

(UPDATED MAY 2017)

SUSAN P.C. COLE, PHD, FRSC, FCAHS
CURRICULUM VITAE AND BIBLIOGRAPHY (ABBREVIATED)

CONTACT INFORMATION

Division of Cancer Biology & Genetics
 Queen's University Cancer Research Institute
 10 Stuart St., Rm 312
 Kingston, ON, Canada K7L 3N6

e-mail: spc.cole@queensu.ca; *tel:* 613-533-2636; *fax:* 613-533-6830;

POSITIONS

2006-present	Bracken Chair in Genetics and Molecular Medicine
2013	Researcher in Residence, PARTEQ Innovations
2010-2012	Deputy Provost, Queen's University (<i>inaugural</i>)
2001-2015	Canada Research Chair in Cancer Biology (Tier I)
1995-present	Professor (<i>primary, tenured</i>) Department of Pathology & Molecular Medicine, Queen's University
1995-present	Professor (<i>cross-appointed</i>), Department of Biomedical & Molecular Sciences, Queen's University
1994-present	Professor (<i>cross-appointed</i>), Department of Oncology, Queen's University

EDUCATION & TRAINING

1982-1985	Research Associate/Senior Postdoctoral Fellow Department of Microbiology & Immunology, Queen's University (<i>Advisor:</i> Dr. J. Roder)
1981-1982	Postdoctoral Fellow, Laboratory of Molecular Carcinogenesis National Institutes of Health, Bethesda, MD, USA (<i>Advisors:</i> Drs. H. Gelboin, J. Fagan, A. Peacock and M. Seidman)
1977-1981	Queen's University, PhD (Pharmacology), 1981
1972-1976	Queen's University, BSc (Honours, Biochemistry), 1976

HONOURS, DISTINCTIONS, PRIZES & AWARDS

2017-2019	AACR International – Canada, Board of Directors
2016	Featured in AACR <i>Cancer Research</i> 75 th Anniversary Celebration website: 1 of 62 most highly cited authors
2015-2017	Chair, Division for Cancer Pharmacology, American Society of Pharmacology and Experimental Therapeutics
2015	Hogarty Family Foundation Lecturer, University at Albany Cancer Research Center
2014-2019	Honorary Director, Jinan University Clinical Medical Research Institute, Guangzhou, PRC
2013	Honorary Professor, Jinan University, Guangzhou, PRC
2012	PARTEQ Innovation 25 th Anniversary Award for “Most Licensed Technology”

2012	Queen Elizabeth II Diamond Jubilee Medal <i>(national honour in recognition of contributions to Canada)</i>
2011	Fellow of the Canadian Academy of Health Sciences (CAHS) <i>(elected)</i>
2008	Tier 1 Canada Research Chair <i>(renewal)</i>
2008	Pfizer Senior Scientist Award, Pharmacological Society of Canada
2007	National Cancer Institute of Canada Diamond Jubilee Award <i>(national honour for outstanding contributions to cancer research)</i>
2006, 2011	Queen's University Bracken Chair in Genetics and Molecular Medicine
2005	Robert L. Noble Prize of the Canadian Cancer Society/National Cancer Institute of Canada
2003	British Medical Association Medical Book Competition - Commended in the Basic and Clinical Sciences category for <i>ABC PROTEINS: From Bacteria to Man</i> (co-editor)
2002	Ontario Distinguished Researcher Award
2001	Tier I Canada Research Chair <i>(initial)</i>
2000	Fellow of The Royal Society of Canada, Academy of Science <i>(elected)</i>
1999	C.W. Gowdey Distinguished Lecturer, University of Western Ontario
1996	Monbusho Visiting Professorship, Kyushu University, Japan
1994	Queen's University Prize for Excellence in Research <i>(highest university award for research contributions)</i>
1991	Merck-Frosst Award, Pharmacological Society of Canada
1988	Mihran and Mary Basmajian Award for Excellence in Biomedical Research Faculty of Medicine, Queen's University at Kingston
1985-2008	Career Scientist, Ontario Cancer Treatment and Research Foundation <i>(now Cancer Care Ontario)</i> <i>(salary award)</i>
1982	National Cancer Institute of Canada Postdoctoral Fellowship <i>(declined)</i>
1981	Fogarty International Fellowship, National Institutes of Health (USA)
1979	Annual Graduate Student Award, Pharmacological Society of Canada

BOARD MEMBERSHIPS

- Board of Trustees, Queen's University, 2008-2010 *(elected by alumni)*
- Board of Directors, PARTEQ Innovations Inc., Kingston, 1999-2002; 2002-2005; 2005-2006
- Board of Directors, American Association for Cancer Research, 1996-1999 *(elected)*

EDITORIAL POSITIONS

- Editorial Advisory Board, *Molecular Pharmacology*, 2013-2019
- Deputy and Senior Editor, *Molecular Cancer Therapeutics*, 2000-2012
- Editorial Board, *International Journal of Biochemistry and Molecular Biology*, 2010-present
- Editorial Academy, *International Journal of Oncology*, 1996-present
- International Advisory Board, *Tumori*, 1993-present
- Editorial Board, *Journal of Biological Chemistry*, 2002-2007
- Associate Editor, *Cancer Research*, 1999-2002
- Co-editor with I.B. Holland, K. Kuchler and C.F. Higgins. *ABC Proteins: From Bacteria to Man* (Academic Press), 2000-2003 (2003 British Medical Association Competition - Commended in the Basic and Clinical Sciences category)
- Editorial Advisory Board, *Journal of Pharmacology and Experimental Therapeutics*, 1999

CURRENT PROFESSIONAL MEMBERSHIPS

- American Association for Cancer Research (*elected Board of Directors 1996-99; Nominating Committee 2002-04*), 1983-present
- American Society for Biochemistry and Molecular Biology (ASBMB) 1999-present
- American Society for Pharmacology and Experimental Therapeutics (ASPET), 1997-present
- Canadian Academy of Health Sciences (*elected 2011*)
- Canadian Society for Molecular Biosciences (CSMB), 1998-present
- Canadian Society of Pharmacology and Therapeutics (CSPT), 2008-present
- International Transmembrane Transporter Society (ITTS) (*Councillor*), 2014-present
- Royal Society of Canada, Academy of Science (*elected 2000*)

PEER-REVIEWED GRANTS (CURRENT)

Year	Investigator(s)	Grantor	Title
2014-19	• S.P.C. Cole	CIHR	Investigations of the drug and organic anion transporter, MRP1
2014-19	• S.P.C. Cole • T.E. Massey • R. Oleschuk	CFI	Infrastructure Operating Fund
2009-17	• L. Mulligan (PI) et al.	TFRI/ CIHR	The Terry Fox Foundation Training Program in Transdisciplinary Cancer Research

PATENTS & LICENCES

- U.S. Patent No. 5,489,519; Australian Patent No. 671160; Australian Patent No. 682140; Canadian Patent No. 2,147,372; Japanese Patent No. 3,682,926; U.S. Patent No. 5,766,880; U.S. Patent No. 5,882,875; U.S. Patent No. 5,891,724; U.S. Patent No. 6,001,563; U.S. Patent No. 6,025,473; U.S. Patent No. 6,063,021; European Patent No. 0666911B9.
- Licencing agreements: 28 (career total)

GRADUATE STUDENTS SUPERVISED

CAREER TOTALS: 16 MSc, 13 PhD THESES COMPLETED (3 CO-SUPERVISED); 2 IN PROGRESS

(LAST 14 YEARS ONLY)

- 1997-2002 E.M. Leslie - PhD (Pharmacology & Toxicology)
(Ontario Graduate Scholarship 1996, 1998; CIHR Doctoral Award 1999-02; CIHR Postdoctoral Fellowship 2002-05; Davies Charitable Foundation Fellowship 2002)
Thesis: Substrate Specificity and Structure-Function Relationships of Human Multidrug Resistance Protein 1 (MRP1)
[*current position:* Associate Professor (tenured) of Physiology and Laboratory Medicine & Pathology, University of Alberta]
- 2001-2003 D. Situ - MSc (Pathology & Molecular Medicine)
Thesis: Functional Consequences of Charged Amino Acid Substitutions In and Around Transmembrane Helices in the Third Membrane Spanning Domain of MRP1
[*last known position:* Biologist, Health Canada]
- 2002-2004 K.F. Clark - MSc (Pathology & Molecular Medicine) (PhD UPEI)

- Thesis:* Examining the Extracellular Topology of Multidrug Resistance Protein 1 (MRP1): A Substituted Cysteine Accessibility Method
[*current position:* Assistant Professor, Dept. of Biomedical Sciences, Atlantic Veterinary College, Lobster Science Centre UPEI]
- 1998-2004 C.J. Oleschuk - PhD (Pharmacology & Toxicology)
(CIHR Doctoral Award 1998-01; Ontario Graduate Scholarship 2001-02; Clinical Chemistry Fellowship, McMaster University 2004-06)
Thesis: Structure-Function Studies of the Multidrug Resistance Proteins
[*current position:* Scientist, Division of Clinical Biochemistry and Genetics, Health Sciences Centre, Diagnostic Services of Manitoba, Winnipeg]
- 1997-2005 K.E. Weigl - PhD (Pathology & Molecular Medicine)
(McLaughlin Fellowship 2001-03)
Thesis: Biochemical Investigations of MRP1: Analysis of Glycosylation and Topology
[*current position:* Senior Scientist, Biological Safety, Abbott Products GmbH, Hannover, Germany]
- 2004-2006 M. Chan - MSc (Pharmacology & Toxicology)
(Queen's Cancer Research Institute - CIHR Transdisciplinary Training Program in Cancer Research Graduate Award, 2004-06)
Thesis: Mechanisms of Tumour Cell Death Induced by Novel Titanium-based Agents
[*current position:* McKinsey Consulting, USA]
- 2001-2007 I.J. Létourneau - PhD (Pharmacology & Toxicology)
(Frank Carrel Fellowship 2001, 2002; Ontario Graduate Scholarship 2003-04; CIHR Doctoral Award, 2004-07; FRSQ PDF 2009-12)
Thesis: Pharmacogenetic, Functional and Toxicological Studies of the Human Multidrug and Organic Anion Transporters MRP1, MRP2 and MRP3
[*current position:* Associate, Strategic Initiatives, CIHR Institute of Infection and Immunity]
- 2005-2007 C. (Y.M.) Chan - MSc (Pathology & Molecular Medicine)
Thesis: Functional Analysis of Single Nucleotide Polymorphisms in the Proximal Promoter Regions of the Multidrug Transporter Genes MRP1/ABCC1 and MRP4/ABCC4
[*last known position:* Regional Coordinator, VIDO-InterVac, Saskatoon, SK]
- 2004-2008 G. Potter - PhD (Chemistry) (*primary supervisor:* M.C. Baird)
Thesis: A Novel Series of Titanocene Dichloride Derivatives: Synthesis, Characterization and Assessment of Their Cytotoxic Properties
[*current position:* Research Engineer, Borealis AG, Austria]
- 2006-2008 X. Wang - MSc (Pathology & Molecular Medicine)
Thesis: Biochemical Characterization of Nucleotide and Protein Interactions of Human Multidrug Resistance Protein 1 (MRP1/ABCC1)
[*current position:* Scientist, Abmart, Shanghai, PRC]
- 2007-2009 S.V. Molinski - MSc (Pharmacology & Toxicology)
(Eldon Boyd Fellowship 2007-08, 2008-09)
Thesis: Functional Analysis of an α -Helical Region in the Human Multidrug and Organic Anion Transporter MRP1
[*current position:* Application Scientist, Cyclica Inc, Toronto]
- 2005-2011 A.J. Slot - PhD (Pathology & Molecular Medicine)

- (Robert John Wilson Fellowship 2005-07; R.S. McLaughlin Fellowship 2007-2008; CIHR Doctoral Award, 2007-10)
Thesis: Modulation of Human Multidrug Resistance Proteins by Reactive Quinone-based Glutathione Conjugates
 [current position: Scientific Evaluator, Marketed Health Products Directorate, Health Canada, Ottawa]
- 2009-2011 R.L. Myette – MSc (Pathology & Molecular Medicine)
Thesis: Chalcogenopyrylium Dyes as Modulators of Multidrug Resistance Protein (MRP) 1, MRP2 and MRP4 Transport Activities
 [current position: medical resident, Queen’s University]
- 2006-2013 M. Chan - PhD (Pharmacology & Toxicology)
 (Robert John Wilson Fellowship 2006-08; R.S. McLaughlin Fellowship 2008-2009)
Thesis: Studies of the Misprocessing Mutations R1202D and E1204K in the Drug and Organic Anion Transporter, MRP1 (*ABCC1*) in Cultured HEK Cells
 [current position: McKinsey Management Consulting, USA]
- 2009-2015 M.F. Miah – PhD (Pathology & Molecular Medicine)
 (Robert John Wilson Fellowship 2009-11; CIHR Banting and Best Graduate Scholarship 2011-13; Ontario Graduate Scholarship 2010-11)
Thesis: Investigations into the Plasma Membrane Trafficking of Multidrug Resistance Protein 4 (*ABCC4*/MRP4)
 [current position: student]
- 2014-2015 R.A. Millott - MSc (Biomedical & Molecular Sciences) *withdrawn*
 (Ontario Graduate Scholarship 2014-15; CIHR Canada Graduate Scholarship; CFUW Memorial Fellowship 2015-16)
 [current position: graduate student, University of Alberta]
- 2014-2015 M.A. Csandl - MSc (Biomedical & Molecular Sciences)
 (Eldon Boyd Fellowship 2014)
Thesis: Effect of Leukotriene Modifiers (LTMs) on Organic Anion Transport by Multidrug Resistance Proteins (MRPs)
 [current position: optometry school, Oregon, USA]
- 2016- E.E. Smith – MSc (Pathology & Molecular Medicine)
 (R.S. McLaughlin Fellowship 2016-17; Queen’s Graduate Entrance Tuition Award)
- 2016- J. Power – MSc (Pathology & Molecular Medicine)
 (Terry Fox Research Institute Future Leader Studentship 2016-17)

POSTDOCTORAL FELLOWS SUPERVISED**CAREER TOTALS:** 31 COMPLETED (1 CO-SUPERVISED)*(LAST 14 YEARS ONLY)*

- 1997-2002 Q. Mao (PhD, Berne University, Switzerland)
 [current position: Associate Professor (tenured), Dept. of Pharmaceutics, University of Washington, Seattle, WA]
- 2001-2002 C.N. Lok (PhD, Hong Kong University)
 [current position: Research Officer, Dept. of Chemistry, The University of Hong Kong]
- 2001-2002 E. Burns (PhD, University of North Carolina)
 [last known position: Patent agent, Ottawa]
- 2001-2003 K. Koike (MD, PhD, Kyushu University, Japan)

- [*last known position*: Assistant Professor, Japanese Red Cross Fukuoka Hospital, Fukuoka, Japan]
- 2002-2004 C. Moreau (PhD, University of Grenoble, France)
(Fondation pour la Recherche Medicale Fellowship, 2002-03; Cancer Research Society Postdoctoral Fellowship, 2003-04)
[*current position*: Scientist, CNRS Institut de Biologie Structurale, Grenoble, France]
- 2000-2004 A. Haimeur (PhD, Laval University)
(Queen's University Postdoctoral Fellowship, 2000-01 (*declined*); MRC/CIHR Postdoctoral Fellowship, 2000-03)
[*last known position*: Assistant Professor, Centre de recherche en Infectiologie de l'Université Laval]
- 2000-2005 G. Conseil (PhD, Institut de Biologie et Chimie des Protéines, Université Claude Bernard de Lyon, France) (maternity leave 11/04-03/05)
(League Nationale Française Contre le Cancer Fellowship; 2000-01; CIHR Postdoctoral Fellowship, 2001-04; Cancer Research Society Postdoctoral Fellowship, 2001-03 (*declined*))
[*current position*: Research Associate, Queen's University]
- 2003-2006 J.P. Wyles (PhD, Dalhousie University)
(NCIC - Terry Fox Foundation Research Fellowship, 2004-07)
[*last known position*: Secondary school science teacher, BC]
- 2004-2006 P. Wu (PhD, Tianjin University, PRC)
[*current position*: Scientist, Johnson & Johnson Pharmaceutical Research & Development, Raritan, NJ]
- 2004-2006 A. Nakajima (MD, PhD, Kyoto University, Japan)
(George Christian Hoffman Fellowship, 2004-06)
[*last known position*: Assistant Professor, Toyooka Public Hospital, Toyooka, Japan]
- 2004-2007 A.J. Rothnie (PhD, Oxford University, UK)
(CIHR Postdoctoral Fellowship, 2006-07)
[*current position*: Lecturer, Dept. of Biochemistry, Aston University, UK]
- 2006-2008 K. Maeno (MD, PhD, Shinshu University, Japan)
[*current position*: Assistant Professor, Dept. of Surgery (II), Shinshu University, Matsumoto, Japan]
- 2005-2009 Md. T. Hoque (PhD, Tokyo Institute of Technology, Japan)
[*current position*: Senior Research Associate, Faculty of Pharmacy, University of Toronto]
- 2007-2012 S.H. Iram (PhD, University of Illinois at Urbana-Champaign, USA)
[*current position*: Assistant Professor, South Dakota State University, Dept. of Chemistry & Biochemistry, Brookings, SD, USA]
- 2010-2013 Á. Hernández (PhD, Madrid Autonomous University, Spain)
[*current position*: Scientist, CIC biomaGUNE, Spain]
- 2010-2013 Y. Hassan (PhD, University of Nebraska-Lincoln, USA)
[*current position*: Visiting Fellow, Guelph Food Research Centre]
- 2012-2014 C. Gao (PhD, Shanghai Institute of Materia Medica, Shanghai, PRC)
[*current position*: Postdoctoral Fellow, University of Washington, Seattle, WA]
- 2014-2016 M. Joshi (PhD, University of Munich, Germany)
[*current position*: Postdoctoral Fellow, University of Ottawa]
- 2015-2016 M.F. Miah (PhD, Queen's University)

[*current position*: student (Queen's Master of Business Analytics program)]

SUMMER STUDENTS SUPERVISED (LAST 12 YEARS ONLY)

2004	S. Nandra; S. Ikeda
2005	S. Nandra; J. Poh
2006	A. Lau; K. Starr
2007	M.K. DeGorter
2008	L. Hawkins
2014	M. Csandl
2015	E.E. Smith
2017	A. Lauzon

INVITED PRESENTATIONS (LAST 10 YEARS ONLY)

2007

- Royal Society of Canada Kingston Regional Seminar, Queen's University, March 31, 2007.
- Mayo Clinic College of Medicine, Scottsdale, AZ, May 3, 2007.
- National Institute of Environmental Health Sciences (NIEHS), U.S. National Institutes of Health (NIH) Distinguished Lecture Series, Research Triangle Park, NC, September 11, 2007.
- International Meeting on "ABC Transport Proteins in Environmental Health and Toxicology", Siena, Italy, October 20, 2007. (*plenary speaker*)
- Symposium on "Novel Interventions Preventing Treatment Failure", *Making Connections: A Canadian Cancer Research Conference Celebrating NCIC's 60th Anniversary*, Toronto, ON, November 16, 2007. (*CME credit*)
- College of Pharmacy, University of Arizona, Tucson, AZ, November 27, 2007.

2008

- Symposium on "ABC Proteins in Multidrug Resistance and Pharmacology", 2nd FEBS Special Meeting: ATP-Binding Cassette (ABC) Proteins: from Multidrug Resistance to Genetic Diseases, Innsbruck, Austria, March 4, 2008. (*plenary speaker*)
- ASPET Centennial Symposium on "ABC Transporters: From Drug Resistance to Drug Response", Experimental Biology 2008, San Diego, CA, April 8, 2008.
- ASPET Symposium on "Drug Metabolism, Bioactivation and Chemical-induced Toxicities: Lessons Learned and Contemporary Issues", Experimental Biology 2008, San Diego, CA, April 8, 2008.
- Grand Rounds, Department of Clinical Pharmacology, Schulich School of Medicine & Dentistry, University of Western Ontario, London, ON, May 29, 2008. (*CME credit*)
- Pfizer Senior Scientist Award Lecture, CPT2008, Québec City, QC, July 28, 2008.
- Symposium on "Transporters: Relevance to Drug Disposition and Disease", IXth World Conference on Clinical Pharmacology and Therapeutics - CPT2008, Québec City, QC, July 30, 2008.
- Symposium on "Glutathione Transferases", Uppsala University, Uppsala, Sweden, August 21, 2008.

2009

- The 5th Takeda Science Foundation Symposium in PharmaSciences, "Bioactive Lipid Molecules and Transporters", Tokyo, Japan, May 26, 2009.

- Fourth iCeMS International Symposium on Integrated Cell-Material Sciences, “Integrated Physical/Chemical Biology of the Cell: from Genes to Membrane Systems”, Kyoto, Japan, May 28, 2009.
- Membrane Protein Research Group, University of Alberta, Edmonton, AB, October 22, 2009. (*CME credit*)
- Department of Pharmacology and Therapeutics, University of Calgary, Calgary, AB, October 23, 2009.

2010

- 3rd FEBS Special Meeting, “ATP-Binding Cassette (ABC) Proteins: from Multidrug Resistance to Genetic Diseases”, Innsbruck, Austria, March 4, 2010.
- Symposium on “Transporter Biology: Impact on Drug Distribution and Organ Toxicity”, Gordon Research Conference on Drug Metabolism, Holderness, NH, July 15, 2010.
- Symposium on “Multidrug Resistance and Transporters”, Joint Meeting of the Australian Society for Biophysics and Australian Physiological Society, Adelaide, Australia, November 29, 2010
- Children’s Cancer Institute Australia, Sydney, Australia, December 9, 2010

2011

- Visiting Professor Program, Medical University of South Carolina (MUSC) Hollings Cancer Center, Charleston, SC, February 11, 2011
- Symposium on “Frontiers in Epithelial Transport 2011”, Yonsei University, Seoul, Korea, April 15, 2011
- Department of Pharmaceutical Oncology, Kyushu University, Fukuoka, Japan, April 18, 2011
- Institute for Integrated Cell-Material Sciences, Kyoto University, Japan, April 22, 2011

2012

- 4th FEBS Special Meeting, “ATP-Binding Cassette (ABC) Proteins: From Multidrug Resistance to Genetic Diseases”, Innsbruck, Austria, March 8, 2012. (*Final Keynote Address*)
- Institute of Enzymology, Hungarian Academy of Sciences, Budapest, Hungary, May 7, 2012
- Department of Environmental Toxicology, Swiss Federal Institute of Aquatic Science and Technology, Dübendorf, Switzerland, May 9, 2012
- Canadian Medical Hall of Fame TD Discovery Day in Health Sciences, Queen’s University, Kingston, May 16, 2012 (*Keynote Speaker*)

2013

- Department of Pharmaceutics, School of Pharmacy, University of Washington, Seattle, WA, June 27, 2013
- European Union Conference “Role of MDR Proteins in Pharmacokinetics and Toxicology”, Ryn, Poland, September 3, 2013 (*Opening Lecture*)
- 6th Annual SFB35 Symposium “Transmembrane Transporters in Health and Disease”, Vienna, Austria, September 23, 2013
- College of Pharmacy, Jinan University, Guangzhou, PRC, November 11, 2013
- First Affiliated Hospital, Jinan University, Guangzhou, PRC, November 12, 2013

2014

- University of Lodz, Poland, September 12, 2014
- Jinan University Clinical Medical Research Institute, Guangzhou, PRC, November 5, 2014

2015

- 6th Annual Hogarty Family Foundation Lecture, University at Albany Cancer Research Center, Albany, NY, March 26, 2015
- Department of Biomedical Sciences, University at Albany SUNY, NY, March 27, 2015
- Conference on Tumor Multidrug Resistance, College of Pharmacy, Jinan University, Guangzhou, PRC, November 7, 2015
- Department of Physiology, McGill University, Montréal, QC, December 4, 2015

2016

- Advanced Medical Research Institute of Canada, Northeast Cancer Centre – Health Sciences North, Sudbury, ON, May 9, 2016
- Symposium: Celebrating 30 Years of Research on Multidrug Resistance and ABC Drug Transporters, September 23, 2016
- Symposium: Pharmacology of ABC Transporters, College of Pharmacy, Jinan University, Guangzhou, PRC, November, 2016

2017

- Gordon Research Conference on Multidrug Efflux Systems, Galveston, TX, March 26, 2017
Keynote Speaker
- John Austin Society, Kingston, ON, January 19, 2017
- Saturday Club, Queen's University, Kingston, ON, May 2, 2017

COMMITTEES – ACADEMIC (LAST 10 YEARS ONLY):***External:***

- Member, External Advisory Board, Roswell Park Cancer Institute (RPCI), Buffalo, NY, 2004-09
- Member, National Cancer Institute of Canada (NCIC) Awards of Excellence Selection Committee, 2006, 2007, 2008
- Member, Flavelle Medal Committee, Royal Society of Canada, 2007-08, 2010
- Member, International Affairs Committee, American Association for Cancer Research, 2007-10
- Member, Scientific Committee, 20th EORTC-NCI-AACR Symposium on “Molecular Targets and Cancer Therapeutics”, 2008
- Member, Awards Committee, Canadian Society of Pharmacology & Therapeutics, 2008-10
- Member, Gairdner Foundation Medical Review Panel, 2009-10
- Member, Fellowships – Post-PhD Committee, Canadian Institutes of Health Research (CIHR), 2009-10
- Member, Terry Fox Research Institute Program Project Grant Steering Committee on Research Excellence (PPG SCORE), 2013-
- Member, Expert Panel, European Union Project, “Role of multidrug transporters in pharmacokinetics and toxicology – in vitro tests in pharmaceutical and clinical practice”, Ryn, Poland, September 2-3, 2013
- Councillor, International Transmembrane Transporter Society (ITTS), 2014
- Member, AACR Outstanding Achievement in Chemistry in Cancer Research Award Selection Committee, 2015-17

University/Faculty:

- Member, Queen's University Senate, 2002-05 (*elected*); 2005-08 (*elected*)

- Member, Committee on Government and Community Relations, Council of Ontario Universities, 2005-06
- Member, Queen's University Senate Committee on Academic Development, 2005-08
- Member, Council of Ontario Universities (COU), Academic Colleague for Queen's University, 2005-08 (*elected*)
- Member, David Smith Award Selection Committee, Council of Ontario Universities, 2006
- Member, Queen's University Senate Internal Academic Review Committee, 2007-08.
- Member, Queen's University Board of Trustees, 2008-10 (*elected by alumni*)
- Member, Executive Committee, Queen's University Mass Spectrometry and Proteomics Unit, 2011
- Member, Principal's Advisory Selection Committee for the Provost and Vice-Principal (Academic), 2015

Departmental/Institute:

- Member, Queen's University Cancer Research Institute Management Committee, 2009-present
- Member, Curriculum Review Working Group, Department of Pathology & Molecular Medicine, 2006-10
- Member, Research Advisory Committee, Department of Pathology & Molecular Medicine, 2009-13
- Member, Graduate Studies Committee, Department of Pathology & Molecular Medicine, 2005-10; 2016-

Academic Administration (as Deputy Provost) (partial list):

- Chair, Senate Committee on Academic Development (SCAD), 2010-12
- Chair, Senate Internal Academic Review (IARC) Committee, 2010-12
- Chair, University Teaching Space Committee, 2010-11
- Chair, Queen's University Chair in Teaching and Learning Selection Committee, 2010-11
- Chair, Selection Committee for the Baillie Awards for Excellence in Secondary School Teaching, 2010-11
- Chair, Provost's Advisory Committee for the Review of University Archivist, 2011
- Member, Advisory Board, Agnes Etherington Art Centre, 2010-12
- Member, Queen's University Accessibility Committee (*delegated*), 2010-12
- Member, Provost's Enrolment Planning Task Force, 2010-12
- Member, Retirees' Association of Queen's-Academic Partnership Committee, 2010-12
- Member, Queen's University Research Chairs Executive Committee, 2010-12
- Member, Board of Directors, and Finance and Audit Committee, McGill-Queen's University Press, 2010-12
- Member, Search Committee for Chief Information Officer, 2011
- Member, Sub-committee of the Joint Committee on the Administration of the Agreements (JCAA) to administer the fund for Scholarly Research and Creative Works and Professional Development, 2011-12
- Chair, Senate Cyclical Program Review Committee, 2011-12
- Chair, Provost's Advisory Committee for the Review of the Director, Agnes Etherington Art Centre, 2012

- Member, Vice-Principal (Research) Advisory Committee for the Review of the Associate Vice-Principal (Research Operations), 2012
- Chair, Provost's Working Group on Diplomas and Certificates, 2012

REVIEWER FOR GRANTING AGENCIES (PARTIAL LIST)

Biotechnology and Biological Sciences Research Council (UK)	Medical Research Council of Canada
Canadian Institutes of Health Research	National Cancer Institute of Canada
Canada Research Chair Program	National Institutes of Health (National Cancer Institute, USA)
Cancer Research UK	Natural Sciences and Engineering Research Council
Clare Nelson Bequest, KGH	Prostate Cancer Fight Foundation
Dutch Cancer Society	Terry Fox Research Institute
Israel Science Foundation	

REFEREE FOR JOURNALS (PARTIAL LIST)

Biochemical Pharmacology	Journal of Experimental Medicine
Biochemistry and Cell Biology	Journal of the National Cancer Institute
Biochimica Biophysica Acta	Journal of Pharmacology and Experimental Therapeutics
British Journal of Cancer	Leukemia Research
British Journal of Pharmacology	Molecular Biology of the Cell
Cancer Chemotherapy and Pharmacology	Molecular Cancer Therapeutics
Cancer Research	Molecular Membrane Biology
Chemical Research in Toxicology	Molecular Microbiology
Clinical Cancer Research	Molecular Pharmacology
Drug Metabolism and Disposition	Pharmacogenetics
European Journal of Biochemistry	Pharmacogenetics Genomics
European Journal of Cancer and Clinical Oncology	Proceedings of the National Academy of Sciences (USA)
European Journal of Pharmaceutical Sciences	Science
FEBS Journal	Toxicological Sciences
International Journal of Cancer	Toxicology
Journal of Biological Chemistry	Trends in Pharmacological Sciences
Journal of Clinical Investigation	

OTHER

- Listed in *Canadian WHO'S WHO*, University of Toronto Press (since 1994)
- Listed in *WHO's WHO of Canadian Women*
- WHMIS Training, Queen's University
- Equity Training and Familiarization Workshop, Queen's University, September 1997
- Continuing Medical Education, Power Point Presentations, Queen's University, April 17, 2002
- Canadians for Health Research, Researcher of the Week, February 16, 2005
- (www.chrcrm.org/profile_susan_cole_que.htm)
- Faculty Development Creative Writing Workshop, Queen's University, October 16, 2013

- Profiled in American Society of Pharmacology & Experimental Therapeutics, ASPET Members Achieve!, September 2013 (<http://www.aspet.org/DrugMetabolism/aspet-members-achieve/susan-cole/>)

PUBLICATIONS: Career Total: 233

H-INDEX = 66; >18,690 CITATIONS; 44 PAPERS CITED >100 TIMES [AUGUST 2015]

(names of student and postdoctoral trainees are underlined)

1. C. Pace-Asciak and **S. Cole**. Inhibitors of prostaglandin catabolism. I. Differential sensitivity of 9-PGDH, 13-PGR and 15-PGDH to low concentrations of indomethacin. *Experientia* 31: 143-145 (1975).
2. **S.P.C. Cole**, E.J. Vavasour and G.S. Marks. Drug-induced porphyrin biosynthesis. XIX. Potentiation of the porphyrin-inducing effects of SKF 525-A in the chick embryo liver by 3,5-diethoxycarbonyl-1,4-dihydro-2,4,6-trimethylpyridine, an inhibitor of ferrochelatase. *Biochem. Pharmacol.* 28: 3533-3538 (1979).
3. **S.P.C. Cole** and G.S. Marks. Structural requirements in dihydropyridines for ferrochelatase inhibition and δ -aminolevulinic acid synthetase induction. *Int. J. Biochem.* 12: 989-992 (1980).
4. P.R. Ortiz de Montellano, K.L. Kunze, **S.P.C. Cole** and G.S. Marks. Inhibition of hepatic ferrochelatase by the four isomers of *N*-methylprotoporphyrin IX. *Biochem. Biophys. Res. Commun.* 97: 1436-1442 (1980).
5. **S.P.C. Cole**, D.T. Zelt and G.S. Marks. Comparison of the effects of griseofulvin and 3, 5-diethoxycarbonyl-1,4-dihydro-2,4,6-trimethylpyridine on ferrochelatase activity in the chick embryo liver. *Mol. Pharmacol.* 19: 477-480 (1981).
6. **S.P.C. Cole**, R.A. Whitney and G.S. Marks. Ferrochelatase-inhibitory and porphyrin-inducing properties of 3,5-diethoxycarbonyl-1,4-dihydro-2,4,6-trimethylpyridine and its analogues in chick embryo liver cells. *Mol. Pharmacol.* 20: 395-403 (1981).
7. **S.P.C. Cole**, T.E. Massey, G.S. Marks and W.J. Racz. Effects of porphyrin-inducing drugs on ferrochelatase activity in isolated mouse hepatocytes. *Can. J. Physiol. Pharmacol.* 59: 1155-1158 (1981).
8. P.R. Ortiz de Montellano, K.L. Kunze, **S.P.C. Cole** and G.S. Marks. Differential inhibition of hepatic ferrochelatase by the isomers of *N*-ethylprotoporphyrin IX. *Biochem. Biophys. Res. Commun.* 103: 581-586 (1981).
9. **S.P.C. Cole**, G.S. Marks, P.R. Ortiz de Montellano and K.L. Kunze. Inhibition of ferrochelatase by *N*-methylprotoporphyrin IX is not accompanied by δ -aminolevulinic acid synthetase induction in chick embryo liver cell culture. *Can. J. Physiol. Pharmacol.* 60: 212-215 (1982).
10. G.S. Marks, D.T. Zelt and **S.P.C. Cole**. Alterations in the heme biosynthetic pathway as an index of exposure to toxins. *Can. J. Physiol. Pharmacol.* 60: 1017-1026 (1982).
11. **S.P.C. Cole** and G.S. Marks. A radiochemical assay for heme synthase activity; confirmation and supplement. *Enzyme* 28: 231-232 (1982).
12. G.S. Marks, S.B. Follows, D.T. Zelt and **S.P.C. Cole**. Patterns of porphyrin accumulation in response to chemicals in chick embryo liver cells. *Can. J. Physiol. Pharmacol.* 61: 546-553 (1983).
13. **S.P.C. Cole**, B.G. Campling, T. Atlaw, D. Kozbor and J.C. Roder. Human monoclonal antibodies. *Molec. Cell. Biochem.* 62: 109-120 (1984).

14. **S.P.C. Cole**, B.G. Campling, I.H. Louwman, D. Kozbor and J.C. Roder. A strategy for the production of human monoclonal antibodies reactive with lung tumor cells. *Cancer Res.* 44: 2750-2753 (1984).
15. **S.P.C. Cole** and G.S. Marks. Ferrochelatase and *N*-alkylated porphyrins. *Molec. Cell. Biochem.* 64: 127-137 (1984).
16. **S.P.C. Cole**, E.H. Vreeken and J.C. Roder. Antibody production by human x human hybridomas in serum-free medium. *J. Immunol. Meth.* 78: 271-278 (1985).
17. J.C. Roder, D. Kozbor, **S.P.C. Cole**, T. Atlaw, B.G. Campling and R.C. McGarry. The EBV-hybridoma technique. In, *Human Hybridomas and Monoclonal Antibodies* (eds. E.G. Engleman, S. Fountg, J. Larrick, A. Raubitschek), Ch. 4, pp. 55-70, Plenum Press, New York, NY, 1985.
18. **S.P.C. Cole**, S. Mirski, R.C. McGarry, R. Cheng, B.G. Campling and J.C. Roder. Differential expression of Leu-7 antigen on human lung tumor cells. *Cancer Res.* 45: 4285-4290 (1985).
19. **S.P.C. Cole**, D. Kozbor and J.C. Roder. Strategies for production of human monoclonal antibodies. In, *Hybridoma Technology in the Biosciences and Medicine* (ed. T.A. Springer), Ch. 2, pp. 43-55, Plenum Press, New York, NY, 1985.
20. D. Kozbor, W. Abramow-Newerly, P. Tripputi, **S.P.C. Cole**, J. Weibel, J.C. Roder and C.M. Croce. Specific immunoglobulin production and enhanced tumorigenicity following ascites growth of human hybridomas. *J. Immunol. Meth.* 81: 31-42 (1985).
21. **S.P.C. Cole**, D. Kozbor and J.C. Roder. The EBV-hybridoma technique and its application to human lung cancer. In, *Monoclonal Antibodies and Cancer Therapy* (Vol. 27, UCLA Symposia on Molecular and Cellular Biology, New Series) (eds. R.A. Reisfeld and S.Sell), pp. 77-96, Alan R. Liss, Inc. New York, NY, 1985.
22. A.C. Peacock, S.L. Bunting, **S.P.C. Cole** and M. Seidman. Two dimensional electrophoretic display of restriction fragments from genomic DNA. *Analyt. Biochem.* 149: 177-182 (1985).
23. **S.P.C. Cole**, B.G. Campling, D.F. Dexter, J.J.A. Holden and J.C. Roder. Establishment of a human large cell lung tumor line (QU-DB) with metastatic properties in athymic mice. *Cancer* 58: 917-923 (1986).
24. J.C. Roder, **S.P.C. Cole** and D. Kozbor. The EBV-hybridoma technique. In, *Immunochemical Techniques* (eds. J.J. Langone and H. Van Vunakis), *Meth. Enzymol.* 121: 140-167, Academic Press, New York, NY, 1986.
25. D. Kozbor, J.C. Roder, M.E. Sierzega, **S.P.C. Cole** and C.M. Croce. Comparative phenotypic analysis of available hybridoma fusion partners. In, *Immunochemical Techniques* (eds. J.J. Langone and H. Van Vunakis), *Meth. Enzymol.* 121: 120-140, Academic Press, New York, NY, 1986.
26. **S.P.C. Cole**. Rapid chemosensitivity testing of human lung tumor cells using the MTT assay. *Cancer Chemother. Pharmacol.* 17: 259-263 (1986).
27. P.G. Forkert, M.L. Vessey, J.S. Elce, S.S. Park, H.V. Gelboin and **S.P.C. Cole**. Localization of phenobarbital- and 3-methylcholanthrene- inducible cytochromes P-450 in mouse lung with monoclonal antibodies. *Res. Commun. Chem. Pathol. Pharm.* 53: 147-157 (1986).
28. B.G. Campling, **S.P.C. Cole**, T. Atlaw, D. Kozbor and J.C. Roder. The EBV-hybridoma technique and its applications. In, *Human Hybridomas: Diagnostic and Therapeutic Applications* (ed. A.J. Strelkauskas), Ch. 1, pp. 3-22, Marcel-Dekker, New York, NY, 1986.

29. B.G. Campling, **S.P.C. Cole**, T. Atlaw, D. Kozbor and J.C. Roder. Practical aspects of human-human hybridomas. In, *Monoclonal Antibodies: Production, Techniques and Applications* (ed. L.B. Schook), Ch. 1, pp. 3-23, Marcel-Dekker, New York, NY, 1987.
30. **S.P.C. Cole**. Monoclonal antibodies. *Can. Fam. Physician* 33: 369-372 (1987).
31. **S.P.C. Cole**, E.H. Vreeken, S.E.L. Mirski and B.G. Campling. Growth of human x human hybridomas in protein-free medium supplemented with ethanolamine. *J. Immunol. Meth.* 97: 29-35 (1987).
32. S.E.L. Mirski, J.H. Gerlach and **S.P.C. Cole**. Multidrug resistance in a human small cell lung cancer cell line selected in adriamycin. *Cancer Res.* 47: 2594-2598 (1987).
33. J.M. Trent, P.S. Meltzer, M.L. Slovak, A.B. Hill, W.S. Dalton, W.T. Beck and **S.P.C. Cole**. Cytogenetic and molecular biologic alterations associated with anthracycline resistance. In, *Mechanisms of Drug Resistance in Neoplastic Cells* (eds. P.V. Woolley and K.D. Tew), Vol. 9, Ch. 17, pp. 259-276, Academic Press, New York, NY, 1988.
34. B.G. Campling, J. Pym, P.R. Galbraith and **S.P.C. Cole**. Use of the MTT assay for rapid determination of chemosensitivity of human leukemic blast cells. *Leukemia Res.* 12: 823-831 (1988).
35. **S.P.C. Cole**, H.F. Downes and M.L. Slovak. Effect of calcium antagonists on the chemosensitivity of two multidrug resistant human tumour cell lines which do not overexpress P-glycoprotein. *Br. J. Cancer* 59: 42-46 (1989).
36. P.G. Forkert, M.L. Vessey, S.S. Park, H.V. Gelboin and **S.P.C. Cole**. Cytochromes P-450 in murine lung: an immunohistochemical study with monoclonal antibodies. *Drug Metab. Dispos.* 17: 551-555 (1989).
37. S.E.L. Mirski and **S.P.C. Cole**. Antigens associated with multidrug resistance in H69AR, a small cell lung cancer cell line. *Cancer Res.* 49: 5719-5724 (1989).
38. **S.P.C. Cole**, H.F. Downes, S.E.L. Mirski and D.R. Clements. Alterations in glutathione and glutathione-related enzymes in a multidrug resistant small cell lung cancer cell line. *Mol. Pharmacol.* 37: 192-197 (1990).
39. **S.P.C. Cole**, S.A. Mohamdee and S.E.L. Mirski. A monoclonal antibody detecting a cell surface epitope on some drug resistant human tumour cell lines. *Br. J. Cancer* 62: 14-16 (1990).
40. **S.P.C. Cole**. Patterns of cross-resistance in a multidrug resistant small cell lung carcinoma cell line. *Cancer Chemother. Pharmacol.* 26: 250-256 (1990).
41. **S.P.C. Cole**. The legacy of Terry Fox. *Queen's Quarterly* 97: 253-276 (1990).
42. B.G. Campling, J. Pym, H. Baker, **S.P.C. Cole** and M. Lam. Chemosensitivity testing of small cell lung cancer using the MTT assay. *Br. J. Cancer* 63: 75-83 (1991).
43. **S.P.C. Cole**, B.M.T. Campigotto, J.G. Johnson and B.E. Elliott. Differential growth inhibition and enhancement of major histocompatibility complex class I antigen expression by interferons in a small cell lung cancer cell line and its doxorubicin-selected multidrug-resistant variant. *Cancer Immunol. Immunother.* 33: 274-277 (1991).
44. **S.P.C. Cole**, E.R. Chanda, F.P. Dicke, J.H. Gerlach and S.E.L. Mirski. Non-P-glycoprotein-mediated multidrug resistance in a small cell lung cancer cell line: evidence for decreased susceptibility to drug-induced DNA damage and reduced levels of topoisomerase II. *Cancer Res.* 51: 3345-3352 (1991).
45. S.E.L. Mirski and **S.P.C. Cole**. Multidrug resistance-associated antigens on drug-sensitive and -resistant human tumour cell lines. *Br. J. Cancer* 64: 15-22 (1991).

46. M.L. Slovak, S.E.L. Mirski, **S.P.C. Cole**, J.H. Gerlach, K.H. Yochem and J.M. Trent. Tumorigenic multidrug resistant HT1080 cells do not overexpress receptors for epidermal growth factor. *Br. J. Cancer* 64: 296-298 (1991).
47. **S.P.C. Cole**. The Merck-Frosst Award. Multidrug resistance in small cell lung cancer. *Can. J. Physiol. Pharmacol.* 70: 313-329 (1992). (*invited and peer-reviewed*).
48. **S.P.C. Cole**^{||}, M.J. Pinkoski, G. Bhardwaj and R.G. Deeley. Elevated expression of annexin II (lipocortin II, p36) in a multidrug resistant small cell lung cancer cell line. *Br. J. Cancer* 65: 498-502 (1992).
^{||}*corresponding senior author*
49. **S.P.C. Cole**. Drug resistance and lung cancer. In, *Cancer: Concept to Clinic* (ed. J. Wood), Vol. 1, pp. 15-21, Medical Publishing Enterprises, Fairlawn, NJ (1992). (*invited*)
50. B. Savas, **S.P.C. Cole**, T.F. Akoglu and H.F. Pross. P-glycoprotein-mediated multidrug resistance and cytotoxic effector cells. *Nat. Immun.* 11: 177-192 (1992).
51. J.E. Gervasoni, Jr., R.N. Taub, M.T. Yu, D. Warburton, M. Sabbath, D.L. Coppock, J. D'Alessandri, S. Krishna, M. Rosado, M.A. Baker, J. Lutzky, E.R. Chanda, J.H. Gerlach, M.J. Pinkoski, **S.P.C. Cole** and A.A. Hindenburg. Homogeneously staining region in anthracycline-resistant HL-60/AR cells not associated with MDR1 amplification. *Cancer Res.* 52: 5244-5249 (1992).
52. **S.P.C. Cole**, G. Bhardwaj, J.H. Gerlach, J.E. Mackie, C.E. Grant, K.C. Almquist, A.J. Stewart, E.U. Kurz, A.M.V. Duncan and R.G. Deeley. Overexpression of a transporter gene in a multidrug resistant human lung cancer cell line. *Science* 258: 1650-1654 (1992). *2540 citations-12/2014. S.P.C. Cole and R.G. Deeley. Multidrug resistance-associated protein: sequence correction. *Science* 260: 879 (1993).
53. K.A. Krebes, S.E.L. Mirski, H.F. Pross and **S.P.C. Cole**. Peripheral blood mononuclear cells express antigens associated with multidrug resistance in a small cell lung cancer cell line. *Anticancer Res.* 13: 317-322 (1993).
54. B.G. Campling, K.A. Baer, H.M. Baker, Y.-M. Lam and **S.P.C. Cole**. Do glutathione and related enzymes play a role in drug resistance in small cell lung cancer? *Br. J. Cancer* 68: 327-335 (1993).
55. M.L. Slovak, J.P. Ho, G. Bhardwaj, E.U. Kurz, R.G. Deeley and **S.P.C. Cole**. Localization of a novel multidrug resistance-associated gene in the HT1080/DR4 and H69AR human tumor cell lines. *Cancer Res.* 53: 3221-3225 (1993).
56. J. Jirsch, R.G. Deeley, **S.P.C. Cole**, A.J. Stewart and D. Fedida. Inwardly rectifying K⁺ channels and volume-regulated anion channels in multidrug resistant small cell lung cancer cells. *Cancer Res.* 53: 4156-4160 (1993).
57. S.E.L. Mirski, C.D. Evans, K.C. Almquist, M.L. Slovak and **S.P.C. Cole**. Altered topoisomerase II α in a drug resistant small cell lung cancer cell line selected in VP-16. *Cancer Res.* 53: 4866-4873 (1993).
58. C.E. Grant, G. Valdimarsson, D.R. Hipfner, K.C. Almquist, **S.P.C. Cole** and R.G. Deeley. Overexpression of multidrug resistance-associated protein (MRP) increases resistance to natural product drugs. *Cancer Res.* 54: 357-361 (1994).
59. P.W. Feldhoff, S.E.L. Mirski, **S.P.C. Cole** and D.M.M. Sullivan. Altered subcellular distribution of topoisomerase II α in a drug resistant human small cell lung cancer cell line. *Cancer Res.* 54: 756-762 (1994).

60. J.R. Zalcberg, X.F. Hu, D.M. Wall, S. Mirski, **S. Cole**, G. Nadalin, M.D. Luise, J.D. Parkin, V. Vrazas, L. Campbell and P. Kantharidis. Cellular and karyotypic characterization of two doxorubicin resistant cell lines isolated from the same parental human leukemia cell line. *Int. J. Cancer* 57: 522-528 (1994).
61. B.J. Kuss, R.G. Deeley, **S.P.C. Cole**, C.L. Willman, K.J. Kopecky, S.R. Wolman, H.J. Eyre, S.A. Lane, J.K. Nancarrow, S.A. Whitmore and D.F. Callen. Deletion of gene for multidrug resistance in acute myeloid leukaemia with inversion in chromosome 16: prognostic implications. *Lancet* 343: 1531-1534 (1994).
62. C.D. Evans, S.E.L. Mirski, M.K. Danks and **S.P.C. Cole**. Reduced levels of topoisomerase II α and β in a multidrug resistant lung cancer cell line. *Cancer Chemother. Pharmacol.* 34: 242-248 (1994).
63. J.D. Jirsch, D.W. Loe, **S.P.C. Cole**, R.G. Deeley and D. Fedida. ATP is not required for anion current activated by cell swelling in multidrug-resistant lung cancer cells. *Amer. J. Physiol.* 267: 688-699 (1994).
64. **S.P.C. Cole**^{||}, K.E. Sparks, K. Fraser, D.W. Loe, C.E. Grant, G.M. Wilson and R.G. Deeley. Pharmacological characterization of multidrug resistant MRP-transfected human tumor cells. *Cancer Res.* 54: 5902-5910 (1994). ^{||}corresponding senior author
65. I. Leier, G. Jedlitschky, U. Buchholz, **S.P.C. Cole**, R.G. Deeley and D. Keppler. The MRP gene encodes an ATP-dependent export pump for leukotriene C₄ and structurally related conjugates. *J. Biol. Chem.* 269: 27807-27810 (1994).
66. D.R. Hipfner, S.D. Gauldie, R.G. Deeley and **S.P.C. Cole**. Detection of the M_r 190,000 multidrug resistance protein, MRP, with monoclonal antibodies. *Cancer Res.* 54: 5788-5792 (1994).
67. T. Sumizawa, Y. Chuman, H. Sakamoto, K. Iemura, K.C. Almquist, R.G. Deeley, **S.P.C. Cole** and S.-i. Akiyama. Non-P-glycoprotein-mediated multidrug resistant human KB cells selected in medium containing Adriamycin, cepharanthine and mezerein. *Somat. Cell Mol. Genet.* 20: 423-435 (1994).
68. K.C. Almquist, D.W. Loe, D.R. Hipfner, J.E. Mackie, **S.P.C. Cole**^{||} and R.G. Deeley. Characterization of the M_r 190,000 multidrug resistance protein (MRP) in drug-selected and transfected human tumor cells. *Cancer Res.* 55: 102-110 (1995). ^{||}corresponding senior author
69. I. Brock, D.R. Hipfner, B.E. Nielsen, P.B. Jensen, R.G. Deeley, **S.P.C. Cole** and M. Sehested. Sequential co-expression of the multidrug resistance genes, MRP and mdrl and their products in VP-16 (etoposide) selected H69 small cell lung cancer cells. *Cancer Res.* 55: 459-462 (1995).
70. S.E.L. Mirski and **S.P.C. Cole**. Cytoplasmic localization of a mutant M_r 160,000 topoisomerase II α is associated with the loss of putative bipartite nuclear localization signals in a drug resistant human lung cancer cell line. *Cancer Res.* 55: 2129-2134 (1995).
71. S. Hasegawa, T. Abe, S. Naito, S. Kotoh, J. Kumazawa, D.R. Hipfner, R.G. Deeley, **S.P.C. Cole** and M. Kuwano. Expression of multidrug resistance-associated protein (MRP), MDR1 and DNA topoisomerase II in human multidrug resistant bladder cancer cell lines. *Br. J. Cancer* 71: 907-913 (1995).
72. J.R. Dimmock, P. Kumar, J.W. Quail, U. Pugazhenthii, J. Yang, M. Chen, R.S. Reid, T.M. Allen, G.Y. Kao, **S.P.C. Cole**, G. Batist, J. Balzarini and E. De Clercq. Synthesis and cytotoxic evaluation of some styryl ketones and related compounds. *Eur. J. Med. Chem.* 30: 209-217 (1995).
73. M.L. Slovak, J.P. Ho, **S.P.C. Cole**, R.G. Deeley, L. Greenberger, E.G.E. deVries, H.J. Broxterman, G.L. Scheffer and R.J. Scheper. The LRP gene encoding a major vault protein associated with drug resistance maps proximal to MRP on chromosome 16: evidence that chromosome breakage plays a key role in MRP or LRP gene amplification. *Cancer Res.* 55: 4214-4219 (1995).

74. B.J. Kuss, R.G. Deeley, **S.P.C. Cole**, C.L. Willman, K.J. Kopecky, S.R. Wolman, H.I. Eyre and D.F. Callen. The biological significance of the multidrug resistance gene *MRP* in inversion 16 leukaemias. *Leuk. Lymph.* 20: 357-364 (1996). (*invited*)
75. D.D. Ross, L.A. Doyle, C.A. Schiffer, E.J. Lee, C.E. Grant, **S.P.C. Cole**, R.G. Deeley, W. Yang and Y. Tong. Expression of multidrug resistance-associated protein (MRP) mRNA in blast cells from acute myeloid leukemia (AML) patients. *Leukemia* 10: 48-55 (1996). **45 citations-11/2011*
76. I. Leier, G. Jedlitschky, U. Buchholz, M. Center, **S.P.C. Cole**, R.G. Deeley and D. Keppler. ATP-dependent glutathione disulfide transport mediated by the MRP gene-encoded conjugate export pump. *Biochem. J.* 34: 433-437 (1996).
77. **S.P.C. Cole**. Multidrug resistance in human lung cancer and topoisomerase II. In, *Lung Cancer: Principles and Practice* (eds. H.I. Pass, J.B. Mitchell, D.H. Johnson and A.T. Turrisi). Ch. 12, pp. 169-204, Lippincott-Raven, Philadelphia, PA (1996). (*invited*)
78. A.J. Stewart, Y. Canitrot, E. Baracchini, N.M. Dean, R.G. Deeley and **S.P.C. Cole**. Reduction in expression of the multidrug resistance protein, MRP, in human tumour cells by antisense phosphorothioate oligonucleotides. *Biochem. Pharmacol.* 51: 461-469 (1996).
79. D.W. Loe, K.C. Almquist, R.G. Deeley and **S.P.C. Cole**. Multidrug resistance protein (MRP)-mediated transport of leukotriene C₄ and chemotherapeutic agents in membrane vesicles: demonstration of glutathione-dependent vincristine transport. *J. Biol. Chem.* 271: 9675-9682 (1996).
80. D.W. Loe, K.C. Almquist, **S.P.C. Cole** and R.G. Deeley. ATP-dependent 17 β -estradiol 17-(β -D-glucuronide) transport by multidrug resistance protein (MRP): inhibition by cholestatic steroids. *J. Biol. Chem.* 271: 9683-9689 (1996).
81. D.W. Loe, R.G. Deeley and **S.P.C. Cole**. Biology of drug resistance associated with overexpression of the multidrug resistance protein, MRP. *Eur. J. Cancer* 32A: 945-957 (1996) (*invited, peer-reviewed*).
82. B.D. Stride, G. Valdimarsson, J.H. Gerlach, G.M. Wilson, **S.P.C. Cole** and R.G. Deeley. Structure and expression of the mRNA encoding the murine multidrug resistance protein (MRP), an ATP-binding cassette transporter. *Mol. Pharmacol.* 49: 962-971 (1996).
83. **S.P.C. Cole** and R.G. Deeley. Multidrug resistance associated with overexpression of MRP. In, *Drug Resistance* (ed. W.N. Hait). Ch. 2, pp. 39-62, Kluwer Academic Press, Norwell, MA (1996). [*Cancer Treat Res.* 87: 39-62, 1996] (*invited*).
84. D.R. Hipfner, K.C. Almquist, B.D. Stride, R.G. Deeley and **S.P.C. Cole**. Location of a protease-hypersensitive region in the multidrug resistance protein (MRP) by mapping of the epitope of MRP-specific monoclonal antibody QCRL-1. *Cancer Res.* 56: 3307-3314 (1996).
85. D. Lautier, Y. Canitrot, R.G. Deeley and **S.P.C. Cole**. Multidrug resistance mediated by the multidrug resistance protein (*MRP*) gene. *Biochem. Pharmacol.* 52: 967-977 (1996). (*among top 1% articles cited in Biochem. Pharmacol. 1996-2006*)
86. M. Gao, D.W. Loe, C.E. Grant, **S.P.C. Cole** and R.G. Deeley. Reconstitution of ATP-dependent LTC₄ transport by co-expression of both half-molecules of human MRP in insect Sf21 cells. *J. Biol. Chem.* 271: 27782-27787 (1996).
87. Y. Canitrot, I. Neverova, A.J. Stewart, N.M. Dean, C.F. Bennett, R.G. Deeley and **S.P.C. Cole**. MRP-associated multidrug resistance and its reversal by 2'-modified antisense oligonucleotides. *Anti-Cancer Drugs* 7 (suppl 3): 93-99 (1996).

88. B. Savas, **S.P.C. Cole**, T. Tsuruo and H.F. Pross. P-glycoprotein-mediated multidrug resistance and lymphokine-activated killer cell susceptibility in ovarian carcinoma. *J. Clin. Immunol.* 16: 348-357 (1996).
89. B.G. Campling, L.C. Young, K.A. Baer, Y-M Lam, R.G. Deeley, **S.P.C. Cole** and J.H. Gerlach. Expression of the *MRP* and *MDR1* multidrug resistance genes in small cell lung cancer. *Clin. Cancer Res.* 3: 115-122 (1997).
90. R.G. Deeley and **S.P.C. Cole**. Multidrug resistance in mammalian cells mediated by members of the ATP-binding cassette superfamily: The P-glycoproteins and MRP. In, *Molecular Genetics of Drug Resistance, Modern Genetics*, Vol. 3, (eds. J.D. Hayes and C.R. Wolf), Ch. 7, pp. 247-298, Harwood Academic, Langhorne, PA. (1997). (*invited*)
91. S.E.L. Mirski and **S.P.C. Cole**. Multidrug resistance in small cell lung cancer. In, *Drug Resistance in Oncology* (ed. S.D. Bernal), Ch. 2, pp. 27-75, Marcel Dekker, New York, NY. (1997). (*invited*)
92. M. Nakagawa, A. Emoto, N. Nasu, T. Hanada, M. Kuwano, **S.P.C. Cole** and Y. Nomura. Clinical significance of multi-drug resistant associated protein and P-glycoprotein in patients with bladder cancer. *J. Urol.* 157: 1260-1265 (1997).
93. B.G. Campling, K.A. Baer, J.H. Gerlach, Y-M. Lam, **S.P.C. Cole** and S.E.L. Mirski. Topoisomerase II levels and drug response in small cell lung cancer. *Int. J. Oncol.* 10: 885-893 (1997).
94. Q. Yu, S.E.L. Mirski, K.E. Sparks and **S.P.C. Cole**. Two COOH-terminal truncated cytoplasmic mutant forms of topoisomerase II α in a VP-16-selected lung cancer cell line result from partial gene deletion and alternative splicing. *Biochemistry* 36: 5868-5877 (1997).
95. D.W. Loe, R.K. Stewart, T.E. Massey, R.G. Deeley and **S.P.C. Cole**. ATP-dependent transport of aflatoxin B₁ and its glutathione conjugates by the product of the *MRP* gene. *Mol. Pharmacol.* 51: 1034-1041 (1997).
96. H.S.L. Chan, Y. Lu, T.M. Grogan, G. Haddad, D.R. Hipfner, **S.P.C. Cole**, R.G. Deeley, V. Ling and B.L. Gallie. Multidrug resistance protein (MRP) expression in retinoblastoma correlates with the rare failure of chemotherapy despite cyclosporine for reversal of P-glycoprotein. *Cancer Res.* 57: 2325-2330 (1997).
97. D.R. Hipfner, K.C. Almquist, E.M. Leslie, J.H. Gerlach, C.E. Grant, R.G. Deeley and **S.P.C. Cole**. Membrane topology of the multidrug resistance protein, MRP: a study of glycosylation-site mutants reveals an extracytosolic NH₂-terminus. *J. Biol. Chem.* 272: 23623-23630 (1997).
98. B.D. Stride, C.E. Grant, D.W. Loe, D.R. Hipfner, **S.P.C. Cole** and R.G. Deeley. Pharmacological characterization of the murine and human orthologs of multidrug resistance protein in transfected human embryonic kidney cells. *Mol. Pharmacol.* 52: 344-353 (1997).
99. I. Wessel, P.B. Jensen, J. Falck, S.E.L. Mirski, **S.P.C. Cole** and M. Sehested. Loss of amino acids ¹⁴⁹⁰Lys-Ser-Lys¹⁴⁹² in the COOH-terminal region of topoisomerase II α in human small cell lung cancer cells selected for resistance to etoposide results in an extranuclear enzyme localization. *Cancer Res.* 57: 4451-4454 (1997).
100. C.E. Grant, E.U. Kurz, **S.P.C. Cole** and R.G. Deeley. Analysis of the intron-exon organization of the human multidrug resistance protein gene (MRP) and alternative splicing of its mRNA. *Genomics* 45: 368-378 (1997). *59 citations-02/2014
101. S.E.L. Mirski, J.H. Gerlach, H.J. Cummings, R. Zirngibl, P.A. Greer and **S.P.C. Cole**. Bipartite nuclear localization signals in the C-terminus of human topoisomerase II α . *Exp. Cell Res.* 237: 452-455 (1997).
102. M.D. Norris, S.B. Bordow, P.S. Haber, G.M. Marshall, M. Kavallaris, J. Madafiglio, S.L. Cohn, H. Salwen, M.L. Schmidt, D.R. Hipfner, **S.P.C. Cole**, R.G. Deeley and M. Haber. Evidence that the N-myc oncogene regulates *MRP* gene expression in neuroblastoma. *Eur. J. Cancer* 33: 1911-1916 (1997).

103. R.G. Deeley and **S.P.C. Cole**. Function, evolution and structure of multidrug resistance protein (MRP). *Sem. Cancer Biol.* 8: 193-204 (1997). (*invited*)
104. H.S.L. Chan, T.M. Grogan, G. Haddad, D.R. Hipfner, R.G. Deeley and **S.P.C. Cole**. Standardization of a single-cell assay for sensitive detection of multidrug resistance protein (MRP) expression in normal and malignant cells in archival clinical samples. *J. Lab. Clin. Med.* 130: 297-306 (1997).
105. M. Lohoff, S. Prechtel, F. Sommer, M. Roellinghoff, E. Schmitt, G. Gradehandt, P. Rohwer, B.D. Stride, **S.P.C. Cole** and R.G. Deeley. A multidrug-resistance protein (MRP)-like transmembrane pump is highly expressed by resting murine T helper (Th) 2, but not Th1 cells, and is induced to equal expression levels in Th1 and Th2 cells after antigenic stimulation *in vivo*. *J. Clin. Invest.* 101: 703-710 (1998).
106. M. Gao, M. Yamazaki, D.W. Loe, C.J. Westlake, C.E. Grant, **S.P.C. Cole** and R.G. Deeley. Multidrug resistance protein: identification of regions required for active transport of leukotriene C₄. *J. Biol. Chem.* 273: 10733-10740 (1998).
107. D.R. Hipfner, M. Gao, G. Scheffer, R.J. Scheper, R.G. Deeley and **S.P.C. Cole**. Epitope mapping of monoclonal antibodies specific for the 190 kDa multidrug resistance protein, MRP. *Br. J. Cancer* 78: 1134-1140 (1998).
108. C.E. Grant, G. Bhardwaj, **S.P.C. Cole** and R.G. Deeley. Cloning, transfer and characterization of MRP. *Meth. Enzymol.* 292: 594-607 (1998). (*invited*)
109. Y. Canitrot, F. Bichat, **S. Cole**, R. Deeley, J. Gerlach, G. Bastian, F. Arvelo and M. Poupon. Expression of the multidrug resistance genes (MRP) and (MDR1) in small cell lung cancer xenografts: relationship with clinical outcome. *Cancer Lett.* 130: 133-141 (1998).
110. **S.P.C. Cole** and R.G. Deeley. Multidrug resistance mediated by the ATP-binding cassette transporter protein, MRP. *BioEssays* 20: 931-940 (1998) (*invited, peer-reviewed*)
111. S.R. Wright, A.H. Boag, B.G. Campling, G. Valdimarsson, D.R. Hipfner, **S.P.C. Cole** and R.G. Deeley. Immunohistochemical detection of multidrug resistance protein (MRP) in human lung cancer and normal lung. *Clin. Cancer Res.* 4: 2279-2289 (1998).
112. D.W. Loe, R.G. Deeley and **S.P.C. Cole**. Characterization of vincristine transport by the 190 kDa multidrug resistance protein, MRP: evidence for co-transport with reduced glutathione. *Cancer Res.* 58: 5130-5136 (1998).
113. A.J. Lang, S.E.L. Mirski, H.J. Cummings, Q. Yu, J.H. Gerlach and **S.P.C. Cole**. Structural organization of the human *TOP2A* and *TOP2B* genes. *Gene* 221: 255-266 (1998).
114. T. Abe, T. Mori, Y. Wakabayashi, M. Nakagawa, **S.P.C. Cole**, K. Koike, M. Kuwano and S. Hori. Expression of multidrug resistance protein gene in patients with glioma after chemotherapy. *J. Neuro-Oncol.* 40: 11-18 (1998).
115. B. Savas, P.E. Kerr, H. Ustun, **S.P.C. Cole** and H.F. Pross. Lymphokine-activated killer cell susceptibility and multidrug resistance in small cell lung carcinoma. *Anticancer Res.* 18: 4355-4361 (1998).
116. L.C. Young, B.G. Campling, T. Voskoglou-Nomikos, **S.P.C. Cole**, R.G. Deeley and J.H. Gerlach. Expression of MRP-related genes in lung cancer: correlation with drug response. *Clin. Cancer Res.* 5: 673-680 (1999).
117. D.D. Ross, W.D. Yang, L.V. Abruzzo, W.S. Dalton, E. Schneider, H. Lage, M. Dietel, L. Greenberger, **S.P.C. Cole** and L.A. Doyle. Atypical multidrug resistance: breast cancer resistance protein messenger RNA expression in mitoxantrone-selected cell lines. *J. Nat. Cancer Inst.* 91: 429-433 (1999).

118. **S.P.C. Cole**. Re: Characterization of MOAT-C and MOAT-D, new members of the MRP/cMOAT subfamily of transporter proteins. *J. Nat. Cancer Inst.* 91: 888 (1999) (letter).
119. D.R. Hipfner, Q. Mao, W. Qiu, E.M. Leslie, M. Gao, R.G. Deeley and **S.P.C. Cole**. Monoclonal antibodies that inhibit the transport function of the 190 kDa multidrug resistance protein, MRP: localization of their epitopes to the nucleotide binding domains of the protein. *J. Biol. Chem.* 274: 15420-15426 (1999).
120. J.P. Machiels, A.S. Govaerts, T. Guillaume, B. Bayat, A.M. Feyens, E. Lenoir, J.C. Goeminne, **S. Cole**, R. Deeley, M. Caruso, A. Bank, M. Symann and V. D'Hondt. Retrovirus-mediated gene transfer of the human multidrug resistance-associated protein into hematopoietic cells protects mice from chemotherapy-induced leukopenia. *Hum. Gene Ther.* 10: 801-811 (1999).
121. B.D. Stride, **S.P.C. Cole** and R.G. Deeley. Localization of a substrate specificity domain in the multidrug resistance protein. *J. Biol. Chem.* 274: 22877-22883 (1999).
122. S.E.L. Mirski, J.H. Gerlach and **S.P.C. Cole**. Sequence determinants of nuclear localization in the α and β isoforms of human topoisomerase II. *Exp. Cell Res.* 251: 329-339 (1999).
123. Q. Mao, E.M. Leslie, R.G. Deeley and **S.P.C. Cole**. ATPase activity of purified and reconstituted multidrug resistance protein (MRP1) from drug-selected H69AR cells. *Biochim. Biophys. Acta* 1461: 69-82 (1999).
124. D.R. Hipfner, R.G. Deeley and **S.P.C. Cole**. Structural, mechanistic and clinical aspects of MRP1. *Biochim. Biophys. Acta* 1461: 359-376 (1999). (invited, peer reviewed)
125. S.E.L. Mirski, K.E. Sparks, Q. Yu, A.J. Lang, N. Jain, B.G. Campling and **S.P.C. Cole**. A truncated cytoplasmic topoisomerase II α in a drug resistant lung cancer cell line is encoded by a *TOP2A* allele with a partial deletion of exon 34. *Int. J. Cancer* 85: 534-539 (2000).
126. S. Pechtl, M. Roellinghoff, R. Scheper, **S.P.C. Cole**, R.G. Deeley and M. Lohoff. The multidrug resistance protein 1: a functionally important activation marker for murine Th1 cells. *J. Immunol.* 164: 754-761 (2000).
127. D.W. Loe, R.G. Deeley and **S.P.C. Cole**. Verapamil stimulates glutathione transport by the 190 kDa multidrug resistance protein, MRP1. *J. Pharm. Exp. Ther.* 293: 530-538 (2000).
128. M. Gao, H. Cui, D.W. Loe, C.E. Grant, K.C. Almquist, **S.P.C. Cole** and R.G. Deeley. Comparison of the functional characteristics of the nucleotide binding domains of multidrug resistance protein 1. *J. Biol. Chem.* 275: 13098-13108 (2000).
129. S.E.L. Mirski, T. Voskoglou-Nomikos, L.C. Young, R.G. Deeley, B.G. Campling, J.H. Gerlach and **S.P.C. Cole**. Simultaneous quantitation of topoisomerase II α and β isoform mRNAs in lung tumour cells and normal and malignant lung tissue. *Lab. Invest.* 80: 787-795 (2000).
130. D.W. Loe, C.J. Oleschuk, R.G. Deeley and **S.P.C. Cole**. Structure-activity studies of verapamil analogs that modulate transport of leukotriene C₄ and reduced glutathione by multidrug resistance protein MRP1. *Biochem. Biophys. Res. Commun.* 275: 795-803 (2000).
131. Q. Mao, R.G. Deeley and **S.P.C. Cole**. Functional reconstitution of substrate transport by purified multidrug resistance protein MRP1 (ABCC1) in phospholipid vesicles. *J. Biol. Chem.* 275: 34166-34172 (2000).
132. Y.M. Qian, W.C. Song, H.R. Cui, **S.P.C. Cole** and R.G. Deeley. Glutathione stimulates sulfated estrogen transport by multidrug resistance protein 1. *J. Biol. Chem.* 276: 6404-6411 (2001).

133. D. Zhang, **S.P.C. Cole** and R.G. Deeley. Identification of an amino acid residue in multidrug resistance protein (MRP) 1 critical for conferring resistance to anthracyclines. *J. Biol. Chem.* 276: 13231-13239 (2001).
134. E.M. Leslie, Q. Mao, C.J. Oleschuk, R.G. Deeley and **S.P.C. Cole**. Modulation of multidrug resistance protein 1 (MRP1/ABCC1) transport and ATPase activities by interaction with dietary flavonoids. *Mol. Pharmacol.* 59: 1171-1180 (2001). (*among top ten articles viewed in Mol. Pharmacol. October 2005*).
135. K. Ito, S.L. Olsen, W. Qiu, R.G. Deeley and **S.P.C. Cole**. Mutation of a single conserved tryptophan in multidrug resistance protein 1 (MRP1/ABCC1) results in loss of drug resistance and selective loss of organic anion transport. *J. Biol. Chem.* 276: 15616-15624 (2001).
136. M.F. Rosenberg, Q. Mao, A. Holzenburg, R.C. Ford, R.G. Deeley and **S.P.C. Cole**. The structure of the multidrug resistance protein 1 (MRP1/ABCC1): crystallization and single-particle analysis. *J. Biol. Chem.* 276: 16076-16082 (2001).
137. L.C. Young, B.G. Campling, **S.P.C. Cole**, R.G. Deeley and J.H. Gerlach. Multidrug resistance proteins MRP3, MRP1 and MRP2 in lung cancer: correlation of protein levels with drug response and messenger RNA levels. *Clin. Cancer Res.* 7: 1798-1804 (2001).
138. R. Zirngibl, D. Schulze, S. Mirski, **S.P.C. Cole** and P. Greer. Subcellular localization analysis of the closely related Fps/Fes and Fer protein-tyrosine kinases suggests a distinct role for Fps/Fes in vesicular trafficking. *Exp. Cell Res.* 266: 87-94 (2001).
139. E.M. Leslie, R.G. Deeley and **S.P.C. Cole**. Toxicological relevance of the multidrug resistance protein 1, MRP1 (ABCC1) and related transporters. *Toxicology* 167: 3-23 (2001). (*invited, peer-reviewed*). (*In TOP 40 of articles cited in Toxicology 2001-2006*).
140. E.M. Leslie, K. Ito, P. Upadhyaya, S.S. Hecht, R.G. Deeley and **S.P.C. Cole**. Transport of the β -O-glucuronide conjugate of the tobacco-specific carcinogen 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol (NNAL) by the multidrug resistance protein 1 (MRP1/ABCC1): requirement for glutathione or a non-sulfur-containing analog. *J. Biol. Chem.* 276: 27846-27854 (2001).
141. E.U. Kurz, **S.P.C. Cole** and R.G. Deeley. Identification of DNA-protein interactions in the 5' flanking and 5' untranslated regions of the human multidrug resistance protein (MRP1) gene: Evaluation of a putative antioxidant response element/AP-1 binding site. *Biochem. Biophys. Res. Commun.* 285: 981-990 (2001).
142. D. Zhang, **S.P.C. Cole** and R.G. Deeley. Identification of a non-conserved amino acid residue in multidrug resistance protein (MRP) 1 important for determining substrate specificity: evidence for functional interaction between transmembrane helices 14 and 17. *J. Biol. Chem.* 276: 34966-34974 (2001).
143. K. Ito, C.J. Oleschuk, C. Westlake, M.Z. Vasa, R.G. Deeley and **S.P.C. Cole**. Mutation of Trp¹²⁵⁴ in the multispecific organic anion transporter, multidrug resistance protein 2 (MRP2) (ABCC2), alters substrate specificity and results in loss of methotrexate transport activity. *J. Biol. Chem.* 276: 38108-38114 (2001).
144. Y.M. Qian, W. Qiu, M. Gao, C.J. Westlake, **S.P.C. Cole** and R.G. Deeley. Characterization of binding of leukotriene C₄ by human multidrug resistance protein 1: evidence of differential interactions with NH₂- and COOH-proximal halves of the protein. *J. Biol. Chem.* 276: 38636-38644 (2001).
145. S. Conrad, H-M. Kauffmann, K-i. Ito, R. Deeley, **S.P.C. Cole** and D. Schrenk. Identification of human multidrug resistance protein 1 (MRP1) mutations and characterization of a G671V substitution. *J. Hum. Genet.* 46: 656-663 (2001).
146. S. Conrad, H-M. Kauffmann, K-i. Ito, E.M. Leslie, R.G. Deeley, D. Schrenk and **S.P.C. Cole**. A naturally occurring mutation in MRP1 results in a selective decrease in organic anion transport and in increased doxorubicin resistance. *Pharmacogenetics* 12: 321-330 (2002).

147. D-W. Zhang, **S.P.C. Cole** and R.G. Deeley. Determinants of the substrate specificity of multidrug resistance protein 1 (MRP1): role of amino acid residues with hydrogen bonding potential in predicted transmembrane helix 17. *J. Biol. Chem.* 277: 20934-20941 (2002).
148. Q. Mao, W. Qiu, K.E. Weigl, P.A. Lander, L.B. Tabas, R.L. Shepard, A.H. Dantzig, R.G. Deeley and **S.P.C. Cole**. GSH-dependent photolabeling of multidrug resistance protein MRP1 (ABCC1) by [¹²⁵I]-LY475776: evidence of a major binding site in the COOH-proximal membrane spanning domain. *J. Biol. Chem.* 277: 28690-28699 (2002).
149. **S.P.C. Cole** and R.G. Deeley. Multidrug Resistance II - MRP and Related Proteins. In, *Encyclopedia of Cancer - Second Edition* (ed. J.R. Bertino), Vol. 3, pp. 255-267, Elsevier Science, San Diego, CA (2002). (invited)
150. Y-M. Qian, C.E. Grant, C.J. Westlake, D. Zhang, P.A. Lander, R.L. Shepard, A.H. Dantzig, **S.P.C. Cole** and R.G. Deeley. Photolabeling of human and murine multidrug resistance protein 1 with the high affinity inhibitor [¹²⁵I]LY475776 and azidophenacyl [³⁵S]glutathione. *J. Biol. Chem.* 277: 35225-35231 (2002).
151. A. Haimeur, R.G. Deeley and **S.P.C. Cole**. Charged amino acids in the sixth transmembrane helix of multidrug resistance protein 1 (MRP1/ABCC1) are critical determinants of transport activity. *J. Biol. Chem.* 277: 41326-41333 (2002).
152. C-N. Lok, A.J. Lang, S.E.L. Mirski and **S.P.C. Cole**. Characterization of human topoisomerase II β (*TOP2B*) promoter activity: essential roles of the nuclear factor-Y (NF-Y) and specificity protein-1 (Sp1) binding sites. *Biochem. J.* 368: 741-751 (2002).
153. K. Koike, C.J. Oleschuk, A. Haimeur, S.L. Olsen, R.G. Deeley and **S.P.C. Cole**. Multiple membrane associated tryptophan residues contribute to the transport activity and substrate specificity of the human multidrug resistance protein, MRP1. *J. Biol. Chem.* 277: 49495-49503 (2002).
154. R.G. Deeley and **S.P.C. Cole**. Multidrug resistance protein 1 (ABCC1). In, *ABC Proteins: From Bacteria to Man*. (eds. I.B. Holland, **S.P.C. Cole**, K. Kuchler and C.F. Higgins) Ch. 19, pp. 393-422, Academic Press Elsevier Science, London (2003).
155. E.M. Leslie, R.G. Deeley and **S.P.C. Cole**. Bioflavonoid stimulation of glutathione transport by the 190-kDa multidrug resistance protein 1 (MRP1). *Drug Metab. Dispos.* 31: 11-15 (2003).
156. C.J. Oleschuk, R.G. Deeley and **S.P.C. Cole**. Substitution of Trp¹²⁴² of TM17 alters substrate specificity of human multidrug resistance protein, MRP3. *Am. J. Physiol. Gastrointest. Liver Physiol.* 284: G280-289 (2003).
157. E.M. Leslie, R.J. Bowers, R.G. Deeley and **S.P.C. Cole**. Structural requirements for functional interaction of glutathione tripeptide analogs with the human multidrug resistance protein 1 (MRP1). *J. Pharmacol. Exp. Ther.* 304: 643-653 (2003).
158. E.M. Leslie, I.J. Létourneau, R.G. Deeley and **S.P.C. Cole**. Functional and structural consequences of cysteine substitutions in the NH₂-proximal region of the human multidrug resistance protein 1 (MRP1/ABCC1). *Biochemistry* 42: 5214-5224 (2003).
159. I. Kogan, M. Ramjeesingh, C. Li, J.F. Kidd, Y. Wang, E.M. Leslie, **S.P.C. Cole** and C.E. Bear. CFTR directly mediates nucleotide-regulated glutathione flux. *EMBO J.* 22: 1981-1989 (2003).
160. S.E.L. Mirski, J.C. Bielawski and **S.P.C. Cole**. Identification of functional nuclear export sequences in human topoisomerase II α and β . *Biochem. Biophys. Res. Comm.* 306: 905-911 (2003).

161. K. Nunoya, C.E. Grant, D. Zhang, **S.P.C. Cole** and R.G. Deeley. Molecular cloning and pharmacological characterization of rat multidrug resistance protein 1 (MRP1). *Drug Metab. Dispos.* 31: 1016-1026 (2003).
162. K. Neumann, K.M. Al-Batayneh, M.J. Kuiper, J. Parsons-Sheldrake, M.G. Tyshenko, W.F. Flintoff, **S.P.C. Cole** and V.K. Walker. A single point mutation in *Drosophila* dihydrofolate reductase confers methotrexate resistance to a transgenic CHO cell line. *Genome* 46: 707-715 (2003).
163. D-W. Zhang, H-M. Gu, M. Vasa, M. Muredda, **S.P.C. Cole** and R.G. Deeley. Characterization of the role of polar amino acid residues within predicted transmembrane helix 17 in determining the substrate specificity of multidrug resistance protein 3 (ABCC3). *Biochemistry* 42: 9989-10000 (2003).
164. K. Ito, K.E. Weigl, R.G. Deeley and **S.P.C. Cole**. Mutation of proline residues in the NH₂-terminal region of the multidrug resistance protein, MRP1 (ABCC1): effects on protein expression, membrane localization, and transport function. *Biochim. Biophys. Acta* 1615: 103-114 (2003).
165. L.F. Payen, M. Gao, C.J. Westlake, **S.P.C. Cole** and R.G. Deeley. Role of carboxylate residues adjacent to the conserved core Walker B motifs in the catalytic cycle of multidrug resistance protein 1 (ABCC1). *J. Biol. Chem.* 278: 38537-38547 (2003).
166. M. Muredda, K. Nunoya, R.A. Burtch-Wright, E.U. Kurz, **S.P.C. Cole** and R.G. Deeley. Cloning and characterization of the murine and rat mrp1 promoter regions. *Mol. Pharmacol.* 64: 1259-1269 (2003).
167. D-W. Zhang, H-M. Gu, D. Situ, A. Haimneur, **S.P.C. Cole** and R.G. Deeley. Functional importance of polar and charged amino acid residues in transmembrane helix 14 of multidrug resistance protein 1 (MRP1/ABCC1): identification of an aspartate residue critical for conversion from a high to low affinity substrate binding state. *J. Biol. Chem.* 278: 46052-46063 (2003).
168. C.J. Westlake, Y-M. Qian, M. Gao, M. Vasa, **S.P.C. Cole** and R.G. Deeley. Identification of the structural and functional boundaries of the multidrug resistance protein 1 cytoplasmic loop 3. *Biochemistry* 42: 14099-14113 (2003).
169. J.D. Campbell, K. Koike, C. Moreau, M.S.P. Sansom, R.G. Deeley and **S.P.C. Cole**. Molecular modeling correctly predicts the functional importance of Phe⁵⁹⁴ in transmembrane helix 11 of the multidrug resistance protein, MRP1 (ABCC1). *J. Biol. Chem.* 279: 463-468 (2004).
170. K. Koike, G. Conseil, E.M. Leslie, R.G. Deeley and **S.P.C. Cole**. Identification of proline residues in the core cytoplasmic and transmembrane regions of multidrug resistance protein 1 (MRP1/ABCC1) important for transport function, substrate specificity, and nucleotide interactions. *J. Biol. Chem.* 279: 12325-12336 (2004).
171. K. Koike, R.G. Deeley and **S.P.C. Cole**. Mapping of the MRPm5 epitope to the cytosolic region between transmembrane helices 13 and 14 in the drug and organic anion transporter, MRP1 (ABCC1). *Biochem. Biophys. Res. Commun.* 315: 719-725 (2004).
172. A. Haimneur, G. Conseil, R.G. Deeley and **S.P.C. Cole**. The MRP-related and BCRP/ABCG2 multidrug resistance proteins: biology, substrate specificity and regulation. *Curr. Drug Metab.* 5: 21-53 (2004) (invited, peer-reviewed). (One of Canada's Top 10 Hot Papers, April 2004-February 2006, <http://www.in-cites.com/countries/Canada-top10papers2006>)
173. A. Haimneur, G. Conseil, R.G. Deeley and **S.P.C. Cole**. Mutations of charged amino acids in or proximal to the transmembrane helices of the second membrane spanning domain differentially affect the substrate specificity and transport activity of the multidrug resistance protein, MRP1 (ABCC1). *Mol. Pharmacol.* 65: 1375-1385 (2004).
174. Q. Mao, G. Conseil, A. Gupta, **S.P.C. Cole** and J.D. Unadkat. Functional expression of the human breast cancer resistance protein in *Pichia pastoris*. *Biochem. Biophys. Res. Commun.* 320: 730-737 (2004).

175. D-W. Zhang, K. Nunoya, M. Vasa, H-M. Gu, A. Theis, **S.P.C. Cole** and R.G. Deeley. Transmembrane helix 11 of multidrug resistance protein 1 (MRP1/ABCC1): Identification of polar amino acids important for substrate specificity and binding of ATP at nucleotide binding domain 1. *Biochemistry* 43: 9413-9425 (2004).
176. D. Situ, A. Haimeur, G. Conseil, K.E. Sparks, D. Zhang, R.G. Deeley and **S.P.C. Cole**. Mutational analysis of ionizable residues proximal to the cytoplasmic interface of membrane spanning domain 3 of the multidrug resistance protein, MRP1 (ABCC1): Glutamate 1204 is important for both the expression and catalytic activity of the transporter. *J. Biol. Chem.* 279: 38871-38880 (2004).
177. P.W. Causey, M.C. Baird and **S.P.C. Cole**. Synthesis, characterization and assessment of cytotoxic properties of a series of titanocene dichloride derivatives. *Organometallics* 23: 4486-4494 (2004).
178. C.J. Westlake, L. Payen, M. Gao, **S.P.C. Cole** and R.G. Deeley. Identification and characterization of functionally important elements in the multidrug resistance protein 1 COOH-terminal region. *J. Biol. Chem.* 279: 53571-53583 (2004).
179. G. Conseil, R.G. Deeley and **S.P.C. Cole**. Role of two adjacent cytoplasmic tyrosine residues in MRP1 (ABCC1) transport activity and sensitivity to sulfonylureas. *Biochem. Pharmacol.* 69: 451-461 (2005).
180. E.M. Leslie, R.G. Deeley and **S.P.C. Cole**. Multidrug resistance proteins in toxicology: role of P-glycoprotein, MRP1, MRP2 and BCRP (ABCG2) in tissue defense. *Toxicol. Appl. Pharmacol.* 204: 216-237 (2005). (invited, peer-reviewed). (Top cited article in *Toxicology and Applied Pharmacology* 2006, one of Elsevier's Top 20 Downloaded Articles on ScienceDirect™ 2007-2008)
181. I.J. Létourneau, R.J. Bowers, R.G. Deeley and **S.P.C. Cole**. Limited modulation of the transport activity of the human multidrug resistance proteins MRP1, MRP2 and MRP3 by nicotine glucuronide metabolites. *Toxicol. Lett.* 157: 9-19 (2005).
182. **S.P.C. Cole** and I.F. Tannock. Drug resistance. In, *The Basic Science of Oncology*, 4th edition [eds. I.F. Tannock, R.P. Hill, R.G. Bristow and L. Harrington]. Ch. 18, pp. 376-399, McGraw-Hill, New York (2005).
183. C.J. Westlake, **S.P.C. Cole** and R.G. Deeley. Role of the NH₂-terminal membrane spanning domain of MRP1/ABCC1 in protein processing and trafficking. *Mol. Biol. Cell* 16: 2483-2492 (2005).
184. L. Payen, M. Gao, C. Westlake, A. Theis, **S.P.C. Cole** and R.G. Deeley. Functional interactions between nucleotide binding domains and LTC₄ binding sites of multidrug resistance protein 1 (ABCC1). *Mol. Pharmacol.* 67: 1944-1953 (2005).
185. G. Conseil, R.G. Deeley and **S.P.C. Cole**. Polymorphisms of *MRP1 (ABCC1)* and related ATP-dependent drug transporters. *Pharmacogenet. Genomics* 15: 523-533 (2005) (invited, peer-reviewed).
186. I.J. Létourneau, R.G. Deeley and **S.P.C. Cole**. Functional characterization of non-synonymous single nucleotide polymorphisms in the gene encoding human multidrug resistance protein 1 (MRP1/ABCC1). *Pharmacogenet. Genomics* 15: 647-657 (2005).
187. P. Wu, C.J. Oleschuk, Q. Mao, B.O. Keller, R.G. Deeley and **S.P.C. Cole**. Analysis of human multidrug resistance protein 1 (ABCC1) by matrix-assisted laser desorption ionization/time of flight mass spectrometry: toward identification of leukotriene C₄ binding sites. *Mol. Pharmacol.* 68: 1455-1465 (2005).
188. J.G. Affleck, K.M. Al-Batayneh, K. Neumann, **S.P.C. Cole** and V.K. Walker. *Drosophila* dihydrofolate reductase mutations confer antifolate resistance to mammalian cells. *Eur. J. Pharmacol.* 529: 71-78 (2006).

189. G. Conseil, R.G. Deeley and **S.P.C. Cole**. Functional importance of three basic residues clustered at the cytosolic interface of transmembrane helix 15 in the multidrug and organic anion transporter MRP1 (ABCC1). *J. Biol. Chem.* 281: 43-50 (2006).
190. R.G. Deeley and **S.P.C. Cole**. Substrate recognition and transport by multidrug resistance protein 1 (ABCC1). *FEBS Lett.* 580: 1103-1111 (2006) (*invited, peer-reviewed*).
191. D-W. Zhang, K. Nunoya, M. Vasa, H-M. Gu, **S.P.C. Cole** and R.G. Deeley. Mutational analysis of polar amino acid residues within predicted transmembrane helices 10 and 16 of multidrug resistance protein 1 (ABCC1): effect on substrate specificity. *Drug Metab. Dispos.* 34: 539-546 (2006) (*ASPET James R. Gillette Drug Metabolism Best Paper of 2006*).
192. A. Rothnie, R. Callaghan, R.G. Deeley and **S.P.C. Cole**. Role of GSH in estrone sulfate binding and translocation by the multidrug resistance protein 1 (MRP1, ABCC1). *J. Biol. Chem.* 281: 13906-13914 (2006).
193. **S.P.C. Cole** and R.G. Deeley. Transport of glutathione and glutathione conjugates by MRP1. *Trends Pharmacol. Sci.* 27: 438-446 (2006) (*invited, peer-reviewed*).
194. R.G. Deeley, C. Westlake and **S.P.C. Cole**. Transmembrane transport of endo- and xenobiotics by membrane ATP-binding cassette multidrug resistance proteins. *Physiol. Rev.* 86: 849-899 (2006) (*invited, peer-reviewed*).
195. G.D. Potter, M.C. Baird, M. Chan and **S.P.C. Cole**. Cellular toxicities of new titanocene dichloride derivatives containing pendant cyclic alkylammonium groups. *Inorg. Chem. Commun.* 9: 1114-1116 (2006).
196. S.E.L. Mirski, K.E. Sparks, B. Friedrich, M. Kohler, Y-Y. Mo, W.T. Beck and **S.P.C. Cole**. Topoisomerase II binds importin α isoforms and exportin/CRM1 but does not shuttle between the nucleus and cytoplasm in proliferating cells. *Exp. Cell Res.* 313: 627-637 (2007) (*selected as a journal 'Highlight'*).
197. G.D. Potter, M.C. Baird and **S.P.C. Cole**. A new series of titanocene dichloride derivatives bearing cyclic alkylammonium groups: assessment of their cytotoxic properties. *J. Organometall. Chem.* 692: 3508-3518 (2007).
198. I.J. Létourneau, A.J. Slot, R.G. Deeley and **S.P.C. Cole**. Mutational analysis of a highly conserved proline residue in MRP1, MRP2 and MRP3 reveals a partially conserved function. *Drug Metab. Dispos.* 35: 1372-1379 (2007).
199. J.P. Wyles, Z. Wu, S.E.L. Mirski and **S.P.C. Cole**. Nuclear interactions of topoisomerase II α and β with phospholipid scramblase 1. *Nucl. Acids Res.* 35: 4076-4085 (2007).
200. M.K. DeGorter, G. Conseil, R.G. Deeley, R.L. Campbell and **S.P.C. Cole**. Molecular modeling of the human multidrug resistance protein 1 (MRP1/ABCC1). *Biochem. Biophys. Res. Commun.* 365: 29-34 (2008).
201. A.J. Slot, D.D. Wise, R.G. Deeley, T.J. Monks and **S.P.C. Cole**. Modulation of human MRP1 (ABCC1) and MRP2 (ABCC2) transport by endogenous and exogenous glutathione-conjugated catechol metabolites. *Drug Metab. Dispos.* 36: 552-560 (2008).
202. I.J. Létourneau, A. Nakajima, R.G. Deeley and **S.P.C. Cole**. Role of proline 1150 in functional interactions between the membrane spanning domains and nucleotide binding domains of the MRP1 (ABCC1) transporter. *Biochem. Pharmacol.* 75: 1659-1669 (2008).
203. Md. T. Hoque and **S.P.C. Cole**. Downregulation of NHERF1 increases expression and function of multidrug resistance protein 4 (MRP4). *Cancer Res.* 68: 4802-4809 (2008).

204. P.E. Bandler, C.J. Westlake, C.E. Grant, **S.P.C. Cole** and R.G. Deeley. Identification of regions in human multidrug resistance protein (MRP) 2 required for apical membrane localization. *Mol. Pharmacol.* 74: 9-19 (2008).
205. A. Rothnie, G. Conseil, A.Y.T. Lau, R.G. Deeley and **S.P.C. Cole**. Mechanistic differences between GSH transport by MRP1 (ABCC1) and GSH modulation of MRP1-mediated transport. *Mol. Pharmacol.* 74: 1630-1640 (2008).
206. C.E. Grant, M. Gao, M.K. DeGorter, **S.P.C. Cole** and R.G. Deeley. Structural determinants of substrate specificity differences between human multidrug resistance protein (MRP) 1 (ABCC1) and MRP3 (ABCC3). *Drug Metab. Dispos.* 36: 2571-2581 (2008).
207. L. Qin, J. Zheng, C.E. Grant, Z. Jia, **S.P.C. Cole** and R.G. Deeley. Residues responsible for the asymmetric function of the nucleotide binding domains of multidrug resistance protein (MRP) 1. *Biochemistry* 47: 13952-13965 (2008).
208. G. Conseil, A. Rothnie, R.G. Deeley and **S.P.C. Cole**. Multiple roles of charged amino acids in cytoplasmic loop 7 for expression and function of the multidrug and organic anion transporter MRP1 (ABCC1). *Mol. Pharmacol.* 75: 397-406 (2009).
209. Md. T. Hoque, G. Conseil and **S.P.C. Cole**. Involvement of NHERF1 in apical membrane localization of MRP4 in polarized kidney cells. *Biochem. Biophys. Res. Commun.* 379: 60-64 (2009).
210. K. Maeno, A. Nakajima, G. Conseil, A. Rothnie, R.G. Deeley and **S.P.C. Cole**. Molecular basis for reduced estrone sulfate transport and altered modulator sensitivity of TM6 and TM17 mutants of MRP1 (ABCC1). *Drug Metab. Dispos.* 37: 1411-1420 (2009).
211. S.H. Lee, M-S. Lee, J.H. Lee, S.W. Kim, R-H. Kang, M-J. Choi, S.J. Park, S.J. Kim, J.M. Lee, **S.P.C. Cole** and M.G. Lee. MRP1 polymorphisms associated with citalopram response in patients with major depression. *J. Clin. Psychopharmacol.* 30: 116-125 (2010).
212. M.F. Rosenberg, C.J. Oleschuk, P. Wu, Q. Mao, R.G. Deeley, **S.P.C. Cole** and R.C. Ford. Structure of a human multidrug transporter in an inward-facing conformation. *J. Struct. Biol.* 170: 540-547 (2010).
213. G.D. Potter, M.C. Baird and **S.P.C. Cole**. A new series of titanocene dichloride derivatives bearing chiral alkylammonium groups: assessment of their cytotoxic properties. *Inorg. Chim. Acta* 364: 16-22 (2010).
214. S.H. Iram and **S.P.C. Cole**. Expression and function of human MRP1 (ABCC1) is dependent on amino acids in cytoplasmic loop 5 and its interface with nucleotide binding domain 2. *J. Biol. Chem.* 286: 7202-7213 (2011).
215. M. Pajic, J. Murray, G.M. Marshall, **S.P.C. Cole**, M.D. Norris and M. Haber. ABCC1 G2012T single nucleotide polymorphism is associated with patient outcome in primary neuroblastoma and altered stability of the ABCC1 gene transcript. *Pharmacogenet. Genomics* 21: 270-279 (2011).
216. A.J. Slot, S.V. Molinski and **S.P.C. Cole**. Mammalian multidrug resistance proteins (MRPs). *Essays Biochem.* 50: 179-207 (2011) (invited, peer-reviewed).
217. S.H. Iram and **S.P.C. Cole**. Mutation of Glu⁵²¹ or Glu⁵³⁵ in cytoplasmic loop 5 cause differential misfolding in multiple domains of the multidrug and organic anion transporter MRP1 (ABCC1). *J. Biol. Chem.* 287: 7543-7555 (2012).
218. **S.P.C. Cole** and I.F. Tannock. Drug resistance. In, *The Basic Science of Oncology*, 5th edition [eds. I.F. Tannock, R.P. Hill, R.G. Bristow and L. Harrington]. Ch. 19, pp. 443-468, McGraw-Hill, New York, NY (2012). ISBN: 978-0-07-174520-8.

219. P.G. Sreekumar, C. Spee, S.J. Ryan, **S.P.C. Cole**, R. Kannan and D.R. Hinton. Mechanism of RPE cell death in α -crystallin deficient mice: A novel and critical role for MRP1-mediated GSH efflux. *PLoS ONE* 7: e33420 (2012).
220. S.P. Ebert, B. Wetzel, R.L. Myette, G. Conseil, **S.P.C. Cole**, G.A. Sawada, T.W. Loo, M.C. Bartlett, D.M. Clarke and M.R. Detty. Chalcogenopyrylium compounds as modulators of the ATP-binding cassette transporters P-glycoprotein (P-gp/*ABCB1*) and multidrug resistance protein 1 (MRP1/*ABCC1*). *J. Med. Chem.* 55: 4683-4699 (2012).
221. R.L. Myette, G. Conseil, S.P. Ebert, B. Wetzel, M.R. Detty and **S.P.C. Cole**. Chalcogenopyrylium dyes as differential modulators of organic anion transport by MRP1, MRP2 and MRP4. *Drug Metab. Dispos.* 41: 1231-1239 (2013).
222. G. Conseil and **S.P.C. Cole**. Two polymorphic variants of *ABCC1* selectively alter drug resistance and inhibitor sensitivity of the multidrug and organic anion transporter MRP1. *Drug Metab. Dispos.* 41: 2187-2196 (2013).
223. S.H. Iram and **S.P.C. Cole**. Differential functional rescue of Lys⁵¹³ and Lys⁵¹⁶ processing mutants of MRP1 (*ABCC1*) by chemical chaperones reveals different domain-domain interactions of the transporter. *Biochim. Biophys. Acta* 1838: 756-765 (2014).
224. **S.P.C. Cole**. Targeting the multidrug resistance protein (MRP1, *ABCC1*): past, present and future. *Annu. Rev. Pharmacol. Toxicol.* 54: 95-117 (2014). (invited review).
225. J. Park, J-O. Kwak, B. Riederer, U. Seidler, **S.P.C. Cole**, H.J. Lee and M.G. Lee. Na⁺/H⁺ exchanger regulatory factor 3 is critical for multidrug resistance protein 4-mediated drug efflux in the kidney. *J. Am. Soc. Nephrol.* 25: 726-736 (2014). (IF 8.98) [Highlighted in *Nat. Rev. Nephrol.* 10: 183 (2014)].
226. L. Cheung, C.L. Flemming, F. Watt, N. Masada, D.M. Yu, T. Huynh, G. Conseil, A. Tivnan, A. Polinsky, A.V. Gudkov, M.A. Munoz, A. Vishvanath, D.M. Cooper, M.J. Henderson, **S.P.C. Cole**, J.I. Fletcher, M. Haber and M.D. Norris. High-throughput screening identifies Ceefourin-1 and Ceefourin-2 as highly selective inhibitors of multidrug resistance protein 4 (MRP4). *Biochem. Pharmacol.* 91: 97-108 (2014).
227. D. Jin, T.T. Ni, J. Sun, H. Wan, J.D. Amack, G. Yu, J. Fleming, C. Chiang, W. Li, A. Papierniak, S. Cheepala, G. Conseil, **S.P.C. Cole**, B. Zhou, I.A. Drummond, J.D. Schuetz, J. Malicki and T.P. Zhong. Prostaglandin signaling regulates ciliogenesis by modulating intraflagellar transport. *Nat. Cell Biol.* 16: 841-851 (2014). [Highlighted in *News & Views*, P. Barbry, L.E. Zaragosi. An ABC of ciliogenesis. *Nat. Cell Biol.* 16: 826-827 (2014)].
228. **S.P.C. Cole**. Multidrug resistance protein 1 (MRP1, *ABCC1*): A “multitasking” ABC transporter. *J. Biol. Chem.* 289: 30880-30888 (2014). (invited review)
229. M.F. Miah, G. Conseil, and **S.P.C. Cole**. N-glycans do not affect plasma membrane localization of multidrug resistance protein 4 (MRP4) but selectively alter its prostaglandin E2 transport activity. *Biochem. Biophys. Res. Commun.* 469: 954-959 (2016).
230. M.A. Csandl, G. Conseil, and **S.P.C. Cole**. Cysteinyl leukotriene receptor 1/2 antagonists nonselectively modulate organic anion transport by multidrug resistance proteins (MRP1-4). *Drug Metab. Disp.* 44: 857-866 (2016).
231. Y. Huang, **S.P.C. Cole**, T. Cai and Y. Cai. Applications of nanoparticle delivery systems for the reversal of multidrug resistance in cancer. *Oncol. Lett.* 12: 11-15 (2016).
232. C. B. Shukalek, D.P. Swanlund, R.K. Rousseau, K.E. Weigl, **S.P.C. Cole** and E.M. Leslie. Arsenic triglutathione [As(GS)₃] transport by multidrug resistance protein 1 (MRP1/*ABCC1*) is selectively

modulated by phosphorylation of Tyr⁹²⁰/Ser⁹²¹ and glycosylation of Asn¹⁹/Asn²³. *Molec. Pharmacol.* 90: 127-139 (2016).

233. M. Banerjee, V. Marensi, G. Conseil, X.C. Le, **S.P.C. Cole**, and E.M. Leslie. Polymorphic variants of MRP4/ABCC4 differentially modulate the transport of methylated arsenic metabolites and physiological organic anions. *Biochem. Pharmacol.* 120: 72-82 (2016).

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