* 1987; Abstr P91.
- Elliot JM, Hardy JA, Hayes RJ, Idle JR. Phenotypic association between the effects of MPTP treatment and debrisoquine hydroxylation in the rat. *Br J Pharmacol* 1987; 91: 483P.
- Caporaso N, Hayes R, Dosemeci M, Hoover R, Idle J, Ayesh R. Debrisoquine metabolic phenotype (MP), asbestos exposure and lung cancer. *Proc Am Soc Clin Oncol* 1987; 6: 229.
- Brooks BA, Langley S, Jones SM, Oates NS, Idle JR, Hirom PC. Metabolism of benzo[a]pyrene in interleukin-2-dependent T-cells after benzanthracene treatment. *Proc 2nd Internat Workshop on P450 Gene Regulation (Airlie, Virginia)* 1987.
- Ayesh R, Oates NS, Hayler A, Widdop B, Idle JR, Smith RL. Influence of oxidation polymorphism on the pharmacokinetics of tricyclic antidepressants in man. *Br J Clin Pharmacol* 1987; 23: 645-646P.
- Al-Waiz M, Mitchell SC, Ayesh R, Idle JR, Smith RL. Variable N-oxidation of trimethylamine in man. *Br J Clin Pharmacol* 1987; 23: 614P.
- Al-Waiz M, Ayesh R, Mitchell SC, Idle JR, Smith RL. Trimethylaminuria [fish-odour syndrome]: an inborn error of oxidative metabolism. *Lancet* 1987; i: 634-645.
- Hayes RJ, Idle JR. The isolated vas deference of the whale: responses to electrical stimulation and drugs. *J Physiol* 1986; 374: 44P.
- Schmid B, Perry H, Feher M, Sever P, Idle J. Impaired metabolic dehydrogenation of nifedipine. *Acta Pharmacol Toxicol* 1986; Suppl V: 655.
- Perry H, Schmid B, Idle J. Dehydrogenation of nifedipine - fact and artifact. *Acta Pharmacol Toxicol* 1986; Suppl V: 485.
- Oates N, Crothers M, Shah R, Idle J, Smith R. Influence of dextropropoxyphene on oxidation phenotyping using debrisoquine and phenformin. *Acta Pharmacol Toxicol* 1986; Suppl V: 319.
- Idle J, Nadir H. Oxidation phenotype and urinary 20-hydroxy- and 17-oxo-steroid profiles. *Acta Pharmacol Toxicol* 1986; Suppl V: 314.
- Idle J, Hadidi H. Drug interactions with cyclophosphamide metabolism and disposition in mice. *Acta Pharmacol Toxicol* 1986; Suppl V: 1536.
- Hadidi H, Coulter C, Idle J. Cyclophosphamide "metabolic index" - a means of estimating metabolic activation of cyclophosphamide from urine. *Acta Pharmacol Toxicol* 1986; Suppl V: 1535.
- Feher M, Schmid B, Idle J, Sever P. Platelet aggregation and nifedipine plasma concentrations. *Acta Pharmacol Toxicol* 1986; Suppl V: 167.
- Crothers M, Cartmel B, Idle J. Chemical and biological stability of the debrisoquine metabolic ratio. *Acta Pharmacol Toxicol* 1986; Suppl V: 313.
- Cartmel B, Stockton M, Crothers M, Hadidi H, Idle J, Riordan J, McNicol M. Distribution of oxidation phenotypes in lung cancer families. *Acta Pharmacol Toxicol* 1986; Suppl V: 670.
- Al-Waiz M, Mitchell S, Idle J, Smith R. Variation of trimethylamine N-oxidation in man. *Acta Pharmacol Toxicol* 1986; Suppl V: 659.

- Wynne H, Lancaster R, Oates NS, Crothers MJ, Idle JR, Smith RL. Debrisoquine oxidation phenotyping and adverse drug reactions. Utility of phenotyping in general hospital admissions. *Br J Clin Pharmacol* 1985; 255P.
- Idle JR, Smith RL. Protecting the poor metaboliser - from Jack & Wilkins. *Br J Clin Pharmacol* 1984; 17: 492-495.
- Hietanen E, Malaveille C, Camus A-M, Bereziat JC, Brun G, Idle JR, Ritchie JC, Bartsch H. Hepatic drug metabolism and S-9 mediated mutagenicity of carcinogens in rat strains characterised as slow and fast metabolisers of debrisoquine. *Hereditas* 1984; 100: 177.
- Haley CS, Idle JR, Mitchell SC, Smith RL, Waring RH. Heteroatom polymorphic drug oxidation - sulphoxidation. *Br J Clin Pharmacol* 1984;18: 285P-286P.
- Emery P, Hutson G, Idle JR, Mitchell SC, Panayi GS, Smith RL, Waring RH. Sulphoxidation status of rheumatoid patients manifesting untoward reactions to chronic D-penicillamine therapy. *Br J Clin Pharmacol* 1984; 18: 286P.
- Panayi GS, Hutson G, Shah RR, Mitchell SC, Idle JR, Smith RL, Waring RH. Deficient sulphoxidation status and D-penicillamine toxicity. *Lancet* 1983; i: 414.
- Idle JR, Sever PS. Treatment of angina pectoris with nifedipine. *Br Med J* 1983; 286: 1978-1979.
- Idle JR, Oates NS, Shah RR, Smith RL. Protecting poor metabolisers, a group at high risk of adverse drug reactions. *Lancet* 1983; i: 1388.
- Idle JR, Hirom PC, Kirkby CA. Effect of the mo:d locus on the biliary metabolites of benzo[a]pyrene in the rat. In: *Proc 5th Internat Gstaad Symp*, September 1983, 37.
- Shah RR, Oates NS, Idle JR, Smith RL. Beta-Blockers and drug oxidation status. *Lancet* 1982; i: 508-509.
- Kong I, Devonshire HW, Cooper M, Sloan TP, Idle JR, Smith RL. The influence of oxidation phenotype on phenacetin metabolism and haemotoxicity. *Br J Clin Pharmacol* 1982; 13: 275-276P.
- Islam SI, Idle JR. Drug metabolism in arabs - triennial report of the joint Jeddah-London Pharmacogenetics Programme. *Proc 7th Saudi Medical Meeting* 1982.
- Waring RH, Mitchell SC, Idle JR, Smith RL. Genetically determined impaired drug sulphoxidation. *Lancet* 1981; i: 778.
- Oates NS, Shah RR, Idle JR, Smith RL. Phenformin-induced lactic acidosis with impaired debrisoquine hydroxylation. *Lancet* 1981; i: 837-838.
- Islam SI, Idle JR. Increased risk from environmental carcinogens in Saudis. *Proc 6th Saudi Medical Meeting* 1981.
- Idle JR, Osikowska BA, Sever PS, Swinbourne FJ. Pitfalls in the synthesis and authentication of dopamine O-sulphates. *Br J Pharmacol* 1981; 74: 837P.
- Idle JR, Oates NS, Shah RR, Smith RL. Is there a genetic predisposition to phenformin induced lactic acidosis? *Br J Clin Pharmacol* 1981; 11: 418-419P.
- Idle JR, Islam SI. Polymorphism of phenformin 4-hydroxylation in Saudi females. *Br J Pharmacol* 1981; 72: 177-178P.
- Shah RR, Oates NS, Idle JR, Smith RL. Genetic impairment of phenformin metabolism. *Lancet* 1980; i: 1147.
- Mucklow JC, Caraher MT, Idle JR, Rawlins MD, Sloan TP, Smith RL Wood P. The influences of changes of dietary fat on the clearance of antipyrine and the 4-hydroxylation of debrisoquine. *Br J Clin Pharmacol* 1980; 9: 283P.
- Islam SI, Idle JR. Polymorphic drug oxidation among Saudis *Proc 5th Saudi Medical Meeting* 1980: 101.

- Idle JR. A novel role for taurine. In: Sulphur in Biology; Ciba Foundation Symposium, No. 72, pp. 282-284 (1980).
- Hetzel MR, Law M, Keal EE, Sloan TP, Idle JR, Smith RL. Is there a genetic component in bronchial carcinoma in smokers? *Thorax* 1980; 35: 709.
- Danhof M, Breimer D, Sloan TP, Idle JR, Smith RL. Antipyrine metabolite formation in extensive and poor hydroxylators of debrisoquine. *Proc 1st World Cong Clin Pharmacol (Wembley)* 1980.
- Chapman PH, Idle JR, Mahgoub A, Rawlins MD, Smith RL, Shuster S. Drug oxidation in psoriasis. *Br J Dermatol* 1980; 102: 728.
- Chapman PH, Idle JR, Mahgoub A, Mucklow JC, Rawlins MD, Rogers S, Shuster S, Smith RL. 4-Hydroxylation of debrisoquine in psoriasis. *Br J Clin Pharmacol* 1980; 9: 113-114P.
- Bababunmi EA, Idle JR, Mahgoub A, Mbanefo C, Smith RL. Polymorphic hydroxylation of debrisoquine in Nigerians. *Br J Clin Pharmacol* 1980; 9: 112-113P.
- Andoh B, Idle JR, Sloan TP, Smith RL, Woolhouse NM. Inter-ethnic and inter-phenotype differences among Ghanaians and caucasians in the metabolic hydroxylation of phenytoin. *Br J Clin Pharmacol* 1980; 9: 282-283P.
- Mutawa M, Islam SI, Idle JR, Drug oxidation in phenylketonuria. *Proc Conference on Paediatric Disease (Kuwait)* 1979.
- Mahgoub A, Idle JR, Smith RL. Genetically determined variability in drug metabolism: dual slow acetylation and drug oxidation traits. *Lancet* 1979; ii: 154.
- Idle JR, Sloan TP, Smith RL, Wakile LA. Application of the phenotyped panel approach to the detection of polymorphism of drug oxidation. *Br J Pharmacol* 1979; 66: 430-431P.
- Idle JR, Ritchie JC, Smith RL. Oxidation phenotype and metiamide metabolism. *Br J Pharmacol* 1979; 66: 432P.
- Andoh B, Idle JR, Mahgoub A, Sloan TP, Smith RL, Woolhouse NM. Polymorphic hydroxylation of debrisoquine in Ghanaians. *Br J Pharmacol* 1979; 66: 431P.
- Smith RL, Idle JR, Mahgoub TP, Lancaster R. Genetically determined defects of oxidation at carbon centres of drugs. *Lancet* 1978; i: 943-944.
- Sloan TP, Idle JR, Lancaster R, Smith RL. Alicyclic hydroxylation phenotype status and the elimination kinetics of debrisoquine. *Proc 7th Internat Congr Pharmacol* 1978: 2866.
- Lancaster R, Mahgoub A, Idle JR, Smith RL. Alicyclic hydroxylation phenotype and the hypotensive response to debrisoquine. *Proc 7th Internat Congr Pharmacol* 1978: 2789.
- Idle JR, Sever PS. Collecting it. *World Medicine* 1978; p.13 (Sept.6).
- Mahgoub A, Idle JR, Dring LG, Lancaster R, Smith RL. A population and familial study of the defective hydroxylation of debrisoquine. *Br J Clin Pharmacol* 1977; 4: 726P.
- Angelo MM, Dring LG, Idle JR, Lancaster R, Mahgoub A, Smith RL. Defective alicyclic hydroxylation of debrisoquine in man. *Br J Clin Pharmacol* 1977; 4: 725P.

D. Patents awarded

Defects in Drug Metabolism. United States Patent 5,891,633 (April 6, 1999) Inventors: Frank J. Gonzalez & Jeffrey R. Idle.