Curriculum Vitae

Anna Renfrew

Education

PhD in Chemistry, Area of Specialisation: Medicinal Inorganic Chemistry — 2006-2010
Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland.

Masters in Chemistry (First Class) — 2002-2006
The University of York, United Kingdom.

Awards and Honours

Swiss National Science Foundation Postdoctoral Fellowship — 2011-2013

ARC Discovery Early Career Researcher Award (DECRA) — 2013-2016

Research Experience

Current: Rational design of novel metal-based chaperones for tumour-selective drug delivery — 2013- present
ARC DECRA Fellow at the University of Sydney, Sydney, Australia
Research areas: Drug delivery, Photochemistry, Inorganic chemistry

Postdoctoral research: Rational design of hypoxia selective anticancer drugs — 2011-2012
Swiss National Science Foundation Postdoctoral Fellow at the University of Sydney, Sydney, Australia
Research areas: Anticancer drug design, Fluorescence microscopy, Inorganic chemistry

PhD: Novel organometallic ruthenium complexes for selective activation in tumour cells — 2006-2010
EPFL, Lausanne, Switzerland
Research areas: Medicinal chemistry, Anticancer drug design, Organometallic chemistry

Masters: Spectroelectrochemical behaviour of [Ru(bpy)(CO)Cl_3] and its derivatives — 2005-2006
Universite Joseph Fourier,Grenoble, France.
Research areas: Electrochemistry, Inorganic chemistry, Catalysis

Undergraduate: Synthetic and X-ray fibre diffraction studies on Polyd(A)±Polyd(T) DNA — 2004-2005
Institut Laue-Langevin, Grenoble, France.
Research areas: Structural biology, X-ray fibre diffraction

Teaching Experience

Supervision of masters and honours project students — 2008-2012

Laboratory demonstrator for second, third and fourth year students — 2007-2010

Technical Skills

Synthetic:	Synthesis and purification of air-sensitive organometallic and inorganic compounds using Schlenk and glove box techniques. Ligand orientated organic synthesis
Analytical:	NMR (multinuclear, 2D), UV-Vis and IR spectroscopy. Electrospray ionisation mass spectrometry. Cyclic voltammetry. Structure solution and refinement of crystallographic data.
Biological:	Maintenance of various cell lines. Cytotoxicity and uptake assays. Fluorescence and confocal microscopy. Gel electrophoresis. Protein crystallisation.

IT and language skills

IT:	Use of scientific and processing software: Scifinder, ChemDraw, Origin, Scientist and Microsoft Word and Excel.
Languages:	Native English, fluent French.

Conferences attended

International Conference of Bioinorganic Chemistry, Grenoble, France	2013
International Conference of Bioinorganic Chemistry, Vancouver, Canada	2011
Swiss Chemical Society fall meeting (Oral presentation)	2009
Hands on course in proteins and proteomics (University of Lisbon)	2008
Swiss Chemical Society fall meeting (Poster prize)	2008
Symposium on Medicinal Organometallic Chemistry, St. Martin in der Pfalz, Germany (Oral presentation)	2008
International Conference of Bioinorganic Chemistry, Vienna, Austria	2007

Publications

22) **A. K. Renfrew**, N. S. Bryce, T. W. Hambley, Delivery and release of curcumin by a hypoxia-activated cobalt chaperone: a XANES and FLIM study, *Chem. Sci.* **2013**, *4*, 3731-3739.

21) N. Yamamoto, **A. K. Renfrew**, B. J. Kim, N. S. Bryce, T. W. Hambley, Dual targeting of hypoxic and acidic tumor environments with a cobalt(III) chaperone complex, *J. Med. Chem.* **2012**, 11031-11021.

20) P. Govender, **A. K. Renfrew**, C. M. Clavel, P. J. Dyson, B. Therrien, G. S. Smith, Antiproliferative activity of chelating N,O- and N,N-ruthenium(II) arene functionalised poly(propyleneimine) dendrimer scaffolds, *Dalton Trans* **2011**, *40*, 1158-1167.

19) **A. K. Renfrew**, L. Juillerat-Jeanneret, P. J. Dyson, Adding diversity to ruthenium(II)-arene anticancer (RAPTA) compounds via click chemistry: the influence of hydrophobic chains, *J. Organomet. Chem.* **2011**, *696*, 772-779.

18) H. Amouri, J. Moussa, **A. K. Renfrew**, P. J. Dyson, M. Noelle Rager, L.-M. Chamoreau, Discovery, structure and anticancer activity of an iridium complex of diselenobenoquinone, *Angew. Chem. Int. Ed.* **2010**, *49*, 7530-7533.

17) **A. K. Renfrew**, A. E. Egger, R. Scopelliti, C. G. Hartinger, P. J. Dyson, Synthesis and characterisation of the water soluble bis-phosphine complex $[Ru(\eta^6\text{-cymene})(PPh_2(o\text{-}C_6H_4O)\kappa^2\text{-P,O})(pta)Cl]^+$ and an investigation of its cytotoxic effect, *Comptes Rendus Chimie* **2010**, *13*, 1144-1150 *(Invited publication)*.

16) J. Mattsson, O. Zava, **A. K. Renfrew**, Y. Sei, K. Yamaguchi, P. J. Dyson, B. Therrien, Drug delivery of lipophilic pyrenyl derivatives by encapsulation in a water soluble metalla-cage, *Dalton Trans.* **2010**, 8248-8255.

15) A. E. Egger, C. G. Hartinger, **A. K. Renfrew**, P. J. Dyson, Metabolization of $[Ru(\eta^6\text{-}C_6H_5CF_3)(pta)Cl_2]$: a cytotoxic RAPTA-type complex with a strongly electron-withdrawing ligand, *J. Biol. Inorg. Chem.* **2010**, *15*, 919-927.

14) **A. K. Renfrew**, R. Scopelliti, P. J. Dyson, The use of perfluorinated phosphines to provide thermomorphic anticancer complexes for heat-based tumour targeting, *Inorg. Chem.* **2010**, *49,* 2239-2246 .

13) J. Schulz, **A. K. Renfrew**, I. Císorová, P. J. Dyson, P. Stepnicka, Synthesis and anticancer activity of chalcogenide derivatives and palladium(II) and platinum(II) complexes derived from a polar ferrocene phosphanyl-carboxamide, *Appl. Organomet. Chem.* **2010**, *24*, 392-397. *J. Organomet. Chem.* **2009**, *694*, 3470-3476.

12) G. Suss-Fink, F.-A. Khan, L. Juillerat-Jeanneret, P. J. Dyson, **A. K. Renfrew**, Synthesis and Anticancer Activity of Long-Chain Isonicotinic Ester Ligand-Containing Arene Ruthenium Complexes and Nanoparticles, *J. Cluster Sci.* **2010**, *21*, 313-324.

11) P. Govender, N. C. Antonels, J. Mattsson, **A. K. Renfrew**, P. J. Dyson, J. R. Moss, B. Therrien, G. S. Smith, Anticancer activity of multinuclear arene ruthenium complexes coordinated to dendritic polypyridyl scaffolds, *J. Organomet. Chem.* **2009**, *694*, 3470-3476.

10) **A. K. Renfrew**, A. D. Phillips, E. Tapavicza, R. Scopelliti, U. Rothlisberger, P. J. Dyson, Tuning the Efficacy of Ruthenium(II)-Arene (RAPTA) Antitumor Compounds with Fluorinated Arene Ligands, *Organometallics* **2009**, *28*, 5061-5071.

9) F. Hartl, **A. K. Renfrew**, F. Lafolet, T. Mahabiersing, M. J. Calhorda, S. Chardon-Noblat, M. Haukka, A. Deronzier, Soluble Redox-Active Polymetallic Chains $[\{Ru0(CO)(L)(bpy)\}_m]_n$ (bpy = 2,2'-bipyridine, L = PrCN, Cl-; m = 0, -1): Electrosynthesis and Characterization, *Inorg. Chem*. **2009**, *48*, 8233-8244.

8) J. Mattsson, P. Govindaswamy, **A. K. Renfrew**, P. J. Dyson, P. Stepnicka, G. Suss-Fink, B. Therrien, Synthesis, Molecular Structure, and Anticancer Activity of Cationic Arene Ruthenium Metallarectangles, *Organometallics* **2009**, *28*, 4350-4357.

7) **A. Renfrew**, Ruthenium(II) arene compounds as versatile anticancer agents, *Chimia* **2009**, *63*, 217-219 (*Invited publication*).

6) M. Auzias, J. Gueniat, B. Therrien, G. Suss-Fink, **A. K. Renfrew**, P. J. Dyson, Arene-ruthenium complexes with ferrocene-derived ligands: Synthesis and characterization of complexes of the type $[Ru(\eta^6\text{-arene})(NC_5H_4CH_2NHOC\text{-}C_5H_4FeC_5H_5)Cl_2]$ and $[Ru(\eta^6\text{-arene})(NC_3H_3N(CH_2)_2O_2C\text{-}C_5H_4FeC_5H_5)Cl_2]$, *J. Organomet. Chem.* **2009**, *694*, 855-861.

5) **A. K. Renfrew**, A. D. Phillips, A. E. Egger, C. G. Hartinger, S. S. Bosquain, A. A. Nazarov, B. K. Keppler, L. Gonsalvi, M. Peruzzini, P. J. Dyson, Influence of Structural Variation on the Anticancer Activity of RAPTA-Type Complexes: ptn versus pta, *Organometallics*, **2009**, *28*, 1165-1172.

4) S. Chardon-Noblat, **A. Renfrew**, F. Lafolet, A. Deronzier, M. Jakonen, E. Laurila, M. Haukka, An easy electrochemical and chemical synthesis of $[Ru(bpy)(CH_3CN)_2Cl_2]$: a synthon for heteroleptic tris(diimine) Ru(II) complexes, *Dalton Trans*. **2008**, 5891-5896.

3) M. Gras, B. Therrien, G. Suess-Fink, P. Stepnicka, **A. K. Renfrew**, P. J. Dyson, Water-soluble arene ruthenium complexes containing pyridinethiolato ligands: Synthesis, molecular structure, redox properties and anticancer activity of the cations $[(\eta^6\text{-arene})Ru(p\text{-}SC_5H_4NH)_3]^{2+}$, *J. Organomet. Chem*. **2008**, *693*, 3419-3424.

2) B. Therrien, G. Suess-Fink, P. Govindaswamy, **A. K. Renfrew**, P. J. Dyson, The "complex-in-a-complex" cations $[(acac)2M\subset Ru_6\text{-}(p\text{-}iPrC_6H_4Me)_6(tpt)_2(dhbq)_3]^{6+}$: a trojan horse for cancer cells, *Angew. Chem. Int. Ed*. **2008**, *47*, 3773-3776.

1) C. A. Vock, **A. K. Renfrew**, R. Scopelliti, L. Juillerat-Jeanneret, P. J. Dyson, Influence of the diketonato ligand on the cytotoxicities of $[Ru(\eta^6\text{-}p\text{-cymene})(R_2acac)(PTA)]^+$ complexes (PTA = 1,3,5-triaza-7-phosphaadamantane), *Eur. J. Inorg. Chem.* **2008**, *10*, 1661-1671.