

Nucleotide Second Messenger Signaling in Bacteria

SPP 1879 International Symposium 2018

Poster Session I (Monday October 1st)

No.	Author(s)	Title
P01	<u>Heike Bähre</u> and Volkhard Kaever	2',3'-cyclic nucleotide monophosphates may exhibit novel biological functions in bacteria
P02	Tiffany M. Zarrella, Dennis W. Metzger and <u>Guangchun Bai</u>	Cyclic di-AMP signaling in <i>Streptococcus pneumoniae</i>
P03	<u>Sarina Bense</u> , Juliane Düvel, Susanne Häußler	Three stepped regulation of flagellar motility via FlgZ in <i>Pseudomonas aeruginosa</i>
P04	Marek Noga, Niels van den Broek and <u>Gregory Bokinsky</u>	A master gene regulator also masters metabolic flux: ppGpp controls phospholipid synthesis via post-translational inhibition during steady-state growth
P05	<u>Bożena Bruhn-Olszewska</u> and Katarzyna Potrykus	pppApp and ppApp - novel nucleotide derivatives influencing transcription initiating from the <i>rmb</i> P1 promoter
P06	<u>Shan-Ho Chou</u> , Yu-Chuan Wang, Ko-Hsin Chin and Michael Galperin	MshEN is an atypical c-di-GMP receptor strongly controlling <i>V. cholerae</i> biofilm formation
P07	<u>Annika Cimdins</u> , Matthias Kiel, and Ulrich Dobrindt	Biofilms of non-pathogenic and uropathogenic <i>E. coli</i>
P08	Johannes Gibhardt, Samuel Hauf, Sven Halbedel, Alexander Reder, Uwe Völker, Annette Garbe, Anna Lena Hagemann, Volkhard Kaever and <u>Fabian M. Commichau</u>	Control of c-di-AMP cyclase CdaA by the membrane-anchored regulator CdaR in <i>Listeria monocytogenes</i>
P09	Alison Wood and <u>Rebecca M. Corrigan</u>	Unravelling the functions of (p)ppGpp-binding GTPases in <i>Staphylococcus aureus</i>
P10	<u>Hannah Dayton</u> , Chase J. Morgan, William Cole Cornell and Lars E.P. Dietrich	Cells in <i>Pseudomonas aeruginosa</i> biofilms form clonal striations that are modulated in response to oxygen availability and c-di-GMP levels
P11	<u>David Drexler</u> , <u>Adrian Bandera</u> and Gregor Witte	Structural and biophysical analysis of the c-di-AMP hydrolyzing DHH/DHHA1-type phosphodiesterases
P12	<u>James B. Eaglesham</u> , Aaron T. Whiteley, John J. Mekalanos and Philip J. Kranzusch	Structures of new cGAS/DncV-like NTases reveal mechanism of second messenger product formation
P13	<u>Gen Enomoto</u> , Annegret Wilde and Masahiko Ikeuchi	Blue/green light responsive cyanobacteriochromes are cell shade sensors to adjust c-di-GMP levels according to cell depth in cyanobacterial community
P14	<u>Neda Farmani</u> , Elizaveta Krol, Petra Gnau, Laura Werel, Lars-Oliver Essen and Anke Becker	Cyclic mononucleotide signaling in <i>Sinorhizobium meliloti</i>
P15	Keila Belhart, Monica Cartelle, Dawn Taylor, Eric T. Harvill, Federico Sisti and <u>Julieta Fernández</u>	The diguanylate cyclase BdcB is involved in <i>Bordetella bronchiseptica</i> intracellular survival
P16	<u>Llorenç Fernández-Coll</u> and Michael Cashel	Separable contributions of SpoT ppGpp hydrolase, SpoT synthetase and RelA synthetase to diauxic carbon source growth transitions in <i>Escherichia coli</i>
P17	<u>Katrin Gerbracht</u> , Martina Rüger, Eric Bohn, Susanne Zehner and Nicole Frankenberg-Dinkel	The role of the c-di-GMP-specific phosphodiesterase NbdA in biofilm dispersal of <i>Pseudomonas aeruginosa</i>
P18	<u>Pietro Ivan Giammarinaro</u> , Manfred Wieland Steinchen and Gert Bange	Biochemical characterization of the major Ap4A source in <i>Bacillus subtilis</i> : Lysyl tRNA Synthetase
P19	<u>Johannes Gibhardt</u> , Gregor Hoffmann, Vincent T. Lee and Fabian M. Commichau	Functional characterization of a novel c-di-AMP-dependent potassium transporter from <i>Listeria monocytogenes</i>
P20	Mauricio Díaz, Mario Vera and <u>Nicolas Guilianì</u>	Deciphering the regulation network involves in Pel exopolysaccharide biosynthesis by acidophilic bacterium <i>Acidithiobacillus thiooxidans</i>

P21	<u>Julian Haist</u> and Natalia Tschowri	Contribution of the GGDEF-EAL proteins RmdA and RmdB to the developmental control in <i>Streptomyces venezuelae</i>
P22	Séverin Ronneau, Julien Caballero-Montes, Aurélie Mayard, Abel Garcia-Pino and <u>Régis Hallez</u>	Molecular mechanism regulating (p)ppGpp hydrolysis in response to nutrients starvation
P23	<u>Jana L. Heidemann</u> , Piotr Neumann, Achim Dickmanns and Ralf Ficner	Crystal structures of the diadenylate cyclase CdaA from <i>Listeria monocytogenes</i>
P24	<u>Meng-Lun Hsieh</u> , Deborah M. Hinton and Christopher M. Waters	Melting the DNA duplex: cyclic di-GMP activates transcription in <i>Vibrio cholerae</i> by driving open complex formation
P25	Heike Bähre and <u>Volkhard Kaever</u>	New potential bacterial nucleotide signaling molecules: How to identify <i>unknown unknowns</i> ?
P26	<u>Sara Kim</u> , Breann Brown, Ellen Kloss Vieux and Tania Baker	Lon multimerization and substrate specificity
P27	<u>Larissa Krüger</u> , Christina Herzberga and Jörg Stülke	The role of the c-di-AMP binding protein YkuL in central carbon metabolism of <i>Bacillus subtilis</i>
P28	<u>Sofya Kuzmich</u> , Dorota Skotnicka and Lotte Søgaard-Andersen	Regulation of development in <i>Myxococcus xanthus</i> by the phosphodiesterase PmxA
P29	<u>Tom Landgraf</u> and Harald Schwalbe	NMR screening of RNA secondary structure and binding of c-di-GMP to the Cd1-Riboswitch
P30	<u>Andreas Latoscha</u> , Heike Bähre, Volkhard Kaever and Natalia Tschowri	A novel phosphodiesterase hydrolyses c-di-AMP involved in development and osmotic stress resistance in <i>Streptomyces</i>
P31	<u>Benoît-Joseph Laventie</u> , Matteo Sangermani, Pablo Manfredi, Fabienne Estermann, Isabelle Hug, Tina Jaeger and Urs Jenal	Touch, Seed and Go: A surface induced asymmetric program optimizes <i>Pseudomonas aeruginosa</i> tissue colonization
P32	<u>Richard Little</u> , Lucia Grenga and Jacob Malone	Cyclic-di-GMP acts as an effector and substrate in regulating components of a ribosomal modification module
P33	<u>Martin Lorkowski</u> , Susanne Herbst, Olga Sarenko, Kim Nguyen and Regine Hengge	Transmembrane redox signaling and proteolysis of CSS Domain c-di-GMP phosphodiesterases in bacterial biofilm formation
P34	Elsa Germain, Badreddine Douzi, Kenn Gerdes, Deborah Byrne and <u>Etienne Maisonneuve</u>	Control of bacterial stress response by the alarmone synthetase SpoT
P35	<u>Nadezhda Malysheva</u> , Anja M. Richter, Kaveh Pouran Yousef, Max von Kleist and Regine Hengge	Reaction-diffusion modelling of local c-di-GMP signaling controlling the synthesis of <i>E. coli</i> biofilm.
P36	Candela Muriel, Eva Arrebola, Miguel Redondo-Nieto, Francisco Martínez-Granero, Blanca Jalvo ¹ , Sebastian Pfeilmeier, Esther Blanco-Romero, Irene Baena, Jacob G. Malone, Rafael Rivilla and <u>Marta Martín</u>	AmrZ is a major determinant of c-di-GMP levels in <i>Pseudomonas fluorescens</i> F113
P37	<u>Alberto Ramírez Mata</u> , César Millán Pacheco, José F. Cruz Pérez, María L. Xiqui Vázquez, Claudia Mancilla-Simbros and Beatriz E. Baca	In silico comparative analysis of GGDEF and EAL domain signaling proteins from the <i>Azospirillum</i> genomes
P38	Elie Toledano, Antoine Danchin, Vasily Ogryzko, Daniel Ladant and <u>Undine Mechold</u>	Regulatory functions of 3'-phosphoadenosine 5'-phosphate (pAp)

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Poster Session II (Tuesday October 2nd)

No.	Author(s)	Title
P39	<u>Fabian Müller</u> and Franz Narberhaus	Identification of novel (p)ppGpp-interacting proteins in <i>Escherichia coli</i>
P40	<u>Sara Alina Neumann</u> , Julian Haist, Marie Elliot and Natalia Tschowri	The diguanylate cyclase CdgC is essential for coordinated progress of the <i>Streptomyces venezuelae</i> life cycle
P41	<u>Sabrina Oeser</u> , Thomas Wallner and Annegret Wilde	Surface acclimation of the cyanobacterium <i>Synechocystis</i> sp. PCC 6803
P42	Annette Fagerlund, Veronika Smith, Sarah Finke, Ida Kristine Bu-Nilssen, Ida K. Hegna, Åsmund Røhr, Toril Lindbäck, Veronika Krogstad and <u>Ole Andreas Økstad</u>	Cyclic diguanylate (c-di-GMP) regulation in the <i>Bacillus cereus</i> group and comparative analysis to <i>Bacillus subtilis</i>
P43	<u>Przemyslaw Olejnik</u> , Kalley Raji and Sandra Schwarz	Interaction studies of the DGC SadC, a predicted hydratase and dioxygenase reductase involved in O ₂ -dependent regulation of alginate production in <i>Pseudomonas aeruginosa</i>
P44	<u>Sofia R. A. Oliveira</u> , Vallo Varik, Vasilii Haurlyuk and Tanel Tenson	HPLC-based quantification of bacterial housekeeping nucleotides and alarmone messengers ppGpp and pppGpp
P45	<u>Kevin Perkins</u> , Ruben Atilho, Harini Sadeeshkumar, Michelle Moon and Ronald Breaker	Exploiting nucleotide signaling molecules for antibiotic development by using riboswitch sensors
P46	<u>Vanessa Pfiffer</u> and Regine Hengge	Multiple sensory input into the biofilm matrix-controlling diguanylate cyclase DgcE of <i>Escherichia coli</i>
P47	<u>Sebastian J. Reich</u> and Gerd M. Seibold	Control of c-di-AMP synthesis in <i>Corynebacterium glutamicum</i> : Analyses of interactions between the di-adenylate cyclase DisA and DNA repair protein Rada
P48	<u>Sebastian J. Reich</u> , Tamara Weiß and <u>Gerd M. Seibold</u>	A c-di-AMP-dependent riboswitch contributes to multilevel control of transcription of the <i>nlpC</i> -operon for cell wall modifications in <i>Corynebacterium glutamicum</i>
P49	<u>Tim Rick</u> , Anna Pecina, Florian Roßmann and Kai M Thormann	Polar localization of PdeB, a key phosphodiesterase in regulating motility of <i>Shewanella putrefaciens</i> in response to environmental cues
P50	Giorgio Giardina, Alessandro Paiardini, Federico Mantoni, Paolo Brunotti, Laura Cervoni, Livia Leoni, Gordano Rampioni, Alessandro Arcovito, Francesca Cutruzzolà and <u>Serena Rinaldo</u>	Sensing L-arginine in <i>Pseudomonas aeruginosa</i> : a novel link between c-di-GMP and central metabolism?
P51	Candela Muriel, David Durán, Esther Blanco-Romero, Eleftheria Trampari, Jacob G. Malone, Marta Martín and <u>Rafael Rivilla</u>	The diguanylate cyclase AdrA controls flagella synthesis through SadB in <i>Pseudomonas fluorescens</i> F113
P52	Madeline E. Sherlock, <u>Harini Sadeeshkumar</u> and Ronald R. Breaker	Variant riboswitches sense nucleoside diphosphates to regulate nucleotide hydrolases
P53	Daniel Pérez-Mendoza, Daniela Bertinetti, Robin Lorenz, María-Trinidad Gallegos, Friedrich W. Herberg and <u>Juan Sanjuán</u>	Characterization of the c-di-GMP binding domain in glycosyltransferase BgsA responsible for the synthesis of a mixed-linkage β -glucan
P54	<u>Heinrich Schäfer</u> and <u>Kürşad Turgay</u>	The interplay of heat shock and stringent response in <i>Bacillus subtilis</i>
P55	<u>Diego O. Serra</u> and Regine Hengge	A c-di-GMP-dependent switch in the control of short-range heterogeneity of the biofilm regulator CsgD and extracellular matrix in <i>Escherichia coli</i> macrocolony biofilms
P56	<u>Geoffrey B. Severin</u> , Miriam S. Ramliden, Lisa A. Hawver, Kun Wang, Macy E. Pell, Ann-Katrin Kieninger, Atul Khataokar, Brendan J. O'Hara, Lara V. Behrmann, Matthew B. Neiditch, Christoph Benning, Christopher M. Waters and Wai-Leung Ng	Cyclic-GMP-AMP specifically activates the <i>Vibrio cholerae</i> phospholipase CapV resulting in the degradation of membrane phospholipids

P57	<u>Viktoriya Shyp</u> , <u>Badri Nath Dubey</u> , Jutta Nesper, Timothy Sharpe, Sebastian Hiller, Raphael Böhm, Tilman Schirmer and Urs Jenal	An interplay of two global second messengers regulates bacterial growth and behavior of <i>Caulobacter crescentus</i>
P58	<u>Dorota Skotnicka</u> , Wieland Steinchen, Ian Cadby, Andrew Lovering, Gert Bange and Lotte Søgaard-Andersen	Identification of a ribbon-helix-helix protein as a novel c-di-GMP effector involved in cell division in <i>Myxococcus xanthus</i>
P59	<u>Michał Sobala</u> and Katarzyna Potrykus	An RSH enzyme from <i>Methylobacterium extorquens</i> AM1 is responsible for synthesis of (p)ppGpp and pppApp
P60	<u>Magdalena A. Świątek-Połatyńska</u> , Dorota Skotnicka and Lotte Søgaard-Andersen	The LonD protease, a novel c-di-GMP receptor protein, is required for regulated secretion of the signaling protease PopC in <i>Myxococcus xanthus</i>
P61	<u>Adnan K Syed</u> and Richard Losick	A drop in c-di-AMP is necessary and sufficient for <i>Staphylococcus aureus</i> eDNA release during biofilm formation
P62	<u>Raphael Teixeira</u> , Marco Beger and Tilman Schirmer	Mechanistic insight into the regulation of a prototypic small Rec-GGDEF diguanylate cyclase
P63	Andrew Hutchin, Curtis Phippen, Jack Craddock, Yuming Cai, Dom Bellini, Sam Horrell, Martin Walsh, Jeremy Webb and <u>Ivo Tews</u>	The three levels of phosphodiesterase activation in c-di-GMP hydrolysis
P64	<u>Tommaso Tosj</u> , Hoshiga F., Charlotte Millership, Paul Freemont and Angelika Gründling	Structural investigations on c-di-AMP production and regulation in <i>Staphylococcus aureus</i>
P65	<u>Mark S Turner</u>	Multiple mechanisms of overcoming excessive cyclic-di-AMP levels in <i>Lactococcus lactis</i>
P66	Juliane Wissig, Julia Grischin, J. Schultz, <u>Gottfried Unden</u>	CyaC of <i>Sinorhizobium meliloti</i> – A heme B binding redox-regulated class III adenylate cyclase
P67	<u>Albrecht Völklein</u> , <u>Oliver Binas</u> , Tom Landgraf, Christian Richter, Sridhar Sreeramulu and Harald Schwalbe	Establishing a high-throughput NMR screening protocol to assess the binding capabilities of second messenger binding riboswitches
P68	<u>Danny Ward</u> and Jacob Malone	Regulation of type III-mediated virulence by cyclic-di-GMP, a key bacterial signal
P69	<u>Martin Weiß</u> and Jörg Stülke	A protein in search of a function: The c-di-AMP-binding protein DarA of <i>Bacillus subtilis</i>
P70	<u>Heiko Wendt</u> , Simon Schäper, Elizaveta Krol, Wieland Steinchen, Dorota Skotnicka, Volkhard Kaefer, Lotte Søgaard-Andersen, Gert Bange and Anke Becker	Cyclic di-GMP dependent regulation of swimming motility and biofilm formation in <i>Sinorhizobium meliloti</i>
P71	<u>Aaron T. Whiteley</u> , James B. Eaglesham, Carina C. de Oliveira Mann, Benjamin R. Morehouse, Eric A. Nieminen, Olga Danilchanka, Amy S.Y. Lee, John J. Mekalanos and Philip J. Kranzusch	Discovery of cGAS/DncV-like enzymes and new nucleotide second messenger signals
P72	Bertrand Beckert and <u>Daniel N. Wilson</u>	Structure of a hibernating 100S ribosome reveals an inactive conformation of the ribosomal protein S1
P73	<u>Natalie Wolf</u> , Julia Schulte, Meike Baumgart and Michael Bott	cAMP is relevant for uncoupler resistance in <i>Corynebacterium glutamicum</i>
P74	Fabio Lino Gratani, Petra Horvatek, Marina Borisova, Christoph Mayer, Wieland Steinchen, Gert Bange, Ana Velic, Boris Maček and <u>Christiane Wolz</u>	Regulation of the opposing (p)ppGpp synthetase and hydrolase activities in a bifunctional RelA/SpoT homologue from <i>Staphylococcus aureus</i>
P75	<u>Cihan Yilmaz</u> and Karin Schnetz	Characterization of the nucleoid-associated c-di-GMP phosphodiesterase PdeL in <i>Escherichia coli</i>
P76	<u>Merve Suzan Zeden</u> , Christopher Schuster, Lisa Bowman, Qiyun Zhong, Huw Williams and Angelika Gründling	Uncovering the molecular mechanism for the requirement of cyclic di-AMP for the growth of <i>Staphylococcus aureus</i>
P77	Carlotta Foletti, Rolf A. Kramer, Harald Mauser, Urs Jenal, Konrad H. Bleicher and Helma Wennemers (presenter Simon Loosli, Wennemers group)	Functionalized proline-rich peptides bind the bacterial second messenger c-di-GMP