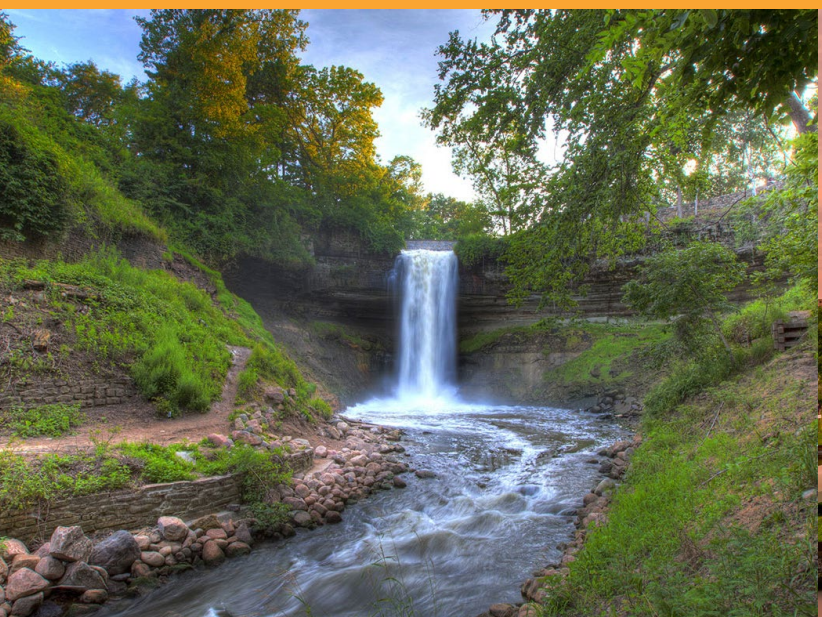
G4thering

June 2-6, 2025

Minneapolis, Minnesota USA

Conference Program



Program At-A-Glance

Time	Monday 02-Jun	Tuesday 03-Jun	Wednesday 04-Jun	Thursday 05-Jun	Friday 06-Jun
8:00		Registration / Information Desk Open	Registration / Information Desk Open	Registration / Information Desk Open	Registration / Information Desk Open
8:15					
8:30		***Biology & Disease 1*** (08:30 - 10:10)	***Structure & Dyanmics 1*** (08:30 - 10:10)	***Nanotechnology & Biotechnology 1*** (08:30 - 10:10)	***Targeting 1*** (08:30 - 10:10)
8:45					
9:00					
9:15					
9:30					
9:45					
10:00					
10:15		**Break** (10:10 - 10:40)	**Break** (10:10 - 10:40)	**Break** (10:10 - 10:40)	**Break** (10:10 - 10:40)
10:30					
10:45		***Biology & Disease 2*** (10:40 - 12:20)	***Structure & Dyanmics 2*** (10:40 - 12:20)	***Structure & Dyanmics 3*** (10:40 - 12:20)	***Targeting 2*** (10:40 - 12:20)
11:00					
11:15					
11:30					
11:45					
12:00					
12:15					
12:30		**Lunch on own** (12:20 - 13:45)	**Lunch on own** (12:20 - 13:45)	**Lunch on own** (12:20 - 13:45)	
12:45					
13:00					
13:15					
13:30					
13:45		***Biology & Disease 3*** (13:45 - 15:25)	**Free Time**	***Structure & Dyanmics 4*** (13:45 - 15:25)	
14:00					
14:15					
14:30					
14:45					
15:00					
15:15					
15:30		**Break** (15:25 - 15:55)		**Break** (15:25 - 15:55)	
15:45					
16:00	Registration /Information Desk Open	***Young Scholar Forum*** (15:55 - 17:35)		***Biology & Disease 4*** (15:55 - 17:35)	
16:15					
16:30					
16:45					
17:00	**Opening remarks, Keynote Speakers:** **Cynthia Burrows** **Brad Chaires** **Laurence Hurley** (17:00 - 19:00)	Poster 1 on Display		Poster 2 on Display	
17:15					
17:30		**Dinner On Own** **(17:35 - 19:00)**		**Dinner On Own** **(17:35 - 19:00)**	
17:45					
18:00					
18:15					
18:30					
18:45					
19:00		**Poster Social** (19:00 - 21:00)	**Gala Dinner or On Own** (19:00 - 22:00)	**Poster Social** (19:00 - 21:00)	
19:15					
19:30					
19:45					
20:00					
20:15	**Opening Reception** (19:00 - 21:00)				
20:30					
20:45					
21:00					
21:15					
21:30					
21:45					

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Welcome

Dear G4 Conferees,

We are delighted to welcome you to the 2025 G4thering, i.e. the 9th International Conference on Quadruplex Nucleic Acids, in Minneapolis. The endurance of this meeting reflects the great importance of G4 nucleic acids, with understanding of their structures and biological roles, targeting G4 for therapeutics, development of tools to study and manipulate them, and applications of G4s in both biological and non-biological contexts continuing to grow year-by-year.

The conference will kick off with keynote lectures by three of our field's most impactful scientists, Cindy Burrows, Brad Chaires and Laurence Hurley. The main program will feature sessions dedicated to (1) Biology & Disease, (2) Structure, (3) G4 Targeting and (4) Biotech/Nanotech, with a combination of oral and poster presentations as outlined in the following program. There will be ample time scattered throughout the week for informal conversations, a meal with old and new friends, or exploration of the city.

In closing, we would like to thank our International Science Board, the corporate and academic institutions who donated funds to help defray costs, and our partners at Podium Conferences, particularly Michelle Smith and Sharon Zwack, for handling so much of the logistical planning. We hope the conference will strengthen our community through the exchange of information, introducing new people to the field and sparking new ideas and collaborations.

Sincerely,

Thomas Marsh

Danzhou Yang

Bruce Armitage

Scientific Committee

Bruce Armitage
Carnegie Mellon University, USA

Shozeb Haider
University College London, United Kingdom

Tracy Bryan
Children's Medical Research Institute, Australia

Naoki Sugimoto
Konan University, Japan

Thomas Marsh
University of St. Thomas, USA

Lukáš Trantírek
Central European Institute of Technology, Czech Republic

Jean-Louis Mergny
Ecole Polytechnique, France

Anh Tuan Phan
Nanyang Technological University, Singapore

Katrin Paeschke
University Hospital Bonn, Germany

Danzhou Yang
Purdue University College of Pharmacy, USA

Xiaogang Qu
Changchun Institute of Applied Chemistry, China

Keynotes

Monday, June 2, 2025 1700-1900

1700-1740

Cynthia Burrows

Thatcher Presidential Chair and Distinguished Professor
Department of Chemistry, University of Utah, USA

Oxidative Stress and Gene Expression Meet at G-Quadruplexes

After the great oxygenation event 2 billion years ago, life evolved to deal with the conundrum of O2 and Fe(II), a potentially toxic combination. Cells solved the toxicity problem of the Fenton reaction in a clever way using the free radical chemistry of bicarbonate as a redox buffer. Evidence for this hypothesis is gleaned from metabolomics, nanopore sequencing of RNA, and qPCR-based lesion detection in telomeric DNA. As a result, we show that oxidative DNA damage is focused on G-rich sequences, such as those that fold to G-Quadruplexes (G4s). Many cancer-associated genes are regulated by G4s, and these same sequences are sensitive to oxidative damage that is repaired by the base excision repair glycosylases OGG1 and NEIL1-3. We describe studies indicating that oxidation of a guanosine base in a gene promoter G4 can lead to up- and downregulation of gene expression that is location dependent and involves the base excision repair pathway in which the first intermediate, an apurinic (AP) site plays a key role mediated by AP-endonuclease I (APE1/Ref-1). Surprisingly, Fe(II)-mediated DNA damage and strand breaks can turn on genes by assisting G4 folding!

1740-1820

Brad Chaires

Brown Chair in Cancer Biophysics
Professor, Department of Medicine & Department of Biochemistry & Molecular Biology, University of Louisville, USA

Senior Scientist, Brown Cancer Centre, USA

The G4 Folding Problem
A fundamental challenge in molecular biology is to understand how biological macromolecules fold. How do the linear chains in the primary structures of macromolecules transform into their specific three-dimensional structures that determine their function? What is the folding code – how do the primary structures of macromolecules dictate their 3D structure? What is their folding mechanism? Can native structures be predicted from primary sequences? Considerable progress toward understanding these issues has been made for proteins and RNA, but the folding of G-Quadruplexes is distinctly different and remains poorly understood. I will review the status of mechanistic thermodynamic and kinetic studies of G4 folding here. The results of recent time-resolved small-angle X-ray scattering experiments that characterize early events in the folding process will be presented. A unifying model for the G4 folding process will be offered to stimulate future work.

Keynotes

1820-1900

Laurence Hurley

Professor Emeritus
College of Pharmacy and Arizona Cancer Center, University of Arizona, USA

A Half-Century Exciting Journey from Anthramycin Targeting Duplex DNA to Trabectedin, the First FDA-Approved Drug That Targets G-Quadruplexes

Trabectedin (Yondelis®) is a marine-derived antitumor agent from the Ecteinascidin family that is FDA-approved for treatment of soft tissue sarcomas. It features a carbinolamine that forms reversible covalent bonds with N2 of guanine, distinguishing it from typical DNA alkylating agents. Structurally, the Ecteinascidins are also distinct from other carbinolamine alkylating drugs by inclusion of a C-subunit that widens the DNA minor groove and induces transcriptional replication stress and genome instability. Taking into account the sensitivity of Ewing Sarcoma to Trabectedin and the role of EWS in binding to G-Quadruplexes (G4s), especially those with longer stem loops, this presentation redefines Trabectedin's molecular target by exploring its potential interaction with G4s. Building on these insights, we designed experiments using Trabectedin in combination with wild-type and mutant MYCN G4s to assess whether Trabectedin could irreversibly bond covalently to a consensus sequence within a duplex stem loop associated with a G4. Circular dichroism (CD) analysis confirmed that Trabectedin stabilized a G4 containing a consensus covalent bonding site within the associated hairpin loop. Mass spectrometry (MS) analysis demonstrated that a guanine in the Trabectedin consensus binding site is essential for this irreversible covalent bonding. Additionally, CD and MS showed that when Trabectedin was covalently bound to the duplex stem loop, it displaced a molecule (GSA0932) that binds noncovalently to both the core G4 structure and the stem loop. Significantly using antibody to G4s, it was observed that Trabectedin treatment significantly increased G4 frequency within cells. In conclusion, Trabectedin irreversibly bonds to N2 of guanine within a duplex stem loop of a G4 and belongs to the first clinically approved class of G4-targeted drugs.

General Conference Information

CONFERENCE VENUE

Marquette Hotel Minneapolis
710 Marquette Avenue
Minneapolis, MN, USA 55402

PHONE: 1-612-333-4545

(floor plan of conference venue is page 7)

All sessions for G4 will take place on the 50th floor of the hotel. Please see the floor plan to guide yourself to the correct set of elevators. Sessions will take place in the Galaxy meeting room and the Opening Reception and the Poster Sessions will take place in the Stars meeting room.

CONFERENCE REGISTRATION

In-person registration for the conference includes admission to all sessions including keynotes, invited speakers, oral presentations and poster sessions. Also included, is the Opening Reception, tea/coffee breaks, along with light refreshments at the Poster Sessions.

NAME BADGES

Your name badge is your admission ticket to the conference sessions, refreshment breaks, poster sessions, and the reception. Please wear it at all times. At the end of the conference we ask that you return your badge to the registration desk. G4 Program, and Committee Members, Exhibitors and Staff will be identified by appropriate ribbons.

SPEAKER INFORMATION

The meeting room will be equipped with:

1 LCD projector and screen • 1 microphone • 1 wireless presenter (mouse/slide advancer)

Speakers will be required to use their own laptop to connect to the LCD projector. Please note, HDMI cables will be provided. If you use a MAC or have a different connection, please provide your own adapters/dongles. You are able to test your laptop on the day of your presentation during times when meeting rooms are not in use. Please consult the program to determine when the room will be available.

POSTER INSTALLATION AND DISMANTLE

Posters will be located in the Stars meeting room. Poster presenters must set-up and remove their posters during the following times:

Poster Session 1 | Tuesday, June 3

Set Up: Between 10:00–13:45
Session Time: 19:00-21:00
Tear Down: 21:00 on Tuesday, June 3

Poster Session 2 | Thursday, June 5

Set Up: Between 10:00–13:45
Session Time: 19:00-21:00
Tear Down: 21:00 on Thursday, June 5

CONFERENCE EXHIBITORS

Exhibits will be available for viewing near the registration desk throughout the day.

CERTIFICATE OF ATTENDANCE

If you require a certificate of attendance for G4thering 2025, please scan the QR code below to access the form. Complete the form and following the conference, we will send a certificate of attendance to you. This may take 7-10 days to process due to the volume of requests.

MARQUETTE
HOTEL

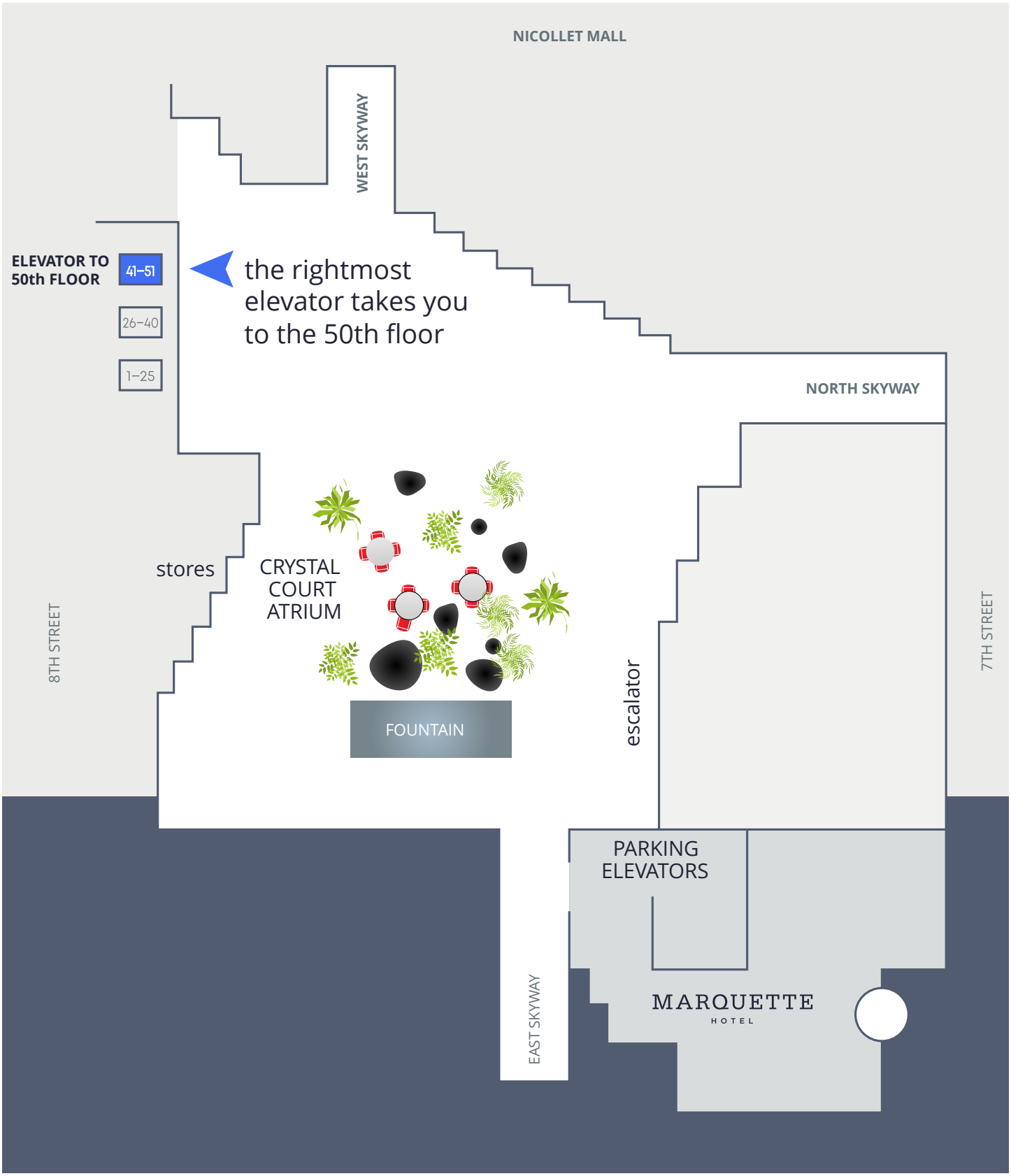
SEE THE CITY

- Museums
  - Minneapolis Institute of Art
  - Walker Art Center
  - Minneapolis Sculpture Garden
  - Mill City Museum
  - American Swedish Institute
  - Weisman Art Museum
- Theaters
  - Orpheum
  - State
  - Pantages
  - Guthrie
- Music Venues
  - The Fillmore
  - The Armory
  - Orchestra Hall
  - First Avenue/7th Street Entry
- Sports
  - US Bank Stadium
  - Target Field
  - Target Center
  - Huntington Bank Stadium
- Parks
  - The Commons
  - Loring Park
  - Minnehaha Park/Falls
  - Gold Medal Park
  - Father Hennepin Bluffs Park
  - Boom Island Park
  - Mill Ruins Park
- Lakes
  - Loring Lake
  - Cedar Lake
  - Lake of the Isles
  - Lake Harriet
  - Bde Maka Ska
  - Lake Nokomis
- Shopping
  - Nicollet Mall
  - Midtown Global Market
  - Minneapolis Farmers Market

LOCAL RESTAURANT FAVORITES

- Steakhouses
  - Manny's
  - Murray's
  - 801 Chop
  - Ruth's Chris
  - The Capital Grille
  - Fogo de Chao
- Seafood
  - Oceanaire
  - 801 Fish
  - Smack Shack
- Italian
  - Zelo
  - Red Rabbit
  - Bar La Grassa
- American
  - Crave
  - The News Room
  - Freehouse
  - Red Cow
  - 8th Street Grill
- Other
  - Sawatdee Thai
  - Billy Sushi
  - Lyon's Pub
  - Brit's Pub
  - Hen House Eatery
  - NOLO's Kitchen & Bar
  - Black Sheep Pizza
  - Pizza Lucè
  - Crooked Pint Ale House
  - Spoon & Stable
  - Parlour Bar

Conference Floorplan



Conference Detailed Schedule

All sessions will be held in the Marquette Hotel. Presentations will be in the Galaxy Ballroom with posters in the Stars Ballroom. Both rooms are on the 50th Floor.

DAY 1: MONDAY, JUNE 2, 2025

1600-2030 **REGISTRATION**

1700-1900 *Galaxy Ballroom*

Welcome, Opening Remarks

Thomas Marsh (St. Thomas University), **Bruce Armitage** (Carnegie Mellon University), **Danzhou Yang** (Purdue University)

Keynote Speakers

Keynote Speakers

Oxidative Stress and Gene Expression Meet at G-Quadruplexes
Cynthia Burrows, Thatcher Presidential Chair and Distinguished Professor
Department of Chemistry, University of Utah, USA

The G4 Folding Problem
Brad Chaires, Brown Chair in Cancer Biophysics; Senior Scientist, Brown Cancer Centre, USA
Professor, Department of Medicine & Department of Biochemistry & Molecular Biology, University of Louisville, USA

A Half-Century Exciting Journey from Anthramycin Targeting Duplex DNA to Trabectedin, the First FDA-Approved Drug That Targets G-Quadruplexes.
Laurence Hurley, Professor Emeritus
College of Pharmacy and Arizona Cancer Center, University of Arizona, USA

1900-2100 *Stars Ballroom*

Opening Reception

Join us to meet up with old colleagues and meet new ones at the opening reception. This informal networking event will feature light appetizers and a cash bar. A complimentary drink ticket is provided and can be found in the back of your name badge.

DAY 2: TUESDAY, JUNE 3, 2025

0800-1745 **REGISTRATION**

0830-1010 **BIOLOGY & DISEASE 1**

Moderator: Danzhou Yang, *Purdue University*

Individual G-Quadruplex Targeting with Chemically Functionalised CRISPR-Cas9 Uncovers Transcriptional and Ligand-Specific Responses

Inv.1 **Marco Di Antonio**, *Imperial College of London*

Mechanism for unfolding of G-Quadruplex DNA by Pif1 helicase

Inv.22 **Kevin Raney**, *University of Arkansas*

G-Quadruplexes in Mitochondria

Inv.3 **Brett Kaufman**, *University of Pittsburgh*

Targeting G-Quadruplex to Eliminate Dormant Breast Cancer

Inv.34 Mike Wendt, *University of Iowa*

BIO.1.3 Not All G4 Binders Are the Same: New Insights into G4-Mediated Immune Gene Activation Through Proteomic Analysis of Micronuclei

Giulia Miglietta[1], Monica Procacci[1], Marco Russo[1], M.P. Ximénez De Embún Cadarso[2], Javier Munoz[2], Giovanni Capranico[1]

[1]University of Bologna, [2]Spanish National Cancer Research Centre

Presenting Author: **Giulia Miglietta**

1010-1040 **Refreshment Break**

1040-1220 **BIOLOGY & DISEASE 2**

Moderator: Katrin Paeschke, *University Hospital Bonn*

G-Quadruplex DNA in Trained Immunity and Aging

Inv.4 **Robert Hansel-Hertsch**, *University of Cologne*

G-Quadruplexes Promote Molecular Motility in MAZ Phase-Separated Condensates to Activate CCND1 Expression

Inv.5 **Guangchao Sui**, *Northeast Forest University*

Non-canonical DNA in Human and Other Ape Telomere-to-Telomere Genomes: Computational Predictions, Experimental Calidations, and Evolution

Inv.6 **Kateryna D. Makova**, *Penn State University*

BIO.2.1 Non-Canonical DNA In Human and Other Ape Telomere-To-Telomere Genomes

Linnéa Smeds[1], Kaivan Kamali[1], Iva Kejnovská[2], Eduard Kejnovský[2], Francesca Chiaromonte[1], Kateryna D. Makova[1]

[1]Penn State University, [2]Czech Academy of Sciences

Presenting Author: **Linnéa Smeds**

BIO.2.2 RNA Capping and Quadruplexes

Lydia Hepburn[1]

[1]Cancer Research UK

Presenting Author: **Lydia Hepburn**

BIO.2.3 G-Quadruplexes in Viral Genomes: A Comparative Analysis

Vaclav Brázda[1], Jean-Louis Mergny[2]

[1]Czech Academy of Sciences, [2]Laboratoire d'Optique et Biosciences

Presenting Author: **Vaclav Brázda**

1220-1345 **Lunch on own**

1345-1525 **BIOLOGY & DISEASE 3**

Moderator: Marco DiAntonio, ***Imperial College of London***

Structural and Functional Diversity of Tetramolecular RNA G-Quadruplexes Derived From Endogenous tRNA Variants

Inv.7 **Pavel Ivanov,** *Harvard University*

"G4 Prionoid" RNA G-Quadruplexes in Neuropathology

Inv.8 **Norifumi Shioda,** *Kumamoto University*

G4 DNA and Zn Finger Transcription Factors

Inv.9 **Nayun Kim,** *University of Texas at Austin*

BIO.3.1 RAD51 Accommodates G4 Within its Filamentous Structure and Promotes Gap-Filling by Template Switch

Lumir Krejci[1], Michaela Pospíšilová[1]

[1]*Masaryk University*

Presenting Author: **Michaela Pospíšilová**

BIO.3.2 Quadratlas: Decoding the Interplay of RG4s and RNA-Binding Proteins

Erik Dassi[1]

[1]*University of Trento*

Presenting Author: **Erik Dassi**

BIO.3.3 G-Quadruplex Structures in 16S rRNA and Thermal Adaptation in Prokaryotes

Qisheng Song[1], Bo Lyu[1], Deborah Anderson[1], Kangkang Niu[2], Qili Feng[2]

[1]*University of Missouri,* [2]*South China Normal University*

Presenting Author: **Qisheng Song**

1525-1555 **Refreshment Break**

1555-1735 **YOUNG SCHOLAR FORUM**

Moderator: Thomas Marsh, ***St. Thomas University***

YS.1 Premature Progerin-Driven Aging Promotes G-Quadruplex DNA and Interlinked Genome Instability

Anna Koch[1], Priscilla Piccirillo[1], Joana Frobel[1], Julia Popow[1], Linda Hannak[1], Sara Desideri[1], Olivia Van Ray[1], Pascal Hunold[1], Michaela Höhne[1], Magda Hamczyk[2], Miguel Araujo-Voces[2], Carlos López-Otín[2], Robert Hänsel-Hertsch[1]

[1]*University Hospital Cologne,*[2]*Instituto Universitario de Oncología*

Presenting Author: **Anna Koch**

YS.2 BCL2 Promoter Secondary Structures Facilitate AID Mutagenic Activity

Mason Mccrury[1], Rylie Mangold[1], Todd Spears[1], Samantha Kendrick[1]

[1]*University of Arkansas*

Presenting Author: **Mason Mccrury**

YS.3 Guanine Quadruplex Structures Mediate Genome-Wide Regulation of Small Rnas Upon Ionizing Radiation Stress in Hela Cells

Shruti Mishra[1], Himani Tewari[1], Swathi Kota[1]

[1]*Bhabha Atomic Research Centre*

Presenting Author: **Shruti Mishra**

YS.4 **Understanding Sequence-Level Drivers of G-Quadruplex Stability, Ligand-Modulated Stabilization, and Protein Recognition**

Justin Martyr[1], Bryan Guzman[1], Yue Hu[1], Alli Jimenez[1], Maria Aleman[1], Daniel Dominguez[1]

[1]University of North Carolina Chapel Hill

Presenting Author: **Justin Martyr**

YS.5 **Small Molecule-Based Regulation of Gene Expression in Human Astrocytes Switching On and Off the G-Quadruplex Control Systems**

Vijay Kumar M J Rao[1], Jérémie Mitteaux[2], Zi Wang[3], Ellery Wheeler[4], Nitin Tandon[4], Sung Yun Jung[5], Robert H E Hudson[3], David Monchaud[2], Andrey Tsvetkov [4]

[1]University of Texas Health Science Center at Houston,[2]Université de Bourgogne, [3]The University of Western Ontario,[4]The University of Texas,[5]Baylor College of Medicine

Presenting Author: **Vijay Kumar M J Rao**

YS.6 **Structure and Dynamics of the PDGFR-B Oncogene Promoter G-Quadruplex: Insights into Regulation and Targeting**

Yichen Han[1], Jonathan Dickerhoff[1], Danzhou Yang[1]

[1]Purdue University

Presenting Author: **Yichen Han**

YS.7 **Exploring B-MYB G-Quadruplex as a Therapeutic Target in Cancer: Small Molecule Interactions and Their Biological Effects**

André Miranda[1], Anne Cucchiarini[2], Cyril Esnault[3], Jean-Christophe Andrau[3], Paula Oliveira[4], Jean-Louis Mergny[2], Carla Cruz[1]

[1]University of Beira Interior,[2]Laboratoire d'Optique et Biosciences, [3]University of Montpellier,[4]Centre for Research and Technology of Agro-Environmental and Biological Sciences

Presenting Author: **André Miranda**

YS.8 **Guanine by Guanine: Decoding the BCL2 RNA G-Quadruplex Conformation Landscape**

Carla Ferreira Rodrigues[1]

[1]University of Zurich

Presenting Author: **Carla Ferreira Rodrigues**

YS.9 **Tetraplexed Nucleic Acids Structures as Templating Platform for Proximity-Enhanced Photochemical Reaction: Applications in DNA Targeting and Aptamer Fabrication**

Enrico Cadoni[1], Annemieke Madder[1], Jack Barr[1], Lessandro De Paepe[1]

[1]Ghent University

Presenting Author: **Enrico Cadoni**

YS.10 **Unveiling the Kinetic Tango: Exploring G-Quadruplex Ligand Binding Dynamics and Transfer Mechanisms**

Hariz Iskandar Mohd Nizal[1], Anthony Mittermaier[1]

[1]McGill University

Presenting Author: **Hariz Iskandar Mohd Nizal**

1735-1900 **Dinner on own**

1900-2100 **POSTER SESSION 1**

Join us for Poster Session 1 to meet the scientists as they present their research. This event will feature light appetizers and a cash bar. A complimentary drink ticket is provided and can be found in the back of your name badge.

DAY 3: WEDNESDAY, JUNE 4, 2025

0800-1230 **REGISTRATION**

0830-1010 **STRUCTURE & DYNAMICS 1**

Moderator: Janez Plavec, *National Institute of Chemistry*

Static and Time-resolved NMR Studies to Study G4 Folding
Inv.16 **Harald Schwalbe**, *University of Frankfurt*

G-Quadruplex Structures Formed by C9orf72 DNA and RNA
Inv.17 **Guang Zhu**, *Hong Kong University of Science and Technology*

Physicochemical Properties of Tetraplexes for the Dynamic Regulation in Biological Functions
Inv.18 **Shuntaro Takahashi**, *Konan University*

STR.1.1 Supramolecular Assembly of D(G4C2) and D(G4C2)4 Repeats Associated With ALS and FTD
Melani Potrc[1], Elena Cokor[1], Irena Drevensek-Olenik[2], Lea Spindler[2]
[1]University of Maribor, [2]Josef Stefan Institute
Presenting Author: **Lea Spindler**

STR.1.2 G-Quadruplexes in Archaea
Lionel Guittat[1], Anne Cucchiarini[2], Zackie Aktary[2], Kate Sorg[2], Guglielmo Vesco[3], Dorian Noury[2], Pierre Mahou[2], Daniela Verga[4], Vaclav Brázda[5], Nicolas Olivier[2], Marie Bouvier[6], Marta Kwapisz[6], Béatrice Clouet-D'orval[6], Thorsten Allers[7], Roxane Lestini[2], Jean-Louis Mergny[2]
[1]Ecole Polytechnique, [2]Laboratoire d'Optique et Biosciences, [3]University of Insubria, [4]PSL Research University, [5]Czech Academy of Sciences, [6]Center for Integrative Biology, [7]University of Nottingham
Presenting Author: **Lionel Guittat**

STR.1.3 G-Quadruplex-Driven Molecular Disassembly and Type I-To-Type II Photophysical Conversion of a Heavy-Atom-Free Photosensitizer for Site-Specific Oxidative Damage
Marco Deiana[1]
[1]Wroclaw University of Science and Technology
Presenting Author: **Marco Deiana**

1010-1040 **Refreshment Break**

1040-1220 **STRUCTURE & DYNAMICS 2**

Moderator: Harald Schwalbe, *University of Frankfurt*

Oncogene DNA G-Quadruplexes: Structures, Drug Targeting, and Protein Interactions
Inv.19 **Danzhou Yang**, *Purdue University*

Rules for the pUG fold: An Unusual Quadruplex That Directs the Amplification of RNAi
Inv.20 **Sam Butcher**, *University of Wisconsin-Madison*

A Novel Strategy for Developing Antibiotics Targeting the G-Quadruplex
Inv.21 **Kyeong Kyu Kim**, *Sungkyunkwan University*

STR.2.1 **From Meme to Model: How Cryo-EM Helped Resolve a Misconception in the G-Quadruplex Field**

Robert Monsen[1], Eugene Chua[2], Jesse Hopkins[3], Jonathan Chaires[1], John Trent[1]
[1]University of Louisville, [2]National Center for Cryo-EM Access and Training, [3]The Biophysics Collaborative Access Team
Presenting Author: **Robert Monsen**

STR.2.2 **Post Transcriptional Regulation of Kras Gene Via 5UTRr RNA G-Quadruplexes and Long Noncoding RNA**

Zahraa Othman[1], Ylenia Cortelezzis[2], Francesca Agostini[2], Gilmar Salgado[1], Luigi Xodo[2], Eros Di Giorgio[2]
[1]Bordeaux University, [2]University of Udine
Presenting Author: **Zahraa Othman**

STR.2.3 **Gene Transcription Regulation by G-Quadruplex**

Lijun Xiang[1], Kangkang Niu[1], Qili Feng[1]
[1]South China Normal University
Presenting Author: **Qili Feng**

1220-1900 **Lunch & afternoon on own**

1900-2100 **Conference Dinner or on own**

Galaxy Ballroom

Tickets for the conference dinner must be pre-purchased – please check with the registration desk for seating availability. If you have pre-purchased a dinner ticket, it will be in the back of your name badge along with a complimentary drink ticket.

DAY 4: THURSDAY, JUNE 5, 2025

0800-1745 **REGISTRATION**

0830-1010 **NANOTECHNOLOGY & BIOTECHNOLOGY 1**

Moderator: Bruce Armitage, *Carnegie Mellon University*

Understanding the Role of Tandem G-Quadruplex Structures in the Liquid-liquid Phase Separation (LLPS)
Inv.13 **Hanbin Mao**, *Kent State University*

NANO.2 Using Parallel-Type G4 as a Scaffold for Delivery of Immunostimulatory CPG Oligodeoxynucleotides to Immune Cells
Tomohiko Yamazaki[1]
[1]*National Institute for Materials Science*
Presenting Author: **Tomohiko Yamazaki**

NANO.3 I-Motif Kinetics as a Unique Opportunity in Sensor Design: A Case of Molecular Calorimeters
Irina Nesterova[1]
[1]*Northern Illinois University*
Presenting Author: **Irina Nesterova**

NANO.1 Single Molecule Studies on Interactions of Telomeric Overhangs and Telomere-Specific Proteins
Hamza Balci[1], Ahmet Yildiz[2], Sajad Shiekh[1], Amanda Jack[2]
[1]*Kent State University,* [2]*University of California, Berkeley*
Presenting Author: **Hamza Balci**

Persistence Lengths of Extended Tet1.5 and G10 G-Wire DNA
Inv.14 **James Vesenka**, *University of New England*

Use of G4 for the Construction of Supramolecular Scaffold Materials
Inv.15 **Thomas Marsh**, *St. Thomas University*

1010-1040 **Refreshment Break**

1040-1220 **STRUCTURE & DYNAMICS 3**

Moderator: Danzhou Yang, *Purdue University*

I-Motifs from Human Telomeric Sequences as a Molecular Target:

Dynamic NMR Structures of Quadruplex DNA Tuned by C-Methylation
Inv.24 **Janez Plavec**, *National Institute of Chemistry*

Combining Crystallographic and Single Molecule FRET to Understand Topology and Stability
Inv.23 **Gary Parkinson**, *University College of Londo*n

Deep Learning of G-Quadruplexes
Inv.35 **Shozeb Haider,** *University College London*

STR.3.1 First Atomic Resolution Structure of an Intramolecular Higher-Order Five Tetrad G-Quadruplex
Thomas Sabo[1], John Trent[1], Jonathan Chaires[1], Robert Monsen[1]
[1]*University of Louisville*
Presenting Author: **Thomas Sabo**

STR.3.2 **Structural Basis for Nucleolin Recognition of MYC Promoter G-Quadruplex**
Luying Chen[1], Jonathan Dickerhoff[1], Ke-Wei Zheng[2], Guanhui Wu[1], Saburo Sakai[1], Danzhou Yang[1]
[1]Purdue University, [2]Hunan University
Presenting Author: **Luying Chen**

STR.3.3 **G-Quadruplex Topologies Determine the Functional Outcome of Guanine- Rich Bioactive Oligonucleotides**
Prakash Kharel[1], Pavel Ivanov[2]
[1]University of Kansas Medical Center, [2]Harvard Medical School
Presenting Author: **Prakash Kharel**

1220-1345 **Lunch on own**

1345-1525 **STRUCTURE & DYNAMICS 4**

Moderator: Gary Parkinson, ***University College of London***

Quadruplex RNA That Inhibits the Interaction Between Aβ and its Receptor, Prion Protein, and In-Cell NMR Studies of Nucleic Acids Involving Quadruplex DNA
Inv.25 **Masato Katahira**, *Kyoto University*

DNA Sequences with the Potential to Form Five-Tetrad G-Quadruplexes
Inv.26 **Liliya Yatsunyk**, *Swarthmore College*

Functional Investigation of G-Quadruplexes in Viral Genomes and the Rational Design of G-Quadruplex-Targeted Antiviral Therapeutics
Inv.27 **Dengguo Wei**, *Huazhong Agricultural University*

STR.4.1 **Best Method to Determine DNA G-Quadruplex Folding: The 1H-13C HSQC NMR Experiment**
Jonathan Dickerhoff[1], Danzhou Yang[1]
[1]Purdue University
Presenting Author: **Jonathan Dickerhoff**

STR.4.2 **Probing Residual Water in G-Quadruplex Structures through Molecular Vibrations**
Valeria Libera[1], Sara Catalini[1], Francesca Ripanti[2], Luca Bertini[1], Martina Alunni Cardinali[1], Francesco D'amico[3], Barbara Rossi[3], Caterina Petrillo[1], Marco Paolantoni[1], Alessandro Paciaroni[1], Lucia Comez[4]
[1]University of Perugia, [2]Università Politecnica delle Marche, [3]Elettra Sincrotrone Trieste, [4]Istituto Officina dei Materiali
Presenting Author: **Lucia Comez**

STR.4.3 **Unraveling the Thermodynamics of I-Motif Formation**
San Hadzi[1], Mojca Pevec[1], Neza Zerjav[1], Uros Zavrtanik[1], Primoz Sket[2], Natasa Medved[3], Janez Plavec[3], Jurij Lah[1]
[1]University of Ljubljana, [2]Chemical Institute Ljubljana, [3]National Institute of Chemistry
Presenting Author: **Jurij Lah**

1525-1555 **Refreshment Break**

1555-1735 **BIOLOGY & DISEASE 4**

Moderator: Samantha Kendrick

Opposing Roles of Two R-Loop Associated G-Quadruplexes in Tuning Transcription Activity
Inv.10 **Sua Myong**, *Harvard University*

Viral Hijacking of hnRNPH1 Unveils a G-Quadruplex Driven Mechanism of Stress Control

Inv.11 **Katrin Paeschke**, *University Hospital Bonn*

Chemistry and Biology of G Quadruplex-Binding Proteins

Inv.12 **Yinsheng Wang**, *University of California, Riverside*

BIO.4.1 **The Changing Shape of DNA in the Insulin-Linked Polymorphic Region**

Zoë Waller[1], Dilek Guneri[1], Shozeb Haider[1], Gary Parkinson[2], Kamel El Omari[3], Zuzana Dvorakova[4], Effrosyni Alexandrou[2], Christopher Morris[2], Chris Waudby[2], Rupesh Chikhale 5, Daniel Pike[2]

[1]University College London, [2]UCL School of Pharmacy, [3]Diamond, [4]Institute of Biophysics, [5]CCDC

Presenting Author: **Zoë Waller**

BIO.4.2 **Designing an Expression Cassette to Study G-Quadruplex Formation in Bacillus Subtilis**

Polina Marchenko[1], Maria Vittoria Cottini[1], Sidra Ishrat[1], Pavol Vadovic[1], Jan Jamroskovic[1]

[1]Slovak Academy of Sciences

Presenting Author: **Jan Jamroskovic**

BIO.4.3 **The Role of BAZ2-Dependent Chromatin Remodeling in Suppressing G4 DNA Structures and Associated Genomic Instability**

Adrianna Vandeuren[1], Kierney O'dare[2], Rosemary Wilson[2], Patrick Van Eijk[2], Lindsay Julio[1], Shannon Macleod[1], Ella Chee[1], Annika Salpukas[1], Emma Kriz[1], George Lantz[1], Shellaina Gordon[1], Simon Elsässer[3], Simon Reed[2], Tovah Day[1]

[1]Northeastern University, [2]Cardiff University, [3]Ming Wai Lau Centre for Reparative Medicine

Presenting Author: **Adrianna Vandeuren**

1735-1900 **Dinner on own**

1900-2100 **POSTER SESSION 2**

Join us for Poster Session 2 to meet the scientists as they present their research. This event will feature light appetizers and a cash bar. A complimentary drink ticket is provided and can be found in the back of your name badge.

DAY 5: FRIDAY, JUNE 6, 2025

0800-1230 **REGISTRATION**

0830-1010 **TARGETING 1**

Moderator: Bruce Armitage, ***Carnegie Mellon University***

Optimized Targeting of the MYC Promoter G4 with DNAi
Inv.28 **Tracy Brooks**, *Binghamton University*

G4s Dictating Protein Folding, Misfolding, and Neurodegeneration
Inv.29 **Scott Horowitz**, *Denver University*

Enhancing Chemo-Sensitivity and Overcoming Drug Resistance in Cancer with G4 Ligands
Inv.30 **Antonio Randazzo**, *University of Naples*

TAR.2.2 Investigating the Interactions of Carbazole Ligands With I-Motif DNA
Anna Dembska[1], Klaudia Kmiecik[1], Agata Głuszyńska[1]
[1]Adam Mickiewicz University
Presenting Author: **Anna Dembska**

TAR.1.2 Harnessing G-Quadruplex Modulation as a Therapeutic Strategy in Neurodegenerative Diseases
Valentina Pirota[1], Stephana Carelli[2], Emmanuele Crespan[3], Mauro Freccero[1]
[1]University of Pavia, [2]University of Milan, [3]Institute of Molecular Genetics IGM-CNR
Presenting Author: **Valentina Pirota**

TAR.1.3 Hemopeptides Conjugates as Versatile Ligands for the Selective Binding of G-Quadruplexes
Leen Massalha[1], Adiel Richter-Levin[1], Nurit Adiram-Filiba[1], Eyal Golub[1]
[1]Bar-Ilan University
Presenting Author: **Eyal Golub**

1010-1040 **Refreshment Break**

1040-1150 **TARGETING 2**

Moderator: Tracy Brooks*, Binghamton University*

Worth Their Salt and Then Some: G4s Have Unique Stability and Catalytic Functions in Saline Solutions
Inv.31 **Aaron Engelhart**, *University of Minnesota*

Combination of DNA foldings at a Single Site
Inv.32 **Claudia Sissi**, *University of Padova*

Binding Thermodynamics of G-wires with Cellular Delivery Agents
Inv.33 **Lisa Prevette**, *St. Thomas University*

TAR.2.3 Interactions of Simple BODIPY Dyes with Various DNA G-Quadruplexes
Jakub Żubertowski[1], Magdalena Rapp[1], Jan Dolichter[2], Błażej Rubiś[2], Anna Dembska[1]
[1]Adam Mickiewicz University, [2]Poznan University
Presenting Author: **Jakub Żubertowski**

1150-1200 **Conference Closing**

Invited Speaker Abstract List

Please see the separate abstract book for the full abstract

BIOLOGY AND DISEASE

Individual G-Quadruplex Targeting With Chemically Functionalised CRISPR-Cas9 Uncovers Transcriptional and Ligand-Specific Responses
Inv. 1 Marco Di Antonio, *Imperial College of London*

G-Quadruplexes in Mitochondria
Inv.3 Brett Kaufman, *University of Pittsburgh*

G-Quadruplex DNA in Trained Immunity and Aging
Inv.4 Robert Hansel-Hertsch, *University of Cologne*

G-Quadruplexes Promote Molecular Motility in MAZ Phase-Separated Condensates to Activate CCND1 Expression
Inv.5 Guangchao Sui, *Northeast Forest University*

Non-Canonical DNA in Human and Other Ape Telomere-To-Telomere Genomes: Computational Predictions, Experimental Validations, and Evolution
Inv.6 Kateryna D. Makova, *Penn State University*

Structural and Functional Diversity of Tetramolecular RNA G-Quadruplexes Derived from Endogenous tRNA variants
Inv.7 Pavel Ivanov, *Harvard University*

"G4 Prionoid" RNA G-Quadruplexes in Neuropathology
Inv.8 Norifumi Shioda, *Kumamoto University*

G4 DNA and Zn Finger Transcription Factors
Inv.9 Nayun Kim, *University of Texas Austin*

Opposing Roles of Two R-Loop Associated G-Quadruplexes in Tuning Transcription Activity
Inv.10 Sua Myong, *Harvard University*

Viral Hijacking of hnRNPH1 Unveils a G-Quadruplex Driven Mechanism of Stress Control
Inv.11 Katrin Paeschke, *University Hospital Bonn*

Chemistry and Biology of G-Quadruplex-Binding Proteins
Inv.12 Yinsheng Wang, *University of California, Riverside*

Targeting G-Quadruplex to eliminate dormant breast cancer
Inv. 34 Mike Wendt, *University of Iowa*

NANOTECHNOLOGY & BIOTECHNOLOGY

Understanding the Role of Tandem G-Quadruplex Structures in the Liquid-Liquid Phase Separation (LLPS)
Inv.13 Hanbin Mao, *Kent State University*

Persistence Lengths of Extended Tet1.5 and G10 G-wire DNA
Inv.14 James Vesenka, *University of New England*

Use of G4 for the Construction of Supramolecular Scaffold Materials
Inv.15 Thomas Marsh, *St. Thomas University*

STRUCTURE & DYNAMICS

Static and Time-Resolved NMR Studies to Study G4 Folding
Inv.16 Harald Schwalbe, *University of Frankfurt*

G-Quadruplex Structures Formed by C9orf72 DNA and RNA
Inv.17 Guang Zhu, *Hong Kong University of Science and Technology*

Physicochemical Properties of Tetraplexes for the Dynamic Regulation In Biological Functions
Inv.18 Shuntaro Takahashi, *Konan University*

Oncogene DNA G-Quadruplexes: Structures, Drug Targeting, and Protein Interactions
Inv.19 Danzhou Yang, *Purdue University*

Rules for the pUG fold: An Unusual Quadruplex That Directs the Amplification of RNAi
Inv.20 Sam Butcher, *University of Wisconsin-Madison*

A Novel Strategy for Developing Antibiotics Targeting the G-Quadruplex
Inv.21 Kyeong Kyu Kim, *Sungkyunkwan University*

Mechanism for Unfolding of G-Quadruplex DNA by Pif1 helicase
Inv.22 Kevin Raney, *University of Arkansas*

I-motifs From Human Telomeric Sequences as a Molecular Target: Combining Crystallographic and Single Molecule FRET Tto Understand Topology and Stability
Inv.23 Gary Parkinson, *University College London*

Dynamic NMR Structures of Quadruplex DNA Tuned by C-methylation
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Quadruplex RNA That Inhibits the Interaction Between Aβ and its Receptor, Prion Protein, and In-Cell NMR Studies of Nucleic Acids Involving Quadruplex DNA
Inv.25 Masato Katahira, *Kyoto University*

DNA Sequences with the Potential to Form Five-Tetrad G-Quadruplexes
Inv.26 Liliya Yatsunyk, *Swarthmore College*

Functional Investigation of G-Quadruplexes in Viral Genomes and the Rational Design of G-Quadruplex-Targeted Antiviral Therapeutics
Inv.27 Dengguo Wei, *Huazhong Agricultural University*

TARGETING

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Combination of DNA Foldings at a Single Site
Inv.32 Claudia Sissi, *University of Padova*

Binding Thermodynamics of G-wires with Cellular Delivery Agents
Inv.33 Lisa Prevette, *St. Thomas University*

Deep Learning of G-Quadruplexes
Inv.35 Shozeb Haider, *University College London*

Oral Abstracts Schedule

BIOLOGY & DISEASE 1
Tuesday, June 3, 2025 0830-1010

BIO.1.3 – Not All G4 Binders Are the Same: New Insights into G4-Mediated Immune Gene Activation Through Proteomic Analysis of Micronuclei

Giulia Miglietta[1], Monica Procacci[1], Marco Russo[1], M.P. Ximénez De Embún Cadarso [2], Javier Munoz[2], Giovanni Capranico[1]

[1]University of Bologna, [2]Spanish National Cancer Research Centre

BIOLOGY & DISEASE 2
Tuesday, June 3, 2025 1040-1220

BIO.2.1 – Non-Canonical DNA in Human and Other Ape Telomere-To-Telomere Genomes

Linnéa Smeds[1], Kaivan Kamali[1], Iva Kejnovská[2], Eduard Kejnovský[2], Francesca Chiaromonte[1], Kateryna D. Makova[1]

[1]Penn State University, [2]Czech Academy of Sciences

BIO.2.2 – RNA Capping and Quadruplexes

Lydia Hepburn[1]

[1]Cancer Research UK

BIO.2.3 – G-Quadruplexes in Viral Genomes: A Comparative Analysis

Vaclav Brázda[1], Jean-Louis Mergny [2]

[1]Czech Academy of Sciences, [2]Laboratoire d'Optique et Biosciences

BIOLOGY & DISEASE 3
Tuesday, June 3, 2025 1345-1525

BIO.3.1 – RAD51 Accommodates G4 Within its Filamentous Structure and Promotes Gap-Filling by Template Switch

Lumir Krejci[1], Michaela Pospíšilová[1]

[1]Masaryk University

BIO.3.2 – Quadratlas: Decoding the Interplay of RG4s and RNA-Binding Proteins

Erik Dassi[1]

[1]University of Trento

BIO.3.3 – G-Quadruplex Structures in 16S rRNA and Thermal Adaptation in Prokaryotes

Qisheng Song[1], Bo Lyu[1], Deborah Anderson[1], Kangkang Niu[2], Qili Feng[2]

[1]University of Missouri, [2]South China Normal University

YOUNG SCHOLARS:
Tuesday, June 3, 2025 1555-1735

YS.1 – Premature Progerin-Driven Aging Promotes G-Quadruplex DNA and Interlinked Genome Instability

Anna Koch[1], Priscilla Piccirillo[1], Joana Frobel[1], Julia Popow[1], Linda Hannak[1], Sara Desideri[1], Olivia Van Ray[1], Pascal Hunold[1], Michaela Höhne[1], Magda Hamczyk[2], Miguel Araujo-Voces[2], Carlos López-Otín[2], Robert Hänsel-Hertsch[1]

[1]University Hospital Cologne, [2]Instituto Universitario de Oncología

YS.2 – BCL2 Promoter Secondary Structures Facilitate AID Mutagenic Activity

Mason Mccrury[1], Rylie Mangold[1], Todd Spears[1], Samantha Kendrick[1]

[1]University of Arkansas

YS.3 – Guanine Quadruplex Structures Mediate Genome-Wide Regulation of Small Rnas Upon Ionizing Radiation Stress in Hela Cells

Shruti Mishra[1], Himani Tewari[1], Swathi Kota[1]

[1]Bhabha Atomic Research Centre

YS.4 – Understanding Sequence-Level Drivers of G-Quadruplex Stability, Ligand-Modulated Stabilization, and Protein Recognition

Justin Martyr[1], Bryan Guzman[1], Yue Hu[1], Alli Jimenez[1], Maria Aleman[1], Daniel Dominguez[1]

[1]University of North Carolina Chapel Hill

YS.5 – Small Molecule-Based Regulation of Gene Expression in Human Astrocytes Switching On and Off the G-Quadruplex Control Systems

Vijay Kumar M J Rao[1], Jérémie Mitteaux[2], Zi Wang[3], Ellery Wheeler[4], Nitin Tandon[4], Sung Yun Jung[5], Robert H E Hudson[3], David Monchaud[2], Andrey Tsvetkov [4]

[1]University of Texas Health Science Center at Houston, [2]Université de Bourgogne, [3]The University of Western Ontario, [4]The University of Texas, [5]Baylor College of Medicine

YS.6 – Structure And Dynamics of the PDGFR-B Oncogene Promoter G-Quadruplex: Insights into Regulation and Targeting

Yichen Han[1], Jonathan Dickerhoff[1], Danzhou Yang[1]

[1]Purdue University

YS.7 – Exploring B-MYB G-Quadruplex as a Therapeutic Target in Cancer: Small Molecule Interactions and Their Biological Effects

André Miranda[1], Anne Cucchiarini[2], Cyril Esnault[3], Jean-Christophe Andrau [3], Paula Oliveira[4], Jean-Louis Mergny[2], Carla Cruz[1]

[1]University of Beira Interior, [2]Laboratoire d'Optique et Biosciences, [3]University of Montpellier, [4]Centre for Research and Technology of Agro-Environmental and Biological Sciences

YS.8 – Guanine By Guanine: Decoding the BCL2 RNA G-Quadruplex Conformation Landscape

Carla Ferreira Rodrigues[1]

[1]University of Zurich

YS.9 – Tetraplexed Nucleic Acids Structures as Templating Platform for Proximity-Enhanced Photochemical Reaction: Applications in DNA Targeting and Aptamer Fabrication

Enrico Cadoni[1], Annemieke Madder[1], Jack Barr[1], Lessandro De Paepe[1]

[1]Ghent University

YS.10 – Unveiling the Kinetic Tango: Exploring G-quadruplex Ligand Binding Dynamics and Transfer Mechanisms

Hariz Iskandar Mohd Nizal[1], Anthony Mittermaier[1]

[1]McGill University

STRUCTURE & DYNAMICS 1: Wednesday, June 4, 2025 0830-1010

STR.1.1 – Supramolecular Assembly of D(G4C2) And D(G4C2)4 Repeats Associated with ALS and FTD

Melani Potrc[1], Elena Cokor[1], Irena Drevensek-Olenik[2], Lea Spindler[2]

[1]University of Maribor, [2]Josef Stefan Institute

STR.1.2 – G-Quadruplexes in Archaea

Lionel Guittat[1], Anne Cucchiarini[2], Zackie Aktary[2], Kate Sorg[2], Guglielmo Vesco[3], Dorian Noury[2], Pierre Mahou[2], Daniela Verga[4], Vaclav Brázda[5], Nicolas Olivier[2], Marie Bouvier[6], Marta Kwapisz[6], Béatrice Clouet-D'orval[6], Thorsten Allers[7], Roxane Lestini[2], Jean-Louis Mergny [2]

[1]Ecole Polytechnique, [2]Laboratoire d'Optique et Biosciences, [3]University of Insubria, [4]PSL Research University, [5]Czech Academy of Sciences, [6]Center for Integrative Biology, [7]University of Nottingham

STR.1.3 – G-Quadruplex-Driven Molecular Disassembly and Type I-To-Type II Photophysical Conversion of a Heavy-Atom-Free Photosensitizer For Site-Specific Oxidative Damage

Marco Deiana[1]

[1]Wroclaw University of Science and Technology

STRUCTURE & DYNAMICS 2 Wednesday, June 4, 2025 1040-1220

STR.2.1 – From Meme to Model: How Cryo-EM Helped Resolve a Misconception in the G-Quadruplex Field

Robert Monsen[1], Eugene Chua[2], Jesse Hopkins[3], Jonathan Chaires[1], John Trent[1]

[1]University of Louisville, [2]National Center for Cryo-EM Access and Training, [3]The Biophysics Collaborative Access Team

STR.2.2 – Post Transcriptional Regulation of Kras Gene Via 5UTRr RNA G-Quadruplexes and Long Noncoding RNA

Zahraa Othman[1], Ylenia Cortelezzis[2], Francesca Agostini[2], Gilmar Salgado[1], Luigi Xodo[2], Eros Di Giorgio[2]

[1]Bordeaux University, [2]University of Udine

STR.2.3 – Gene Transcription Regulation by G-Quadruplex

Lijun Xiang[1], Kangkang Niu[1], Qili Feng[1]

[1]South China Normal University

NANOTECH & BIOTECH 1: Thursday, June 5, 2025 0830-1010

NANO.1 – Single Molecule Studies on Interactions of Telomeric Overhangs and Telomere-Specific Proteins

Hamza Balci[1], Ahmet Yildiz[2], Sajad Shiekh[1], Amanda Jack[2]

[1]Kent State University, [2]University of California, Berkeley

NANO.2 – Using Parallel-Type G4 as a Scaffold for Delivery of Immunostimulatory Cpg Oligodeoxynucleotides to Immune Cells

Tomohiko Yamazaki[1]

[1]National Institute for Materials Science

NANO.3 – I-Motif Kinetics as a Unique Opportunity in Sensor Design: A Case Of Molecular Calorimeters

Irina Nesterova[1]

[1]Northern Illinois University

STRUCTURE & DYNAMICS 3: Thursday, June 5, 2025 1040-1220

STR.3.1 – First Atomic Resolution Structure of an Intramolecular Higher-Order Five Tetrad G-Quadruplex

Thomas Sabo[1], John Trent[1], Jonathan Chaires[1], Robert Monsen[1]

[1]University of Louisville

STR.3.2 – Structural Basis for Nucleolin Recognition of MYC Promoter G-Quadruplex

Luying Chen[1], Jonathan Dickerhoff[1], Ke-Wei Zheng[2], Guanhui Wu[1], Saburo Sakai[1], Danzhou Yang[1]

[1]Purdue University, [2]Hunan University

STR.3.3 – G-Quadruplex Topologies Determine the Functional Outcome of Guanine-Rich Bioactive Oligonucleotides

Prakash Kharel[1], Pavel Ivanov[2]

[1]University of Kansas Medical Center, [2]Harvard Medical School

STRUCTURE & DYNAMICS 4: Thursday, June 5, 2025 1345-1525

STR.4.1 – Best Method to Determine DNA G-Quadruplex Folding: The 1H-13C HSQC NMR Experiment

Jonathan Dickerhoff[1], Danzhou Yang[1]

[1]Purdue University

STR.4.2 – Probing Residual Water in G-Quadruplex Structures through Molecular Vibrations

Valeria Libera[1], Sara Catalini[1], Francesca Ripanti[2], Luca Bertini[1], Martina Alunni Cardinali[1], Francesco D'amico[3], Barbara Rossi[3], Caterina Petrillo[1], Marco Paolantoni[1], Alessandro Paciaroni[1], Lucia Comez[4]

[1]University of Perugia, [2]Università Politecnica delle Marche, [3]Elettra Sincrotrone Trieste, [4]Istituto Officina dei Materiali

STR.4.3 – Unraveling the Thermodynamics of I-Motif Formation

San Hadzi[1], Mojca Pevec[1], Neza Zerjav[1], Uros Zavrtanik[1], Primoz Sket[2], Natasa Medved[3], Janez Plavec[3], Jurij Lah[1]

[1]University of Ljubljana, [2]Chemical Institute Ljubljana, [3]National Institute of Chemistry

BIOLOGY & DISEASE 4:
Thursday, June 5, 2025 1555-1735

BIO.4.1 – The Changing Shape of DNA in the Insulin-Linked Polymorphic Region

Zoë Waller[1], Dilek Guneri[1], Shozeb Haider[1], Gary Parkinson[2], Kamel El Omari[3], Zuzana Dvorakova[4], Effrosyni Alexandrou[2], Christopher Morris[2], Chris Waudby[2], Rupesh Chikhale[5], Daniel Pike[2]

[1]University College London, [2]UCL School of Pharmacy, [3]Diamond, [4]Institute of Biophysics, [5]CCDC

BIO.4.2 – Designing an Expression Cassette to Study G-Quadruplex Formation in Bacillus Subtilis

Polina Marchenko[1], Maria Vittoria Cottini[1], Sidra Ishrat[1], Pavol Vadovic[1], Jan Jamroskovic[1]

[1]Slovak Academy of Sciences

BIO.4.3 – The Role of BAZ2-Dependent Chromatin Remodeling in Suppressing G4 DNA Structures and Associated Genomic Instability

Adrianna Vandeuren[1], Kierney O'dare[2], Rosemary Wilson[2], Patrick Van Eijk[2], Lindsay Julio[1], Shannon Macleod[1], Ella Chee[1], Annika Salpukas[1], Emma Kriz[1], George Lantz[1], Shellaina Gordon[1], Simon Elsässer[3], Simon Reed[2], Tovah Day[1]

[1]Northeastern University, [2]Cardiff University, [3]Ming Wai Lau Centre for Reparative Medicine

TARGETING 1:
Friday, June 6, 2025 0830-1010

TAR.1.1 – Nucleic Acids-Based Bioorthogonal Catalysts for Cancer Therapy

Jiawei Zhu[1], Yawen You[1], Fanf Pu[1], Jinsong Ren[1]

[1]Chinese Academy of Sciences

TAR.1.2 – Harnessing G-Quadruplex Modulation as a Therapeutic Strategy in Neurodegenerative Diseases

Valentina Pirota[1], Stephana Carelli[2], Emmanuele Crespan[3], Mauro Freccero[1]

[1]University of Pavia, [2]University of Milan, [3]Institute of Molecular Genetics IGM-CNR

TAR.1.3 – Hemopeptides Conjugates as Versatile Ligands for the Selective Binding of G-Quadruplexes

Leen Massalha[1], Adiel Richter-Levin[1], Nurit Adiram-Filiba[1], Eyal Golub[1]

[1]Bar-Ilan University

TARGETING 2:
Friday, June 6, 2025 1040-1220

TAR.2.2 – Investigating the Interactions of Carbazole Ligands With I-Motif DNA

Anna Dembska[1], Klaudia Kmiecik[1], Agata Głuszyńska[1]

[1]Adam Mickiewicz University

TAR.2.3 – Interactions of Simple BODIPY Dyes with Various DNA G-Quadruplexes

Jakub Żubertowski[1], Magdalena Rapp[1], Jan Dolichter[2],

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The poster numbers are divided first by session, then by theme, and finally with a unique number.
Session – Theme – Board Number (ex. P1.BIO.1).

BIO = Biology & Disease **NANO = Nanotech & Biotech**
STR = Structure & Dynamics **TAR = Targeting**

The list below is arranged in alphabetical order by first name.

Author	Poster No.
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Elżbieta Kierzek	P1.BIO.14
Emma Kriz	BIO.4.3
Emmanuele Crespan	TAR.1.2
Enrico Cadoni	YS.9
Eric Xing	P2.STR.67
Erik Dassi	BIO.3.2
Erin Coyle	P2.STR.67
Ernesto Mucenji	P1.STR.27
Eros Di Giorgio	STR.2.2
Esther Schoenauer	P2.BIO.41
Eugene Chua	STR.2.1
Eunice Mulenda	P2.BIO.48
Eva Balog	P1.STR.19
Eyal Golub	P2.BIO.52, TAR.1.3
Ezequiel Margarit	P2.BIO.39, BIO.1.2
Fanf Pu	TAR.1.1
Feng Yang	P1.BIO.3
Filippo Doria	P2.TAR.69, P1.TAR.33
Forrest Empey-Kohl	P1.BIO.10
Francesca Agostini	STR.2.2
Francesca Chiaromonte	P1.BIO.6, P2.BIO.42, BIO.2.1
Francesca Ripanti	STR.4.2
Francesco D'amico	STR.4.2
Gary Parkinson	BIO.4.1
George Lantz	BIO.4.3
Georgina Bezzi	P2.BIO.39, BIO.1.2
Gilmar Salgado	STR.2.2
Giovanni Bisbano	P2.TAR.69
Giovanni Capranico	BIO.1.3
Giulia Miglietta	BIO.1.3
Grinsun Sharma	P1.NANO.17
Guanhui Wu	P1.STR.28, STR.3.2, P2.STR.64
Guglielmo Vesco	STR.1.2
Haley Lowe	P1.STR.26
Haley Michel	P2.STR.68
Hamza Balci	P2.TAR.71, NANO.1
Hana Palova	P2.BIO.42
Hanbin Mao	P2.NANO.53, P1.STR.25, P1.NANO.17
Hao Shen	P2.NANO.53, P1.STR.25
Hao Sun	P1.BIO.3
Harald Schwalbe	P2.BIO.46
Hariz Iskandar Mohd Nizal	P1.STR.22, YS.10
Hayden Hilton Roys	P1.BIO.15
Herman Sintim	P1.TAR.37
Himani Tewari	YS.3
Hong Xu	P1.BIO.2
Huating Wang	P1.BIO.3
Huiqing Zeng	P2.BIO.42
Ines Burkhart	P2.BIO.46
Irena Drevensek-Olenik	STR.1.1
Irina Nesterova	NANO.3
Iva Kejnovská	BIO.2.1
Jack Barr	YS.9
Jacob Sieg	P2.BIO.42
Jakub Harnoš	P1.STR.21
Jakub Żubertowski	P1.TAR.34, TAR.2.3
James Bardwell	P2.BIO.44
James Vesenka	P1.STR.19
Jan Dolichter	TAR.2.3
Jan Jamroskovic	P1.STR.18, BIO.4.2
Janan Alfehaid	P2.TAR.71
Janez Plavec	P2.STR.55, P2.STR.58, P2.BIO.44, STR.4.3
Jason Evans	P1.BIO.1
Javier Munoz	BIO.1.3
Jean-Christophe Andrau	YS.7
Jean-Louis Mergny	P1.TAR.32, P1.NANO.16, YS.7, STR.1.2, BIO.2.3
Jennifer Coleman	P2.BIO.38
Jérémie Mitteaux	YS.5
Jesse Hopkins	STR.2.1
Jessica Siemer	P2.BIO.50, P1.BIO.7, P2.BIO.48
Jiahao Ji	P2.NANO.53
Jiawei Zhu	TAR.1.1
Jieyu Zhao	P1.BIO.3
Jinho Jang	P1.TAR.37
Jinsong Ren	TAR.1.1
Jiri Sponer	P1.STR.21
Joana Frobel	YS.1
Joanna Nowak-Karnowska	P2.STR.65
Joe George	n/a
John Marecki	P1.STR.26
John Trent	STR.2.1, STR.3.1
Jon Suh	P2.STR.67
Jonathan Chaires	STR.2.1, STR.3.1
Jonathan Dickerhoff	P2.STR.56, P2.STR.66, P1.STR.24, P1.TAR.37, STR.4.1, STR.3.2, P1.STR.30
Jonathan Dickerhoff	YS.6
Jose F. Moruno-Manchon	P1.BIO.4
Joshua Sommers	n/a
Juan Carlos Morales	P1.TAR.33
Julia Popow	YS.1
Julia Wirmer-Bartoschek	P2.BIO.46
Jun Gao	P1.STR.26
Jurij Lah	P2.STR.58, STR.4.3
Justin Crane	P1.BIO.1
Justin Lemkul	P2.STR.68
Justin Martyr	YS.4
Kaibo Wang	P1.STR.30, P1.STR.28
Kaivan Kamali	BIO.2.1
Kamel El Omari	BIO.4.1
Kangkang Niu	STR.2.3, BIO.3.3
Karin Hori	P1.BIO.5
Karol Pasternak	P2.STR.61
Karolina Zielińska	P2.STR.61, P2.STR.65, P1.BIO.14
Kasper Beck	P2.STR.57
Kate Sorg	STR.1.2
Kateryna D. Makova	P1.BIO.6, P2.BIO.42, BIO.2.1
Kazuo Nagasawa	P1.NANO.17, P2.TAR.71
Ken-Ichi Akao	P1.BIO.10
Kennith Swafford	P1.TAR.36
Kenta Kudo	P1.BIO.5
Kevin Raney	P1.STR.26
Ke-Wei Zheng	STR.3.2
Kierney O'dare	BIO.4.3
Klaudia Kmiecik	TAR.2.2
Krista Urup	P2.STR.57
Kristen Colborn	P2.STR.64
Kyeong Kyu Kim	P2.BIO.51
Lea Spindler	STR.1.1
Leen Massalha	TAR.1.3
Leman Simpson	P1.BIO.9
Lessandro De Paepe	YS.9
Liangqiang He	P1.BIO.3
Lijun Xiang	STR.2.3
Liliya Yatsunyk	P2.STR.67
Linda Hannak	YS.1

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Lindsay Julio	P1.BIO.1, P2.STR.63, BIO.4.3
Linnéa Smeds	P2.BIO.42, BIO.2.1
Lionel Guittat	STR.1.2
Louise D. Mccullough	P1.BIO.4
Lu Bai	P1.BIO.9
Luca Bertini	STR.4.2
Lucia Comez	STR.4.2
Luigi Xodo	STR.2.2
Lukas Trantirek	P1.STR.21, P1.STR.23
Lumir Krejci	BIO.3.1
Luying Chen	STR.3.2
Lydia Hepburn	BIO.2.2
M.P. Ximénez De Embún Cadarso	BIO.1.3
Magda Hamczyk	YS.1
Magdalena Rapp	P1.TAR.34, TAR.2.3
Marco Russo	BIO.1.3
Marco Deiana	STR.1.3
Marco Paolantoni	STR.4.2
Margo Brinton	P2.BIO.50, P1.BIO.7
Maria Aleman	YS.4
Maria Luisa Torre	P2.TAR.69
Maria Nalewaj	P1.BIO.14
Maria Paulo Cabral Campello	P1.NANO.16
Maria Razzaq	P2.BIO.51
Maria Vittoria Cottini	P1.STR.18, BIO.4.2
Marie Bouvier	STR.1.2
Mark Cushman	P1.STR.28
Markus W. Germann	P2.BIO.48, P2.BIO.50, P1.BIO.7
Marta Cozzaglio	P1.STR.23, P1.STR.27
Marta Kwapisz	STR.1.2
Marta Szabat	P1.BIO.14
Martin Gajarský	P1.BIO.8
Martina Alunni Cardinali	STR.4.2
Martina Lenarcic Zivkovic	P1.STR.21
Martina Rotondo	P1.STR.23
Masayuki Tera	P1.NANO.17
Mason Mccrury	YS.2
Massimo Serra	P2.TAR.69
Mauro Freccero	P1.TAR.33, TAR.1.2
Mauro Gismondi	P2.BIO.39, BIO.1.2
Maximilian Braun	P2.BIO.46
Mayra Paolillo	P2.TAR.69
Mayuri Gilhooly	P1.STR.19
Melani Potrc	STR.1.1
Mercedes Demoss	P1.STR.28
Michael Ong	P1.BIO.3
Michael Petersen	P2.STR.57
Michaela Dobrovolná	P1.TAR.32
Michaela Höhne	YS.1
Michaela Pospíšilová	BIO.3.1
Michele Ghezzo	n/a
Miguel Araujo-Voces	YS.1
Mirko Cevec	P2.STR.58
Mojca Pevec	STR.4.3
Monica Procacci	BIO.1.3
Mynaja Ferguson	P1.BIO.1
Natasa Medved	P2.STR.58, STR.4.3
Nayun Kim	P2.BIO.40, P1.BIO.4
Nazia Parveen	P2.BIO.51
Neza Zerjav	STR.4.3
Nicolas Olivier	STR.1.2
Nicole Brundridge	P1.STR.24
Nicolò Dal Ponte	P1.STR.23
Nina M. Krause	P2.BIO.46
Nitin Tandon	YS.5
Nora B. Calcaterra	BIO.1.2
Norifumi Shioda	P1.BIO.5
Nurit Adiram-Filiba	TAR.1.3
Olivia Van Ray	YS.1
Oscar P. Kuipers	P1.TAR.33
Pablo Armas	P2.BIO.39
Pascal Hunold	YS.1
Patrick Van Eijk	BIO.4.3
Paula Oliveira	YS.7
Pavel Ivanov	STR.3.3
Pavol Vadovic	BIO.4.2
Pedro Lourenço	P1.NANO.16
Peter Podbevsek	P2.STR.55
Peter Reinholdt	P2.STR.57
Petr Stadlbauer	P1.STR.21
Pierce Bombard	n/a
Pierre Mahou	STR.1.2
Polina Marchenko	P1.STR.18, BIO.4.2
Poul Nielsen	P2.STR.57
Prakash Kharel	STR.3.3
Pratiksha Chaudhary	P1.NANO.17
Pravin Pokhrel	P1.STR.25, P2.NA-NO.53
Primoz Sket	STR.4.3
Priscilla Piccirillo	YS.1
Qili Feng	STR.2.3, BIO.3.3
Qin Zhou	P1.BIO.3
Qisheng Song	BIO.3.3
Rachel Muriph	P1.BIO.1
Rakshitha Hosahalli	P2.STR.68
Riccardo Rigo	P1.STR.23, P1.STR.27
Robert H E Hudson	YS.5
Robert Hänsel-Hertsch	P1.BIO.8, YS.1
Robert Monsen	STR.3.1, STR.2.1, P1.STR.29
Rocio Diaz Escarcega	P1.BIO.4
Rongxue Zhang	P1.STR.30
Rosemary Wilson	BIO.4.3
Roxane Lestini	STR.1.2
Rubén Cebrián	P1.TAR.33
Rupesh Chikhale	BIO.4.1
Rylie Mangold	YS.2
Ryszard Kierzek	P1.BIO.14
Saburo Sakai	STR.3.2
Sajad Shiekh	P2.TAR.71, NANO.1
Samantha Kendrick	P1.TAR.36, P1.BIO.15, YS.2
San Hadzi	P2.STR.58, STR.4.3
Sara Catalini	STR.4.2
Sara Desideri	YS.1
Sarah Venus	P1.STR.26
Sarah Washburn	P2.TAR.72
Saswat Mohanty	P1.BIO.6, P2.BIO.42
Satoko Suzuki	P1.BIO.10
Scott Mcluckey	P1.STR.24
Sean P. Marrelli	P1.BIO.4
Shannon Macleod	P1.BIO.1, P2.STR.63, BIO.4.3
Shelby Rheinschmidt	P2.BIO.40
Shellaina Gordon	BIO.4.3
Shozeb Haider	BIO.4.1
Shruti Mishra	YS.3
Sidra Ishrat	P1.STR.18, BIO.4.2
Simon Elsässer	BIO.4.3
Simon Reed	BIO.4.3
Stefano Ciaco	P2.STR.59
Stephana Carelli	TAR.1.2
Subramaniyam Ravichandran	P2.BIO.51
Suman Panda	P1.BIO.11, P2.BIO.47
Sung Yun Jung	YS.5
Suyang Zhang	P1.BIO.3
Swathi Kota	YS.3

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Takehiko Wada	P1.BIO.10
Thao Le	P2.BIO.50, P2.BIO.48, P1.BIO.7
Thomas C. Marsh	P1.STR.19
Thomas Sabo	STR.3.1
Thorsten Allers	STR.1.2
Tiffany Weinkopff	P1.BIO.15
Todd Spears	YS.2
Tomás J. Steeman	BIO.1.2
Tomasz Kulikowicz	n/a
Tomohiko Yamazaki	NANO.2
Tovah Day	P1.BIO.1, P2.STR.63, BIO.4.3
Uros Zavrtanik	STR.4.3, P2.STR.58

Author	Poster No.
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Valentina Pirota	P2.TAR.69, P1.TAR.33, TAR.1.2
Valeria Libera	STR.4.2
Victoria Ellmer	P2.BIO.41
Vijay Kumar M J Rao	YS.5
Vojc Kocman	P2.BIO.44
W. David Wilson	P2.BIO.48, P1.BIO.7, P2.BIO.50
Witold Andrałojć	P2.STR.61
Xiaofan Guo	P1.BIO.3
Xiaona Chen	P1.BIO.3
Xiexiong Deng	P2.BIO.44
Xinhua Guo	P2.STR.62

Author	Poster No.
Yang Li	P1.BIO.3
Yawen You	TAR.1.1
Ying-Zhi Xu	P1.BIO.15
Ylenia Cortelezzis	STR.2.2
Yue Hu	YS.4
Yulong Qiao	P1.BIO.3
Yuri Shimasawa	P1.NANO.17
Zackie Aktary	STR.1.2
Zahraa Othman	STR.2.2
Zhaofeng Gao	P1.STR.26
Zi Wang	YS.5
Zofia Gdaniec	P2.STR.61
Zoë Waller	BIO.4.1
Zuzana Dvorakova	BIO.4.1

Poster Abstracts

G4thering is pleased to present a wide range of current research through the poster sessions. The posters have been divided over two sessions.

SESSION 1 **Tuesday, June 3, 2025 from 1900-2100h**

SESSION 2 **Thursday, June 5, 2025 from 1900-2100h**

POSTER SESSION 1

Tuesday, June 3, 2025
1900-2100

P1.BIO.1 - Integrative Analysis of Stress-Induced G4 DNA Reveals G4-Binding Transcription Factor Feedback Mechanism

Lindsay Julio [1], Diana Turrieta [1], Annika Salpukas [1], Ella Chee [1], Elizabeth Crane [1], Shannon Macleod [1], Adrianna Vandeuren [1], Mynaja Ferguson [2], Rachel Muriph [2], Justin Crane [1], Jason Evans [2], Tovah Day [1]

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P1.BIO.2 - Oral G-Quadruplex Stabilizer Drug Entering Phase I for Advanced Solid Cancers

Hong Xu [1]

[1] Hexin Biotech

P1.BIO.3 - DNA G-Quadruplex Profiling Reveals Functional and Mechanistic Role of G-Quadruplexes in Skeletal Muscle Stem Cells

Feng Yang [1], Suyang Zhang [1], Xiaona Chen [1], Huating Wang [1], Xiaofan Guo [2], Jieyu Zhao [3], Yulong Qiao [1], Liangqiang He [1], Yang Li [1], Qin Zhou [1], Michael Ong [1], Chun Kit Kwok [3], Hao Sun [1]

[1] The Chinese University of Hong Kong, [2] The University of Hong Kong, [3] City University of Hong Kong

P1.BIO.4 Pirh2-Dependent DNA Damage in Neurons Induced by the G-Quadruplex Ligand Pyridostatin

Rocio Diaz Escarcega [1], Abhijeet A. Patil [1], Jose F. Moruno-Manchon [1], Akihiko Urayama [1], Sean P. Marrelli [1], Nayun Kim [1], David Monchaud [2], Louise D. Mccullough Mccullough [1], Andrey Tsvetkov [3]

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P1.BIO.5 Structural Characterization of RFC1 Repeat Nucleic Acids in the Neurological Disorder CANVAS

Kenta Kudo [1], Karin Hori [1], Norifumi Shioda [1]

[1] Kumamoto University

P1.BIO.6 Evolutionary Dynamics of G-Quadruplexes in Human and Other Great Ape Telomere-To-Telomere Genomes

Saswat Mohanty [1], Francesca Chiaromonte [1], Kateryna D. Makova [1]

[1] Penn State University

P1.BIO.7 Exploring the Structural Diversity of Conserved West Nile Virus Genomic RNA Quadruplexes

Jessica Siemer [1], Thao Le [1], Ananya Paul [1], David Boykin [1], Margo Brinton [1], W. David Wilson [1], Markus Germann [1]

[1] Georgia State University

P1.BIO.8 G-Quadruplexes in Ultra-Short Cell-Free DNA

Martin Gajarský [1], Robert Hänsel-Hertsch [2]

[1] Center for Molecular Medicine Cologne, [2] University Hospital Cologne

P1.BIO.9 Probing Direct Effects of G4 Structures on the Nucleosome

Leman Simpson [1], Lu Bai [2]

[1] Penn State University, [2] Penn State University, Center for Eukaryotic Gene Regulation

P1.BIO.10 CBN-Binding DNA Aptamer Cross Reactivity and Structure Analyzed by Circular Dichroism Spectroscopy

Forrest Empey-Kohl [1], Satoko Suzuki [1], Ai Yamane [1], Taiji Oyama [1], Ken-Ichi Akao [1], Takehiko Wada [2]

[1] Jasco Inc., [2] Tohoku University

P1.BIO.11 Remodeling Ca2+ Dynamics by Targeting a Promising E-Box Containing G-Quadruplex At ORAI1 Promoter in Triple-Negative Breast Cancer

Suman Panda [1]

[1] Institut Polytechnique de Paris

P1.BIO.13 1,8-Naphthalimide-Nucleobase Derivatives as Potent Human Telomeric G-Quadruplex DNA Stabilizers and Anticancer Agents

Alaa Salem [1], Chahlaa Nassab [1]

[1] UAE University

P1.BIO.14 G-Quadruplexes Within the Influenza a Virus Genome Interacting with G4-Specific Ligands - Potential Antiviral Targets?

Maria Nalewaj [1], Karolina Zielińska [1], Ryszard Kierzek [1], Elżbieta Kierzek [1], Marta Szabat [1]

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P1.BIO.15 Discovery of G-Quadruplex and i-Motif formation in Leishmania parasites

Ying-Zhi Xu [1], Hayden Hilton Roys [1], Tiffany Weinkopff [1], Samantha Kendrick [1]

[1] University of Arkansas

P1.NANO.16 Selective Targeting of a B-MYB G-Quadruplex Motif with an Acridine-Based Nucleic Acid Probe

Pedro Lourenço [1], André Miranda [1], Maria Paulo Cabral Campello[2], António Paulo [2], Jean-Louis Mergny [3], Carla Cruz [1]

[1] University of Beira Interior, [2] Universidade de Lisboa, [3] Laboratoire d'Optique et Biosciences

P1.NANO.17 Effect of Chirality on the Binding Between Ligands and G-Quadruplex Structures

Grinsun Sharma [1], Akm Kafi [1], Pratiksha Chaudhary [1], Masayuki Tera [2], Yuri Shimasawa [2], Kazuo Nagasawa [2], Hanbin Mao [1]

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[2] Tokyo University of Agriculture and Technology

P1.STR.18 Identification of G4 Structures in Industrial Bacterium Bacillus Subtilis

Maria Vittoria Cottini [1], Sidra Ishrat [1], Polina Marchenko [1], Jan Jamroskovic [1]

[1] Slovak Academy of Sciences

P1.STR.19 Persistence Lengths of Extended Tet1.5 and G10 G-Wire DNA

James Vesenka [1], Mayuri Gilhooly [1], Eva Balog [1], Thomas C. Marsh [2]

[1] University of New England, [2] University of St. Thomas

P1.STR.20 Structure of a Human Telomeric Anti-Parallel G-Quadruplex With Terminal Overhang at a ds-ss DNA Junction

Constanza Avendano Avila [1], Brahim Heddi [1]

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P1.STR.21 Recognition of PIM1 Quadruplex-Duplex Hybrids by Bis-Quinolinium Ligands: In Vitro and In-Cell NMR Studies

Martina Lenarcic Zivkovic [1], Anirban Ghosh [2], Jakub Harnoš [2], Petr Stadlbauer [3], Jiri Sponer [3], Lukas Trantirek [2]

[1] National Institute of Chemistry, [2] Masaryk University, [3] Czech Academy of Sciences

P1.STR.22 Effects of Flanking Regions on DNA i-Motif Folding And Stability

Chuyang Zhang [1], Hariz Iskandar Mohd Nizal [1], Christopher Hennecker [1], Anthony Mittermaier [1]

[1] McGill University

P1.STR.23 Unraveling The Molecular Mechanisms of Vimentin Interaction with G-Quadruplex Repeats

Marta Cozzaglio [1], Nicolò Dal Ponte [1], Martina Rotondo [2], Barbara Biondi [3], Lukas Trantirek [4], Riccardo Rigo [1], Barbara Spolaore [1], Claudia Sissi [1]

[1] University of Padova, [2] University of Napoli,
[3] Institute of Biomolecular Chemistry, [4] Masaryk University

P1.STR.24 Physiological Recognition of the MYC G-Quadruplex by Berberine

Jinho Jang[1], Jonathan Dickerhoff [1], Nicole Brundridge [1], Scott Mcluckey [1], Danzhou Yang [1]

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P1.STR.25 DNA Secondary Structures and Their Chirality Induced Spin Selectivity

Pravin Pokhrel [1], Akm Kafi [1], Hao Shen [1], Hanbin Mao [1]

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P1.STR.26 G-Quadruplex DNA Inhibits Unwinding Activity But Promotes Liquid-Liquid Phase Separation by the DEAD-Box Helicase Ded1p

Jun Gao [1], Zhaofeng Gao [2], Andrea Putnam [2], Alicia Byrd [1], Sarah Venus [2], John Marecki [1], Andrea Edwards [1], Haley Lowe [1], Eckhard Jankowsky [2], Kevin Raney [1]

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P1.STR.27 Insights Into the Determinants of Vimentin-RNA Interaction

Riccardo Rigo [1], Marta Cozzaglio [1], Ernesto Mucenji [1], Claudia Sissi [1]

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P1.STR.28 Indenoisoquinolines Strongly Bind and Stabilize the MYC Promoter G-Quadruplex And Downregulate MYC

Mercedes Demoss [1], Rio Ohtake[1], Kaibo Wang [2], Guanhui Wu [1], Mark Cushman [1], Danzhou Yang [1]

[1] Purdue University, [2] China Pharmaceutical University

P1.STR.29 Structure and Dynamics of a Duplex-Embedded G-Quadruplex System Resolved to 7.4 Å Resolution by cryo-EM And SAXS

Robert Monsen [1]

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P1.STR.30 Structural Insights Into PDGFR-B Vacancy G-Quadruplex and Fill-In Mechanism

Rongxue Zhang [2], Kaibo Wang [1], Jonathan Dickerhoff [2], Danzhou Yang [2]

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P1.STR.31 Molecular Recognition of G-Quadruplex DNA by Novel Thymoquinone Derivatives: Insights on Their G-Quadruplex Stabilization and Anticancer Effects

Alaa Salem [1]

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P1.TAR.32 Analysis of Quadruplex Propensity of Aptamer Sequences

Anne Cucchiarini [1], Michaela Dobrovolná [2], Vaclav Brázda [2], Jean-Louis Mergny [1]

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P1.TAR.33 Targeting G-Quadruplex DNA in Pathogenic Bacteria as Novel Antimicrobial Treatment

Daniele Comi [1], Rubén Cebrián [2], Efres Belmonete-Reche [3], Valentina Pirota [1], Anne De Jong [2], Juan Carlos Morales [4], Mauro Freccero [1], Filippo Doria [1], Oscar P. Kuipers [2]

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P1.TAR.34 Exploring the BODIPY Phenyl Derivatives as I-Motifs Ligands

Jakub Żubertowski [1], Daria Praska [1], Magdalena Rapp [1], Anna Dembska [1]

[1] Adam Mickiewicz University

P1.TAR.36 Insights into the Natural Product Cepharanthine as a G-Quadruplex Ligand and New Therapeutic for Lymphoma

Kennith Swafford [1], Samantha Kendrick [1]

[1] University of Arkansas

P1.TAR.37 Indenoisoquinolines Potently Downregulate MYC and Induce Cancer Cell Death

Yichen Han[1], Kaibo Wang[1], Jun Wan[1], Mark Cushman[1], Danzhou Yang[1]

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POSTER SESSION 2

Thursday, June 5, 2025
1900-2100

P2.BIO.40 The Impact of Guanine Quadruplexes on Mitochondrial DNA Stability in Yeast

Shelby Rheinschmidt [1], Nayun Kim [1]

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P2.BIO.41 G-Quadruplexes are Sites of Differential Methylation and Alternative Promoter Usage in Metabolic Disorders And Cancer

Angelika Lahnsteiner [1], Victoria Ellmer [1], Esther Schoenauer [1], Angela Risch [1]

[1] *University of Salzburg*

P2.BIO.42 Permanganate/S1 Footprinting Reveals Evolutionary Dynamics of G-Quadruplex and Other Non-Canonical DNA Structures in Telomere-To-Telomere Ape Genomes

Jacob Sieg [1], Huiqing Zeng [1], Linnéa Smeds [1], Saswat Mohanty [1], Hana Palova [1], Angelika Lahnsteiner [2], Francesca Chiaromonte [1], Kateryna D. Makova [1]

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P2.BIO.43 G Registry Exchange, the Spare Tire, and the Complementary Strand Sequence Influence G-Quadruplex Folding in a Duplex-G-Quadruplex-Duplex Context

Aaron Fleming [1], Cynthia Burrows [1]

[1] *University of Utah*

P2.BIO.44 Visualizing Dynamic Phase Transitions of Ribonucleoprotein Condensates

Bikash Sahoo [1], Xiexiong Deng [1], Vojc Kocman [2], Janez Plavec [2], James Bardwell [1]

[1] *University of Michigan,* [2] *National Institute of Chemistry*

P2.BIO.45 G-Quadruplex Structures in Dysregulated Long Non-Coding RNA of Ovarian Cancer and their Binding Interactions with Human Serum Albumin

Deepshikha Singh [1], Bhaskar Datta [1], Chinamyee Shukla [1]

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P2.BIO.46 Biophysical Studies of Triplex-Protein Interactions From MALAT1 & METTL16

Maximilian Braun [1], Harald Schwalbe [1], Nina M. Krause [1], Ines Burkhart [1], Julia Wirmer-Bartoschek [1]

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P2.BIO.47 ALTering Cancer by Triggering Telomere Replication Stress Through the Stabilization of Promoter G-Quadruplex in SMARCAL1

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P2.BIO.48 Exploring Specific Recognition of DNA G-Quadruplexes By Polyaromatic Heterocyclic Amidines

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P2.BIO.49 G-Quadruplex Mediated Preferential Downregulation of c-myc: A Unique Pathway of the Anticancer Action of Immunomodulator Drugs

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P2.BIO.50 Conserved G-Quadruplex Structures in Dengue Virus Genomes Are Potential Small Molecule Targets

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P2.BIO.51 Transcriptome-Wide Analyses With G4-Ligands in Breast Cancer Identified a Multiple G4s Regulated Key Tumor Suppressor Gene CYLD

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P2.BIO.52 Microperoxidase-11 and its Derivatives as Selective Ligands for the Binding of G-Quadruplexes

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P2.NANO.53 Marginal Stability Mediated G-Quadruplex-Based Dnazyme Activity

Jiahao Ji [1], Pravin Pokhrel [1], Hao Shen [1], Hanbin Mao [1]

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P2.STR.55 Oxidative Lesions as Transcriptional Roadblocks in G-Rich Regions

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P2.STR.56 Effects of Single and Double Mutations on the MYC Promoter G-Quadruplex Using a Custom DNA Microarray

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P2.STR.57 Double-Headed Nucleotides in G-Quadruplexes

Krista Urup [1], Kasper Beck [1], Peter Reinholdt [1], Michael Petersen [1], Poul Nielsen [1]

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P2.STR.58 Cytosine Methylation Modulates the Stability and Folding Kinetics of the Bcl2mid G-Quadruplex

Natasa Medved [1], Mirko Cevec [1], Uros Javornik [1], San Hadzi [2], Jurij Lah [2], Janez Plavec [1]

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P2.STR.59 Influence of Dangling Ends on a G-Quadruplex of Klebsiella Pneumoniae Structures

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P2.STR.60 Exploring the G-Quadruplex/I-Motif Co-Localization Within a B-DNA Context

Davide Auricchio [1], Claudia Sissi [2], Jurij Lah [3], Michele Ghezzo [2]

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P2.STR.61 A Systematic Analysis of Topological Preferences of Two-Tetrad G-Quadruplexes

Amadeusz Woś [1], Dorota Gudanis-Sobocińska [1], Karol Pasternak [1], Karolina Zielińska [1], Zofia Gdaniec [1], Witold Andrałojć [1]

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P2.STR.63 Characterizing the G4 Landscape Across Development in C. elegans

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P2.STR.64 Custom G4 DNA Microarray Enables Broad and Unbiased Evaluation of G4-Targeted Small Molecules and Proteins

Kristen Colborn [1], Luying Chen[1], Guanhui Wu[1], Desiree Tillo[1], Charles Vinson[1], Danzhou Yang[1]

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P2.STR.65 Exploring How Fluorescent Luminarosine Derivatives Interact With G-Quadruplex DNA - Fluorescence, CD, and NMR Studies

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P2.STR.66 Structural Recognition of the MYC Promoter G-Quadruplex by a Quinoline Derivative: Insights Into Molecular Targeting Of Parallel G-Quadruplexes

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P2.STR.66 – Structural Recognition of the MYC Promoter G-Quadruplex by the Quinoline Derivative PEQ: Insights into Molecular Targeting of Parallel G-Quadruplexes

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P2.STR.68 Decoding the KRAS G-Quadruplex: Insights into Structural Dynamics and Ligand Identification

Rakshitha Hosahalli [1], Haley Michel [1], Justin Lemkul [1]

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P2.TAR.69 Two Original Strategies Based on Cyclic RGD to Deliver G4 Ligands for Selective Targeting Tumoral Cells

Daniele Comi [1], Valentina Pirota [1], Elia Bari [2], Giovanni Bisbano [1], Maria Luisa Torre [2], Massimo Serra [1], Mayra Paolillo [1], Filippo Doria [1]

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P2.TAR.70 Interactions of Simple BODIPY Dyes with Various DNA G-Quadruplexes

Jakub Żubertowski [1], Magdalena Rapp [1], Jan Dolichter [2], Błażej Rubiś [2], Anna Dembska [1]

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P2.TAR.71 Accessibility of Telomeric Overhangs to Stabilizing Small Molecules

Janan Alfehaid [1], Sajad Shiekh [1], Kazuo Nagasawa [2], Hamza Balci [1]

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P2.TAR.72 Discovery Of Small Molecules to Target DDX5 Unfolding of MYC Promoter G-Quadruplex For MYC Inhibition

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