

# RSC Chemical Biology & Bio-Organic Group Forum

7<sup>th</sup> – 8<sup>th</sup> January 2021

DAY 1

7<sup>th</sup> January (Thursday)

09:00 – 09:15

## Welcome

Dr. Yu-Hsuan Tsai, *Cardiff University*

&

*CBBG Chair – Dr. Manuela Tosin, University of Warwick*

Session Chair: Dr. Yu-Hsuan Tsai

09:15 – 10:05

Plenary  
Lecture

**Prof. Dr. Itaru Hamachi**

*Kyoto University*

Chemical labelling for control of endogenous protein in live cells

10:05 – 10:30

**Dr. Louise J. Walport**

*Imperial College London*

Cyclic peptides can engage a single binding pocket through highly divergent modes

10:30 – 10:55

**Dr. Manuel M. Müller**

*King's College London*

Deciphering p53 signalling with protein semisynthesis

10:55 – 11:15 Coffee break

Session Chair: Dr. Robin Bon

11:15 – 11:20

Partner

**Prof. Dr. Boris Vauzeilles**

*French Chemical Society*

Chemical Biology Group of the French Chemical Society

11:20 – 12:10

**Poster Session 1 – Flash Presentations**

*Presenters in Poster Groups A-E (See Appendix 1)*

12:10 – 12:25

**Presenter 1 in Poster Group A/B/C/D/E**

12:25 – 12:40

**Presenter 2 in Poster Group A/B/C/D/E**

12:40 – 12:55

**Presenter 3 in Poster Group A/B/C/D**

12:55 – 14:00 Lunch

Session Chair: Prof. Dr. Akane Kawamura

14:00 – 14:10

Sponsor

**Dr. Laurent Mathey**

*Frontiers in Chemistry*

<b>14:10 – 14:35</b>	<b>Dr. Louis Y. P. Luk</b> <i>Cardiff University</i> Chemical synthesis and racemic crystallography of bacteriocins reveals an unprecedented salt bridge network
<b>14:35 – 15:00</b>	<b>Dr. Katie Simmons</b> <i>University of Leeds</i> Identification of modulators of the insulin receptor/ IGF1 receptor dimer as a treatment for type 2 diabetes
<b>15:00 – 15:25</b>	<b>Dr. Pavel Starkov</b> <i>Tallinn University of Technology</i> A phenotypic approach to probing cellular outcomes using heterobivalent constructs

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DAY 2 8<sup>th</sup> January (Friday)

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<b>09:00- 09:10</b>	<b>Welcome</b> Dr. Klaus Pors, <i>University of Bradford</i>
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**Session Chair: Dr. Klaus Pors**

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<b>09:10 – 09:35</b>	<b>Dr. Fabrizio Alberti</b> <i>University of Warwick</i> Engineering isoprenoid quinone biosynthesis in yeast
<b>09:35 – 10:00</b>	<b>Dr. Rachael Dickman</b> <i>University College London</i> A biophysical study of the nisin-lipid II pore complex
<b>10:00 – 10:25</b>	<b>Dr. Nir London</b> <i>Weizmann Institute of Science</i> From covalent inhibitors to covalent PROTACs
<b>10:25 – 10:35</b> <b>Sponsor</b>	<b>Dr. Jess Sutcliffe</b> <i>Cancer Research UK</i> Macromolecules Cancer Grand Challenges

**10:35 – 11:00 Coffee break (Q&A with Dr. Jess Sutcliffe)**

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**Session Chair: Dr. Nicholas Mitchell**

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<b>11:00 – 11:10</b> <b>Sponsor</b>	<b>Dr. Geraldine Hay</b> <i>RSC Journals</i>
<b>11:10 – 12:00</b>	<b>Poster Session 2 – Flash Presentations</b> <i>Presenters in Poster Groups F-J (See Appendix 2)</i>
<b>12:00 – 12:15</b>	<b>Presenter 1 in Poster Group F/G/H/I/J</b>
<b>12:15 – 12:30</b>	<b>Presenter 2 in Poster Group F/G/H/I/J</b>
<b>12:30 – 12:45</b>	<b>Presenter 3 in Poster Group F/G/H/I</b>

12:45 – 13:50 Lunch

Session Chair: Dr. Manuela Tosin

13:50 – 14:00  
Sponsor

Dr. Chris Lounds  
New England Biolabs

14:00 – 14:25

Dr. Michael J. Booth  
University of Oxford

Next-generation nucleic acids: controlling cell-free expression and synthetic cells

14:25 – 14:50

Dr. Guilhem Chaubet  
University of Strasbourg

Investigating multicomponent approaches for the site-selective conjugation of native antibodies

14:50 – 15:40  
Plenary  
Lecture

Prof. Dr. M. Carmen Galan  
University of Bristol  
Photoresponsive Ligands to modulate G-quadruplex DNA

15:40 – 16:00

Prize Presentations & Close  
Dr. Klaus Pors, *University of Bradford*  
&  
Dr. Manuela Tosin, *University of Warwick*

With Many Thanks to Our Sponsors:



**Appendix 1. Poster Session 1 – Flash Presentation Sequence and Poster Group**

	Presentation Sequence	Name	Poster Group	Presenter Number	Institute	Title
Poster Session 1 (7 <sup>th</sup> January, Thursday)	1	Ms. Victoria L. Barlow	A	1	Cardiff University	Effect of membrane fusion protein AdeT1 on the antimicrobial resistance of <i>Escherichia coli</i>
	2	Ms. Elisabet Batlle	B	1	University of Bradford	Synthesis and evaluation of N,N-diethylaminobenzaldehyde (DEAB) analogues to probe aldehyde dehydrogenases in prostate cancer
	3	Dr. Nicholas G.S. McGregor	C	1	University of York	Cysteine Nucleophiles in Glycosidase Catalysis: Application of a Covalent $\beta$ -L-Arabinofuranosidase Inhibitor
	4	Ms. Catharine J. Brady	D	1	University of Illinois	Development of Novel Small Molecule Photosensitizers with Integrated Photoacoustic Readout
	5	Mr. Jonathan Dennis	E	1	University of Edinburgh	Cellular amines mediate biocompatible aldol reactions in living bacteria
	6	Ms. Sara Chothia	A	2	University of Leicester	Investigating folate metabolism by NMR
	7	Dr. Pierre A. Gilormini	B	2	Simon Fraser University	Bis-acetal fluorescence quenched substrates for quantitative monitoring of endogenous glycosidases activity in live cells
	8	Ms. Roxani Nikoloudaki	C	2	Imperial College London	Probing the function of Short Chain Fatty Acid receptors FFA2/3 by optical control using Halo & SNAP Tag tethered probes
	9	Mr. Davide Cardella	D	2	Cardiff University	Conjugation of proapoptotic peptides with folate and cyanine dyes for enhanced potency and selectivity towards tumour cells
	10	Dr. Yuiko Takebayashi	E	2	University of Bristol	The labelling and antibacterial properties of green amine-coated fluorescent carbon nano-dots (FCDs)
	11	Dr. Anuj K. Yadav	A	3	University of Illinois	An Activity-Based Sensing Approach for the Detection of Cyclooxygenase-2 in Live Cells
	12	Dr. Pamela Sweeney	B	3	University of St Andrews	Unravelling structure and mechanism of adenine (22)-tRNA methyltransferase: towards novel antibiotics against MRSA
	13	Dr. Aisha Syed	C	3	University of Leeds	Towards generic approaches to identify small-molecule scaffolds that target $\alpha$ -helix mediated protein-protein interactions
	14	Mr. Joseph Stephenson Clarke	D	3	University of Southampton	Exploring Protein Stabilisation as an Approach to p53 Drug Discovery

**Appendix 2. Poster Session 2 – Flash Presentation Sequence and Poster Group**

	Presentation Sequence	Name	Poster Group	Presenter Number	Institute	Title
Poster Session 2 (8 <sup>th</sup> January, Friday)	1	Ms. Sarah Memarzadeh	F	1	University of Glasgow	MetaTacs: A Strategy for Metastasis Prevention through Targeted Fascin Degradation
	2	Mr. Luke A. Spear	G	1	Cardiff University	Chemical genetic inhibition of E2 ubiquitin-conjugating enzymes
	3	Ms. Isabelle B. Pickles	H	1	University of Leeds	Development of chemical tools for the study of TRPC1/4/5 channels
	4	Dr. Francis Mprah Barnieh	I	1	University of Bradford	Probing Human Cytochrome P450 1A1 and 2W1 enzymes with duocarmycin bioprecursors
	5	Ms. Sheryl Y.T. Lim	J	1	University of Oxford	NeissLock: a spontaneous protein anhydride for covalent coupling to endogenous proteins
	6	Mr. Andrew J. Devine	F	2	University of Bristol	Probing the Later Stages of the Biosynthesis of the Antibiotic Abyssomicin C
	7	Ms. Rhianna J. Rowland	G	2	University of York	Baculoviral expression of human $\beta$ -glucocerebrosidase enables structural analysis of novel inhibitor and probes
	8	Mr. Michael A. McCoy	H	2	University of Southampton	Design, Synthesis & Evaluation of Small Molecule Modulators of the Wnt/ $\beta$ -Catenin Signalling Pathway
	9	Ms. Melissa Y. Lucero	I	2	University of Illinois	Glutathione-Responsive Photoacoustic Imaging Enables Companion Diagnosis of Lung Cancer and Treatment
	10	Mr. Robert Dawber	J	2	University of Leeds	Development of Peptidomimetic Inhibitors of Key Protein-Protein Interactions of the Aurora A Kinase
	11	Ms. Emerald Taylor	F	3	University of Kent	How Conjugation of DNA to Collagen Mimetic and Beta Turn peptides Effects Self-assembly
	12	Ms. Marlene L. Rothe	G	3	University of Warwick	Exploring the biosynthetic potential of epoxyketone synthase EpnF
	13	Dr. Saurja DasGupta	H	3	Massachusetts General Hospital	Chemistry and catalysis join forces in prebiotic RNA ligation
	14	Ms. Maria-Eleni Kouridaki	I	3	University of Edinburgh	Design, Synthesis and Biophysical Evaluation of Novel Tri-vector Cyclophilin Ligands