

PERSONAL INFORMATION

Family name, First name: **Mackereth, Cameron**

ORCID: **0000-0002-0776-7947**

Research ID: **F-7946-2013**

Date of birth: **04 August 1972**

Nationality: **Canada**

URL for web site: **<http://nmrbordeaux.org/>**

• EDUCATION

- 2015 HDR, *Habilitation to direct research*
Health and Life Sciences, Univ. Bordeaux, France
- 2003 PhD (Biochemistry and Molecular Biology)
Faculty of Medicine, University of British Columbia, Canada
- 1996 BSc (Biochemistry)
Faculty of Science, University of Waterloo, Canada

• CURRENT POSITIONS

- 2011 – Senior Research Associate (*Chargé de recherche de première classe*, CR1)
INSERM, research unit U1212, ‘Nucleic acids: Natural and Artificial Regulation’
- 2007 – Group Leader
Institut Européen de Chimie et Biologie, Pessac, France

• PREVIOUS POSITIONS

- 2003 – 2007 Postdoc, Structural and Computational Biology, European Molecular Biology
Laboratory, Heidelberg, Germany
- 1995 – 1996 Research Assistant, Merck Frosst Centre for Therapeutic Research, Montreal, Canada
- 1994 Lab Technician, Wellesley Hospital Research Institute, Toronto, Canada
- 1994 Toxicology Evaluator, Health Canada – Pesticides Division, Ottawa, Canada

• FELLOWSHIPS AND AWARDS

International

- 2011 EMBO Short-term Fellowship
- 2003 – 2005 EMBO Long-term Fellowship

National

- 1996 – 2000 Canadian Natural Sciences and Engineering Research Council, PhD Fellowship
1996 Canadian Society of Chemical Industry Award in Biochemistry
1995 Canadian Society for Chemistry Silver Medal
1991 – 1996 Canada Scholarship

University

- 2000 – 2001 University Graduate Fellowship (University of British Columbia, Canada)
1999 S. H. Zbarsky Scholarship (University of British Columbia, Canada)
1995 Eli Lilly Corporate Work Report Award (University of Waterloo, Canada)
1994 – 1996 Science Faculty Biochemistry Upper Year Scholarship (University of Waterloo, Canada)
1993 Bruce Wyler Kelly Memorial Prize (University of Waterloo, Canada)
1992 Hewlett-Packard (Canada) Limited Award (University of Waterloo, Canada)
1992 University of Waterloo Entrance Scholarship (University of Waterloo, Canada)

Conference

- 2002 Experimental NMR Conference Student Travel Award

PUBLICATIONS

39. Collie GW, Bailly R, Pulka-Ziach K, Lombardo CM, Mauran L, Taib-Maamar N, Dessolin J, Mackereth CD, Guichard G. Molecular Recognition within the Cavity of a Foldamer Helix Bundle: Encapsulation of Primary Alcohols in Aqueous Conditions. *J Am Chem Soc.* 2017 May 3;139(17):6128-6137. doi: 10.1021/jacs.7b00181. Epub 2017 Mar 15. PubMed PMID: 28234005.
38. Jewginski M, Granier T, Langlois d'Estaintot B, Fischer L, Mackereth CD, Huc I. Self-Assembled Protein-Aromatic Foldamer Complexes with 2:3 and 2:2:1 Stoichiometries. *J Am Chem Soc.* 2017 Mar 1;139(8):2928-2931. doi:10.1021/jacs.7b00184. Epub 2017 Feb 14. PubMed PMID: 28170240.
37. Soufari H, Mackereth CD. Conserved binding of GCAC motifs by MEC-8, couch potato, and the RBPMs protein family. *RNA.* 2017 Mar;23(3):308-316. doi:10.1261/rna.059733.116. Epub 2016 Dec 21. PubMed PMID: 28003515; PubMed Central PMCID: PMC5311487.
36. Upadhyay SK, Mackereth CD. (1)H, (15)N and (13)C backbone and side chain resonance assignments of the RRM domain from human RBM24. *Biomol NMR Assign.* 2016 Oct;10(2):237-40. doi: 10.1007/s12104-016-9674-y. Epub 2016 Mar 22. PubMed PMID: 27002326.
35. Lombardo CM, Collie GW, Pulka-Ziach K, Rosu F, Gabelica V, Mackereth CD, Guichard G. Anatomy of an Oligourea Six-Helix Bundle. *J Am Chem Soc.* 2016 Aug 24;138(33):10522-30. doi: 10.1021/jacs.6b05063. Epub 2016 Aug 15. PubMed PMID: 27434817.
34. Jewginski M, Fischer L, Colombo C, Huc I, Mackereth CD. 2016. Solution observation of dimerization and helix handedness induction in a human carbonic anhydrase-helical aromatic amide foldamer complex. *ChemBioChem* doi: 10.1002/cbic.201500619.
33. Collie GW, Pulka-Ziach K, Lombardo CM, Fremaux J, Rosu F, Decossas M, Mauran L, Lambert O, Gabelica V, Mackereth CD, Guichard G. 2015. Shaping quaternary assemblies of water-soluble non-peptide helical foldamers by sequence manipulation. *Nat Chem* 7:871-878.

32. Xu X, Pérébasquine N, Minvielle-Sébastien L, Fribourg S, Mackereth CD. 2015. Chemical shift assignments of a new folded domain from yeast Pcf11. *Biomol NMR Assign* 9:421-425.
31. Hennig J, Warner LR, Simon B, Geerlof A, Mackereth CD, Sattler M. 2015. Structural analysis of protein-RNA complexes in solution using NMR paramagnetic relaxation enhancements. *Methods Enzymol* 558:333-362.
30. Chandramouli N, Ferrand Y, Lautrette G, Kauffmann B, Mackereth CD, Laguerre M, Dubreuil D, Huc I. 2015. Iterative design of a helically folded aromatic oligoamide sequence for the selective encapsulation of fructose. *Nat Chem* 7:334-341.
29. Mackereth CD. 2014. Splicing factor SUP-12 and the molecular complexity of apparent cooperativity. *Worm* 3:e991240.
28. Amrane S, Rebora K, Zniber I, Dupuy D, Mackereth CD. 2014. Backbone-independent nucleic acid binding by splicing factor SUP-12 reveals key aspects of molecular recognition. *Nat Commun* 5:4595.
27. Huang JR, Warner LR, Sanchez C, Gabel F, Madl T, Mackereth CD, Sattler M, Blackledge M. 2014. Transient electrostatic interactions dominate the conformational equilibrium sampled by multidomain splicing factor U2AF65: a combined NMR and SAXS study. *J Am Chem Soc* 136:7068-7076.
26. Amrane S, Mackereth CD. 2014. Protein chemical shift assignments of the unbound and RNA-bound forms of the alternative splicing factor SUP-12 from *C. elegans*. *Biomol NMR Assign* 8:109-12.
25. Monneau YR, Soufari H, Nelson CJ, Mackereth CD. 2013. Structure and activity of the peptidylprolyl isomerase domain from the histone chaperone Fpr4 toward histone H3 proline isomerization. *J Biol Chem* 288:25826-25837.
24. Gudavicius G, Soufari H, Upadhyay SK, Mackereth CD, Nelson CJ. 2013. Resolving the functions of peptidylprolyl isomerases: insights from the mutagenesis of the nuclear FKBP25 enzyme. *Biochem Soc Trans* 41:761-768.
23. Mackereth CD, Sattler M. 2012. Dynamics in multi-domain protein recognition of RNA. *Curr Opin Struct Biol* 22:287-96.
22. Monneau YR, Nelson CJ, Mackereth CD. 2012. Chemical shift assignments of the catalytic domain from the yeast proline isomerase Fpr4p. *Biomol NMR Assign* 6:123-126.
21. Mackereth CD, Madl T, Bonnal S, Simon B, Zanier K, Gasch A, Rybin V, Valcárcel J, Sattler M. 2011. Multi-domain conformational selection underlies pre-mRNA splicing regulation by U2AF. *Nature* 475:408-411.
20. Moreno-Morcillo M, Minvielle-Sébastien L, Fribourg S, Mackereth CD. 2011. Locked tether formation by cooperative folding of Rna14p monkeytail and Rna15p hinge domains in the yeast CF IA complex. *Structure* 19:534-545.
19. Moreno-Morcillo M, Minvielle-Sébastien L, Mackereth C, Fribourg S. 2011. Hexameric architecture of CstF supported by CstF-50 homodimerization domain structure. *RNA* 17:412-418.
18. Mackereth CD. 2011. Chemical shift assignments of a minimal Rna14p/Rna15p heterodimer from the yeast cleavage factor IA complex. *Biomol NMR Assign* 5:93-95.

17. Mourão A, Varrot A, Mackereth CD, Cusack S, Sattler M. 2010. Structure and RNA recognition by the snRNA and snoRNA transport factor PHAX. *RNA* 16:1205-1216.
16. Simon B, Madl T, Mackereth CD, Nilges M, Sattler M. 2010. An efficient protocol for NMR-spectroscopy-based structure determination of protein complexes in solution. *Angew Chem Int Ed Engl* 49:1967-1970.
15. Kang HS, Nelson ML, Mackereth CD, Schärpf M, Graves BJ, McIntosh LP. 2008. Identification and structural characterization of a CBP/p300-binding domain from the ETS family transcription factor GABP alpha. *J Mol Biol* 377:636-646.
14. Soares LM, Zanier K, Mackereth C, Sattler M, Valcárcel J. 2006. Intron removal requires proofreading of U2AF/3' splice site recognition by DEK. *Science* 312:1961-1965.
13. Macauley MS, Errington WJ, Schärpf M, Mackereth CD, Blaszczyk AG, Graves BJ, McIntosh LP. 2006. Beads-on-a-string, characterization of ETS-1 sumoylated within its flexible N-terminal sequence. *J Biol Chem* 281:4164-4172.
12. Wiesner S, Hantschel O, Mackereth CD, Superti-Furga G, Sattler M. 2005. NMR assignment reveals an alpha-helical fold for the F-actin binding domain of human Bcr-Abl/c-Abl. *J Biomol NMR* 32:335.
11. Hantschel O, Wiesner S, Güttler T, Mackereth CD, Rix LL, Mikes Z, Dehne J, Görlich D, Sattler M, Superti-Furga G. 2005. Structural basis for the cytoskeletal association of Bcr-Abl/c-Abl. *Mol Cell* 19:461-473.
10. Mackereth CD, Simon B, Sattler M. 2005. Extending the size of protein-RNA complexes studied by nuclear magnetic resonance spectroscopy. *Chembiochem* 6:1578-1584.
9. Macauley MS, Errington WJ, Okon M, Schärpf M, Mackereth CD, Schulman BA, McIntosh LP. 2004. Structural and dynamic independence of isopeptide-linked RanGAP1 and SUMO-1. *J Biol Chem* 279:49131-49137.
8. Mackereth CD, Schärpf M, Gentile LN, MacIntosh SE, Slupsky CM, McIntosh LP. 2004. Diversity in structure and function of the Ets family PNT domains. *J Mol Biol* 342:1249-1264.
7. Tognon CE, Mackereth CD, Somasiri AM, McIntosh LP, Sorensen PH. 2004. Mutations in the SAM domain of the ETV6-NTRK3 chimeric tyrosine kinase block polymerization and transformation activity. *Mol Cell Biol* 24:4636-50.
6. Mackereth CD, Schärpf M, Gentile LN, McIntosh LP. 2002. Chemical shift and secondary structure conservation of the PNT/SAM domains from the ets family of transcription factors. *J Biomol NMR* 24:71-72.
5. Ramachander R, Kim CA, Phillips ML, Mackereth CD, Thanos CD, McIntosh LP, Bowie JU. 2002. Oligomerization-dependent association of the SAM domains from *Schizosaccharomyces pombe* Byr2 and Ste4. *J Biol Chem* 277:39585-39593.
4. Slipetz D, Buchanan S, Mackereth C, Brewer N, Pellow V, Hao C, Adam M, Abramovitz M, Metters KM. 2001. Sequestration and phosphorylation of the prostaglandin E2 EP4 receptor: dependence on the C-terminal tail. *Biochem Pharmacol* 62:997-1012.

3. Christendat D, Yee A, Dharamsi A, Kluger Y, Savchenko A, Cort JR, Booth V, Mackereth CD, Saridakis V, Ekiel I, Kozlov G, Maxwell KL, Wu N, McIntosh LP, Gehring K, Kennedy MA, Davidson AR, Pai EF, Gerstein M, Edwards AM, Arrowsmith CH. 2000. Structural proteomics of an archaeon. *Nat Struct Biol* 7:903-909.
2. Mackereth CD, Arrowsmith CH, Edwards AM, McIntosh LP. Zinc-bundle structure of the essential RNA polymerase subunit RPB10 from *Methanobacterium thermoautotrophicum*. *Proc Natl Acad Sci U S A* 97:6316-6321.
1. Slusky CM, Gentile LN, Donaldson LW, Mackereth CD, Seidel JJ, Graves BJ, McIntosh LP. Structure of the Ets-1 pointed domain and mitogen-activated protein kinase phosphorylation site. 1998. *Proc Natl Acad Sci U S A* 95:12129-34.