

1a. Personal details			
Full name	Prof.	Renwick	<i>Charles Joseph</i> Dobson
Present position	Co-Director of Biomolecular Interaction Centre; Professor		
Organisation/Employer	University of Canterbury		
Contact Address	School of Biological Sciences		
	Private Bag 4800, Christchurch	Post code	8140
Work telephone	+64 3 369-5145 x 95145	Mobile	
Email	renwick.dobson@canterbury.ac.nz		
Personal website	https://www.dobsonlab.org/		
	https://scholar.google.ca/citations?user=uFUKz5kAAAAJ&hl=en		

1b. Academic qualifications	
2004	PhD , Biochemistry, University of Canterbury
1996	B.Sc. , Double Major: Chemistry & Biochemistry, University of Canterbury

1c. Professional positions held

- 2019– **Professor**, School of Biological Sciences, University of Canterbury.
- 2016– **Deputy director** (2021–, succession plan), Director (2018–20), Co-director (2016–18) of the Biomolecular Interaction Centre (BIC), a national \$5.5M p.a. research unit.
- 2016–18 **Associate Professor**, School of Biological Sciences, University of Canterbury.
- 2012–15 **Senior Lecturer**, School of Biological Sciences, University of Canterbury.
- 2013– **Honorary Research Fellow**, Department of Biochemistry and Molecular Biology, University of Melbourne.
- 2010–11 **Lecturer**, School of Biological Sciences, University of Canterbury.
- 2009–12 **C.R. Roper Senior Research Fellow**, Dept. Biochemistry and Molecular Biology, University of Melbourne.
- 2007–09 **Postdoctoral Research Fellow**, Department of Biochemistry and Molecular Biology, University of Melbourne.
- 2006–07 **Lecturer**, School of Biological Sciences, University of Canterbury (Short term contract: undergraduate lectures, all levels).
- 2004–07 **Postdoctoral Research Fellow**, School of Biological Sciences, University of Canterbury.
- 2001–07 **Biochemistry Laboratory Supervisor/Demonstrator**, School of Biological Sciences, University of Canterbury.

1d. Present research/professional speciality

My position is **40% research**, 40% teaching (~90 undergraduate contact hours p.a.) and 20% administration (Dept. Director of the BIC).

My research centres on the molecular interactions critical to biological function and has had clear impact internationally through journal articles, citations, patents and commercial uptake. I have authored 143 papers in international peer-reviewed journals and filed two patents. Publication metrics: 16,011 citations, *m*-index (*h*-index / years since PhD) = 2; *h*-index = 36, *i10*-index = 89 (June 2022, Google). Since 2017, I have authored 59 papers—demonstrating sustained productivity and excellence. I work with a group of four staff and 14 students on the following general themes:

- 1) *How cells transport nutrients across lipid membranes: membrane transporter proteins.* With the support of Marsden funding (\$870K, 2020–23), we discovered a novel mechanism for TRAP transporters. Previous Marsden funding (\$770K, 2016–19) allowed us to unravel the molecular details of bacterial sialic acid import and degradation. We focused on sodium-solute symporter bacterial membrane transporters and pathway regulation. This work resulted in publication of two papers in *Nature*

Communications (2021 Impact Factor 14.9).

- 2) *Understanding and engineering new food systems.* We are working with Profs. Emily Parker and Geoff Jameson to develop new recombinant protein sources using funding from Riddet CoRE (\$500K, 2021–25). We have PhD projects with AgResearch and Plant & Food Research that seek to understand enzymes in fermented foods systems. Funding from MBIE (\$4M, 2020–23) supports understanding and development of new hybrid cell agriculture foods in collaboration with A*Star (Singapore) and international food companies (including Motif Foodworks).
- 3) *Understanding and engineering nature's catalysts: Enzymes.* We have published widely and extensively on enzyme mechanism, evolution, and engineering. Recent work watches (literally) the evolution of new enzymes (funded by Marsden FS \$307K; 2011–15 and US ARO \$397K, 2011–16). Research on the enzymology of lysine biosynthesis and sialic acid degradation, including work on pathway regulation and inhibition, was funded by the NIH (US\$435K, AI, 2016–19) in collaboration with Prof. André Hudson (Rochester Institute, NY, USA).
- 4) *Diagnostic assay and device development.* Funding by MBIE (\$1M, 2013–15) led to our discovery of new biomarkers. We recently developed a simple, widely applicable assay for use in the agricultural, food, and health sectors, which was also funded by MBIE (\$1M, 2017–21) and led to a PCT and provisional patent.

I review manuscripts for top journals (*Nat Commun*, *PNAS*, *ChemBioChem*, *Cell Struct*, *Biochem J*, *Acta Cryst D*, *PLoS One*, *Biochemistry*, *Acta Cryst F*, and *FEBS J*)

I review grants for the US Army Research Office; Ministry of Business, Innovation and Employment (MBIE); NZ Cancer Society; Health Research Council (HRC); Auckland Medical Research Foundation (AMRF); National Science Centre Poland; and National Health and Medical Research Council (NH&MRC) (Australia). I regularly review science applications for the Australian Synchrotron MX & SAXS beamlines.

I have delivered on **NZ\$17M** in external research funding as a PI (2008-).

1e. Total years research experience	15 years (professional experience)
1f. Professional distinctions and memberships (including honours, prizes, scholarships, boards or governance roles, etc.)	

- 2022 Invited speaker, ComBio 2022, Melbourne (Australia)
- 2022 Nominated to serve on the Reference Group for the “*Food waste: A global and local problem*” report by the Office of the Prime Minister’s Chief Science Advisor.
- 2022 Invited speaker, QMB2022, Queenstown.
- 2022 Invited speaker, MacDiarmid Symposium, February 2022
- 2022 Appointed to the MBIE College of Experts.
- 2021 Winner Science New Zealand Awards—Team category (as part of the *Safeguarding the Mauri of Myrtles and Dependant Ecosystems* team)
- 2021 Winner Bridge West Innovation award (\$20K in prize money)
- 2020– Key Researcher, MBIE NZ-Singapore Catalyst, Future Foods (\$4M contract)
- 2020– Principal Investigator, Riddet Institute CoRE (2020 round funded)
- 2020– Investigator, Biological Heritage Science Challenge (\$185K contract)
- 2019–21 Appointed to the Marsden CMP panel
- 2019 Performance-Based Research Fund (PBRF): A, world class (in the top ~10% of all NZ researchers in the category “Molecular, Cellular, and Whole Organism”)
- 2019 Invited speaker (funded) NZ Cryo-EM symposium (Dunedin).
- 2018– Appointed to a NZ Health Research Council scientific panel.
- 2018 Winner of the UC/Astrolab Innovation award (\$25K in prize money).
- 2018 Winner of a UC Innovation award (\$25K in prize money).
- 2018–19 Appointed Chair of the Australian Synchrotron BioSAXS Advisory Committee.

- 2018– Appointed to the scientific panel for the Canterbury Medical Health Foundation.
 2018–19 Elected convener of AUC2019, to be held in Christchurch, August 2019.
 2017–18 Served on a NZ Health Research Council scientific panel
 2017 Invited speaker Crystal 31 (Perth, Aust.).
 2017–20 Appointed to the Australian Synchrotron Program Advisory Committee, SAXS.
 2017 Instructor, 2017 Advanced AUC Workshop, Delaware, USA (funded).
 2017 Invited speaker NZSBMB annual conference, Dunedin, (funded).
 2017 Invited Speaker, QMB2017, Proteins Symposium, Queenstown (funded).
 2017 Program Committee, AUC2017, Glasgow, Scotland.
 2017 Invited Speaker, InStem Institute, Bangalore, India (funded).
 2016 Winner of UC TechJump Start award (\$20K prize).
 2016 Organising Committee, QMB2016, Nelson (invited speaker/session chair).
 2016 Finalist for the Kiwinet Awards (w/ CSL Ltd.)—Partnerships category.
 2016–19 Director of Biochemistry, University of Canterbury
 2015 Organising Committee, Combio2015, Melbourne, Aust.
 2014– Associate Investigator, Riddet Institute.
 2014 Invited Speaker, Combio2014 (Proteins Stream, Canberra, Aust.).
 2013–16 Appointed Dept. Director of Biochemistry, University of Canterbury.
 2013 Co-convener for the “E³ Symposium”, QMB2013.
 2013 Invited Speaker, 37th Conference of the Australian Society for Biophysics.
 2013 Associate Investigator, Maurice Wilkins Centre for Molecular Biodiscovery.
 2012–16 Elected Treasurer, NZ Society of Biochemistry and Molecular Biology.
 2012–14 Co-Chair of the Australian Synchrotron MX Program Advisory Committee (PAC).
 2011 Co-convener for the “Biointeractions Symposium” (QMB2011).
 2011– Appointed to the Academic Editorial Board of the journal *PLoS One*.
 2010– Primary Investigator, BIC, University of Canterbury.
 2010–12 Affiliate Investigator, Maurice Wilkins Centre for Molecular Biodiscovery.
 2010 Research Fellow, Photon Factory, Tsukuba, Japan (Oct-Nov, 2010).
 2010 Invited Speaker, Photon Factory, Tsukuba, Japan.
 2010 Invited Speaker, 2nd NZ Structural Biology meeting, Auckland, New Zealand.
 2009–12 Awarded C.R. Roper Senior Research Fellowship, University of Melbourne.
 2009 Invited Speaker, ComBio2009, Christchurch, New Zealand.
 2009 Invited Speaker, ETH, Zurich, Switzerland (host Prof. van Gunsteren).
 2009 Invited Speaker, EMBL Hamburg, Germany (host Prof. Weiss).
 2008 Invited Speaker, 4th AOHUPO and 2nd PRICPS Conference, Cairns, AUS.
 2007–09 Awarded USA ARO Research Fellowship, Department of Biochemistry and Molecular Biology, University of Melbourne.
 2004–07 Awarded Postdoctoral Position (Royal Society, Marsden), School of Biological Sciences, University of Canterbury.
 2004 Best Poster Prize at the 29th Lorne Conference on Protein Structure and Function.
 2003–04 NZ Institute of Chemistry Travel Grants to attend international conferences.
 2000–03 Crop and Food Ltd PhD Scholarship.

Memberships: NZSBMB, SCANZ, ASBMB, RSNZ, NZIC.

1g. Total number of peer reviewed publications and patents	Journal articles	Book chapters	Conference proceedings	Patents
	143	4	>100	2

My position is 40% research

2a. Research publications and dissemination

Peer-reviewed journal articles

Publications in the last 5 years (56 pubs)

2022

143. Turk L, Currie M, **Dobson R**, Comoletti D **2022**. Structure of Reelin repeat 8 and the adjacent C-terminal region. *Biophys J* (in press) (Q1, IF 4.0)
142. T Bozzola, M Scalise, C Larsson, M Newton-Vesty, *et al.*, **Dobson R**, Indiveri C, Schelin J, Nilsson U, Ellervik U **2022**. Sialic acid derivatives inhibit SiaT transporters and delay bacterial growth. *ACS Chem Biol* (in press) (Q1, IF 5.1)
141. Meffan R, Menges J, Dolamore F, Mak D, Fee C, **Dobson R***, Nock V **2022**. Capillary-Field Effect Transistors. *Microsyst Nanoeng* 8:33 (Q1, IF 7.2)
140. Love M, Coombes D, Ismail S, Billington C, **Dobson R*** **2022**. The structure and function of modular *Escherichia coli* O157:H7 bacteriophage FTBEc1 endolysin, LysT84: defining a new endolysin catalytic subfamily. *Biochem J* 479:207 (Q1, IF 3.9)
139. Harper A, **Dobson R**, Morris V, Moggré G **2022**. Fermentation of plant-based dairy alternatives by lactic acid bacteria. *Microbial Biotech* 15:1404 (Q1, IF 5.8)
138. Board A, Crowther J, Acevedo-Fani A, Meisrimler C, Jameson G, **Dobson R*** **2022**. How plants solubilise seed fats: revisiting oleosin structure and function to inform commercial applications. *Biophys Rev* 14:257 (Q1, IF 4.4)

2021

137. Wood D, **Dobson R***, Horne C* **2021**. Using Cryo-EM to uncover mechanisms of bacterial transcriptional regulation. *Biochem Soc Trans* 49:2711 (Q1, IF 5.4)
136. Arif T, Currie M, **Dobson R**, Newson H, Poonthiyil V, Fairbanks A, North R, Rendle P **2021**. Synthesis of *N*-acetylmannosamine-6-phosphate derivatives to investigate the mechanism of *N*-acetylmannosamine-6-phosphate 2-epimerase. *Carbohydr Res* 510:108445 (Q3, IF 2.1)
135. Lassé M, Stampfli A, Orban T, Gerrard J, Fairbanks A, Pattinson N, **Dobson R*** **2021**. Reaction dynamics and residue identification of haemoglobin modification by acrolein, a lipid-peroxidation by-product. *BBA Gen Subjects* 1865:13 (Q1, IF 3.7)
134. Gilmour L, Crowther J, Porebski B, Heath S, Pattinson N, Owen M, Fredericks R, Buckle A, Fee C, Göbl C, **Dobson R*** **2021**. Molecular basis of a redox switch: molecular dynamics simulations and surface plasmon resonance provide insight into reduced and oxidised angiotensinogen. *Biochem J* 478:3319 (Q1, IF 3.9)
133. Currie M, Manjunath L, Horne C, Rendle P, Subramanian R, Friemann R, Fairbanks A, Muscroft-Taylor M, North R, **Dobson R*** **2021**. *N*-Acetylmannosamine-6-phosphate 2-epimerase uses a novel substrate-assisted mechanism to catalyze amino sugar epimerization. *J Biol Chem* 297:10111 (Q1, IF 5.2)
132. Davies J, Currie M, Wright J, Newton-Vesty M, North R, Mace P, Allison J, **Dobson R*** **2021**. Selective nutrient transport in bacteria: multicomponent transporter systems reign supreme. *Frontiers Mol Biosci* 8:699222 (Q1, IF 5.2)
131. Love M, Coombes D, Manners S, Abeysekera G, Billington C, **Dobson R*** **2021**. Molecular basis for *Escherichia coli* O157:H7 phage FAHEc1 endolysin function and engineering increased thermal stability. *Viruses* 13:1101. (Q1, IF 5.0, 3 cites)
130. Klionsky D *et al.* **Dobson R et al.** **2021**. Guidelines for the use and interpretation of assays for monitoring autophagy. *Autophagy* 17:1 (Q1, IF 16.0, 56 cites)
129. Horne C, Venugopal H, Panjikar S, Wood D, Henrickson A, North R, Murphy J, Friemann R, Griffin M, Ramm G, Demeler B, **Dobson R*** **2021**. Mechanism of NanR gene repression and allosteric induction of bacterial sialic acid metabolism. *Nat Commun* 12:1 (Q1, IF 14.9, 5 cites)
128. Turk L, Kuang X, Dal Pozzo V, Patel K, Chen M, Huynh K, Currie M, Mitchell D, **Dobson R**, D' Arcangelo G, Dai W, Comoletti D **2021**. The structure-function relationship of a signaling competent, dimeric Reelin fragment. *Structure* 29:1 (Q1, IF 5.0)
127. Parthasarathy A, Borrego E, Savka M, **Dobson R**, Hudson A **2021**. Amino acid-derived secondary metabolites from plants: A potential source to facilitate novel antimicrobial development. *J Biol Chem* 296:100438 (Q1, IF 5.2, 5 cites)
126. Peskin A, Meotti F, Kean K, Göbl C, Peixoto A, Pace P, Horne C, Heath S, Crowther

J, **Dobson R**, Karplus P, Winterbourn C **2021**. Modifying the resolving cysteine affects the structure and hydrogen peroxide reactivity of peroxiredoxin 2. *J Biol Chem* 296:10494 (Q1, IF 5.2)

125. Menges F, Meffan C, Dolamore F, Fee C, **Dobson R***, Nock V* **2021**. New flow control systems in capillaries: Off valves. *Lab on a Chip* 21:205 (Q1, IF 6.8, 6 cites)

2020

124. Crowther J, Broadhurst M, Laue T, Jameson G, Hodgkinson A, Dobson R. (2020) On the utility of fluorescence-detection analytical ultracentrifugation in probing biomolecular interactions in complex solutions: a case study in milk. *Euro Biophys J* 49(8):677–85.

123. Horne, Christopher R., Amy Henrickson, Borries Demeler, and Renwick C. J. Dobson. (2020) Multi-wavelength analytical ultracentrifugation as a tool to characterise protein–DNA interactions in solution. *Euro Biophys J* 49(8): 819–27.

122. Dobson R, Patel T. (2020) Analytical ultracentrifugation: still the gold standard that offers multiple solutions. *Eur Biophys J* 49(8): 673–6.

121. Suzuki H, *et al.* Gerrard J, **Dobson R***, Valéry C* **2020**. Sub-Ångstrom structure of collagen model peptide (GPO)₁₀ shows a hydrated triple helix with pitch variation and two proline ring conformations. *Food Chem* 319:126598 (Q1, IF 7.5)

120. Metcalfe R, Aizel K, Zlatic C, Nguyen P, Morton C, Lio D, Cheng H, **Dobson R**, Parker M, Gooley P, Putoczki T, Griffin M **2020**. The structure of the extracellular domains of human interleukin 11 α -receptor elucidates mechanisms of cytokine engagement. *J Biol Chem* 295:8285

119. Trevelyan S, Brewster J, Burgess A, Crowther J, Cadell A, Parker B, Croucher D, **Dobson R**, Murphy J, Mace P **2020**. Mechanism of preferential complex formation by apoptosis signal-regulating kinases. *Sci Signal* 13: eaay6318 (Q1, IF 8.2, 11 cites)

118. Horne C, Kind L, Davies J, **Dobson R*** **2020**. *Escherichia coli* Yjhc: An oxidoreductase involved in bacterial sialic acid metabolism. *Proteins* 88:654 (Q1, IF 3.8, 10 cites)

117. Meng Y, Sheen C, Magon N, Hampton M, **Dobson R*** **2020**. Structure-function analyses of alkylhydroperoxidase D from *Streptococcus pneumoniae* reveal an unusual three-cysteine active site architecture. *J Biol Chem* 295:2984 (Q1, IF 5.2, 3 cites)

116. Coombes D, Davies J, Newton-Vesty M, Horne C, Setty T, Subramanian R, Moir J, Friemann R, Panjikar S, Griffin M, North R, **Dobson R*** **2020**. The basis for non-canonical ROK family function in *N*-acetylmannosamine kinase from the pathogen *Staphylococcus aureus*. *J Biol Chem* 295:3301 (Q1, IF 5.2, 8 cites)

115. Sugrue E, Coombes D, Wood D, Zhu T, Donovan KA, Dobson RCJ. (2020) The lid domain is important, but not essential, for catalysis of *Escherichia coli* pyruvate kinase. *Euro Biophys J* 49(8): 761–72.

114. Cree S, Chua E, Crowther J, **Dobson R**, Kennedy M **2020**. G-quadruplex structures in amplicon DNA bind to EZ-Tn5 transposase. *Biochimie* 177: 190–7 (IF 4.1)

113. Setty T, Sarkar A, Coombes D, **Dobson R**, Subramanian R **2020**. Structure and Function of *N*-acetylmannosamine kinases from pathogenic bacteria. *ACS Omega* 5: 30923–36 (IF 2.9)

112. Love M, **Dobson R**, Billington C **2020**. Stemming the tide of antibiotic resistance by exploiting bacteriophages. *The Biochemist* 42: 6–11

111. Adams L, Rynkiewicz P, Babbitt G, Mortensen J, North R, **Dobson R**, Hudson A. **2020** Comparative molecular dynamics simulations provide insight into antibiotic interactions: A case study using the enzyme *L,L*-diaminopimelate aminotransferase (DapL). *Front Mol Biosci* Cover 7:46 (IF 4.2)

110. Trevelyan S, Brewster J, Burgess A, Crowther J, Cadell A, Parker B, Croucher D, **Dobson R**, Murphy J, Mace P **2020**. Mechanism of preferential complex formation by Apoptosis Signal-regulating Kinases. *Sci Signal* 13:eaay6318. Cover (IF 6.5)

109. Nouchikian L, Lento C, Donovan K, **Dobson R**, Wilson D **2020**. Comparing the conformational stability of pyruvate kinase in the gas phase and in solution. *J Am Soc Mass Spec* (in press). (IF 2.9)

108. Weatherhead A, Crowther J, Horne C, Meng Y, Coombes D, Currie M, Watkin S, Adams L, Parthasarathy A, **Dobson R***, Hudson A* **2020**. Structure-function studies

of the antibiotic target *L,L*-diaminopimelate aminotransferase from *Verrucomicrobium spinosum* reveal an unusual oligomeric structure. *Biochemistry* 59:2274 (Q1, IF 3.2)

107. Love M, Abeysekera G, Muscroft-Taylor A, Billington C, **Dobson R*** 2020. On the catalytic mechanism of bacteriophage endolysins: Opportunities for engineering. *BBA - Prot Proteom* 1868:1403 (Q1, IF 3.0, 19 cites)

2019

106. Coombes D, Moir J, Poole A, Cooper T, **Dobson R*** 2019. The fitness challenge of studying molecular adaptation. *Biochem Soc Trans* 47:1533 (Q1, IF 5.4)
105. Hoskin T, Crowther J, Cheung J, Epton M, Sly P, Elder P, **Dobson R**, Kettle A, Dickerhof N (2019) Oxidative cross-linking of calprotectin occurs *in vivo*, altering its structure and susceptibility to proteolysis. *Redox Biol* 24:101202
104. McKerchar H, Clerens S, **Dobson R**, Maes E, Dyer J, Gerrard J (2019) Protein-protein crosslinking in food: characterisation methods, consequences and applications. *Trends Food Sci Technol* 86:217
103. Mantravadi P, Kalesh K, **Dobson R**, Hudson A, Parthasarathy A (2019) The quest for novel antibiotics and antimicrobial compounds: Emerging trends in research, development and technologies. *Antibiotics* 8:8
102. Crowther J, Cross P, Oliver M, Leeman M, Bartl A, Weatherhead A, North R, Donovan K, Griffin M, Suzuki H, Hudson A, Kasanmascheff M, **Dobson R** (2019) Structure-function analyses of two plant *meso*-diaminopimelate decarboxylase isoforms reveal that active-site gating provides stereochemical control. *J Biol Chem* 294:8505
101. Gilkes J, Sheen C, Frampton R, Smith G, **Dobson R** (2019) The first purification of functional proteins from the unculturable, genome reduced, bottlenecked alpha-proteobacterium *Candidatus Liberibacter solanacearum*. *Phytopath* 109:1141
100. Davies J, Coombes D, Horne C, Pearce F, Friemann R, North R, **Dobson R** (2019) Solution studies of *S. aureus* *N*-acetylglucosamine-6-phosphate deacetylase and glucosamine-6-phosphate deaminase. *FEBS Lett* 593:52–66

2018

99. Schlechter R, Jun H, Bernach M, Oso S, Boyd E, Muñoz-Lintz D, **Dobson R**, Remus D, Remus-Emsermann M (2018) Chromatic Bacteria—A broad host-range plasmid and chromosomal insertion toolbox for fluorescent protein expression in bacteria. *Front Microbiol* 9:3052
98. Foglizzo M, Middleton A, Burgess A, Crowther J, **Dobson R**, Murphy J, Day C, Mace P (2018) A bidentate Polycomb Repressive-Deubiquitinase complex is required for efficient activity on nucleosomes. *Nat Commun* 9:3932
97. North R, Wahlgren W, Remus D, Scalise M, Kessans S, Dunevall E, Claesson E, Soares da Costa T, Perugini M, Subramanian R, Allison J, Indiveri C, Friemann R, **Dobson R** (2018) The sodium sialic acid symporter from *Staphylococcus aureus* has altered substrate specificity. *Front Chem* 6:233
96. Manjunath L, Guntupalli S, Currie M, North R, **Dobson R**, Nayak V, Subramanian R (2018) Crystal structure and kinetic analysis of *N*-acetylmannosamine-6-phosphate 2-epimerase from *Fusobacterium nucleatum* and *Vibrio cholerae*. *Acta Cryst F* 74:431–40
95. Crowther J, Allison J, Smolenski G, Hodgkinson A, Jameson G & **Dobson R** (2018) The self-association and thermal denaturation of caprine and bovine β -lactoglobulin. *Eur Biophys J* 47:439
94. Atkinson S, Dogovski C, Wood K, Griffin M, Gorman M, Hor L, Reboul C, Buckle A, Wuttke J, Parker M, **Dobson R** & Perugini M (2018) Substrate locking promotes dimer-dimer docking of an enzyme antibiotic target. *Structure* 26:948
93. Wahlgren W[#], Dunevall E[#], North R[#], *et al.*, **Dobson R**, Abramson J, Ramaswamy S, Friemann R (2018) Substrate-bound outward-open structure of a Na⁺-coupled sialic acid symporter reveals a novel Na⁺ site. *Nat Commun* 9:1753
92. Parthasarathy A, Cross P, **Dobson R**, Adams L, Savka M & Hudson A (2018) A three-ring circus: Metabolism of the three proteogenic aromatic amino acids and their role in the health of plants and animals. *Front Mol Biosci* 5:304–30
91. Love M, Bhandari D, **Dobson R** & Billington C (2018). Potential for bacteriophage

endolysins to supplement or replace antibiotics in food production and clinical care. *Antibiotics* 7(1):17

90. Peng F, Widmann S, Wünsche A, Duan K, Donovan K, **Dobson R**, Lenski R, Cooper T (2018) Effects of beneficial mutations in pykF gene vary over time and across replicate populations in a long-term experiment with bacteria. *Mol Biol Evol* 35:202–10
89. Gilkes J, Frampton R, Smith G, **Dobson R** (2018) Potential pathogenicity determinants in the genome of 'Candidatus Liberibacter solanacearum', the causal agent of Zebra Chip disease of potato. *Australas Plant Pathol* 47:119 *Invited review*
88. North R, Horne C, Davies J, Remus D, Muscroft-Taylor A, Goyal P, Ramaswamy S, Friemann R, **Dobson R** (2018) "Just a spoonful of sugar...": import of sialic acid across bacterial cell membranes. *Biophys Rev* 10:219 *Invited review*

2017

87. Pearce F, Hudson A, Loomes K, **Dobson R** (2017) Dihydrodipicolinate synthase: Structure, dynamics, function, and evolution. *Subcell Biochem* 83:271–89
86. Kavianiinia I, Yang S, Kaur H, Harris P, **Dobson R**, Fairbanks A, Brimble M (2017) Synthesis and incorporation of an advanced lipid peroxidation end-product building block into collagen mimetic peptides. *Chem Comm* 53:8459–62
85. Rogov V, Stolz A, Ravichandran A, Law A, Suzuki H, Kniss A, Rios-Szwed D, Löhr F, Wakatsuki S, Dötsch V, Dikic I, **Dobson R*** & McEwan D* (2017) Structural and functional analysis of the GABARAP interaction motif (GIM). *EMBO R* 18:1382–96
Dobson is co-corresponding author
84. North R, Horne C, Davies J, Remus D, Muscroft-Taylor A, Goyal P, Ramaswamy S, Friemann R, **Dobson R** (2017) "Just a spoonful of sugar...": import of sialic acid across bacterial cell membranes. *Biophys Rev* 1-9 *Invited review*

2016

83. Umu S, Poole A, **Dobson R** & Gardner P (2016) Avoidance of stochastic RNA interactions can be harnessed to control protein expression levels in bacteria and archaea. *Elife* 5:e13479 *Featured commentary*
82. North R, Watson A, Pearce G, Muscroft-Taylor A, Friemann R, Fairbanks A, **Dobson R** (2016) Structure and inhibition of N-acetylneuraminidase lyase from methicillin-resistant *Staphylococcus aureus*. *FEBS Lett* 590:4414–28
81. Naqvi K, Patin D, Wheatley M, Savka M, **Dobson R**, Gan H, Barreteau H, Blanot D, Mengin-Lecreul D, Hudson A (2016) Identification and partial characterization of a novel UDP-N-acetylenolpyruvoglucosamine reductase/UDP-N-acetylmuramate:L-alanine ligase fusion enzyme from *Verrucomicrobium spinosum* DSM 4136T. *Front Microbiol* 7:362.
80. Lee L, Joshi N, Pasini R, **Dobson R**, Allison J, Leustek T (2016) Inhibition of arabidopsis growth by the allelopathic compound azetidine-2-carboxylate is due to the low amino acid specificity of cytosolic prolyl-tRNA synthetase. *Plant J* 88:236–46
79. Poen S, Nakatani Y, Opel-Reading H, Lassé M, **Dobson R**, Krause K (2016) Exploring the structure of glutamate racemase from *Mycobacterium tuberculosis* as a template for anti-mycobacterial drug discovery. *Biochem J* 437:1267–80 *Invited cover*
78. Chen K, **Dobson R**, Lucet I, Young S, Pearce F, Blewitt M, Murphy J (2016) The epigenetic regulator Smchd1 contains a functional GHKL-type ATPase domain. *Biochem J* 473:1733–44
77. Cala A, Nadeau M, Abendroth J, Staker B, Reers A, Weatherhead A, **Dobson R**, Myler P, Hudson A (2016) The crystal structure of dihydrodipicolinate reductase from the human-pathogenic bacterium *Bartonella henselae* strain Houston-1 at 2.3 Å resolution. *Acta Cryst F* 72:885–91
76. Donovan K, Zhu S, Liuni P, Peng F, Kessans S, Wilson D, **Dobson R** (2016) Conformational dynamics and allostery in pyruvate kinase. *J Biol Chem* 291:9244–56
75. Klionsky, D. J.; *et al.* (2016) Guidelines for the use and interpretation of assays for monitoring autophagy (3rd edition). *Autophagy* 12:1-222.
74. Donovan K, Atkinson S, Kessans S, Peng F, Cooper T, Griffin M, Jameson G, **Dobson R** (2016) Grappling with anisotropic data, pseudo-merohedral twinning and pseudo-translational non-crystallographic symmetry: A case study involving pyruvate kinase.

Acta Cryst D 72:512–9

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