THE 8TH ANNUAL MEETING OF THE ISRAELI CHAPTER OF THE CONTROLLED RELEASE SOCIETY (ICRS)

NEW TRENDS AND TECHNOLOGIES IN DRUG DELIVERY AND IN CONTROLLED-RELEASE BASED CONSUMER PRODUCTS

September 5-7, 2012
Hacienda Forestview Hotel, Maalot, Israel
ORGANIZING COMMITTEE

Prof. Ronit Satchi-Fainaro- Chairperson, Tel Aviv University

Prof. Rosa Azhari, Ort Braude College

Dr. Ayelet David, Ben-Gurion University of the Negev

Prof. Noah Lotan, Technion – Israel Institute of Technology

Prof. Rimona Margalit, Tel Aviv University

Dr. Adel Penhasi, DeGama & SPAI Group

Dr. Boaz Tirosh, Hebrew University of Jerusalem

Prof. Elka Touitou, Hebrew University of Jerusalem

Prof. Dan Peer, Tel Aviv University

Dr. Sigal Blau, Teva Pharmaceutical Industries LTD.

Prof. Yechezkel (Chezy) Barenholz, Hebrew University of Jerusalem

Prof. Smadar Cohen, Ben-Gurion University of the Negev

Prof. Abraham Domb, Hebrew University of Jerusalem

Prof. Marcelle Machluf, Technion – Israel Institute of Technology

Prof. Avri Rubinstein, Hebrew University of Jerusalem

Anat Eldar-Boock, Tel Aviv University
Sponsored by:
PROGRAM
Wednesday – September 5, 2012

12:30 - 14:00 REGISTRATION AND POSTERS SETUP

Rooms check-in at 15:00 pm

13:00 LUNCH

14:00 - 14:15 Welcome and introductory remarks
Ronit Satchi-Fainaro, ICRS President
Ehud Gazit, The Chief Scientist, The Ministry of Science and Technology, Israel

14:15 - 16:20 SESSION 1
NANOMEDICINES FOR CANCER THERAPY
Chairpersons: Alberto Gabizon and Yechezkel Barenholz

14:15- 15:00 KEYNOTE PRESENTATION
“Nanomedicines: Polymer Therapeutics- the end of the beginning”
Ruth Duncan
Cardiff, UK and CIPF, Valencia, Spain

15:00 – 15:20 Avi Schroeder (MIT, Technion)- “Focused cancer treatment: From drug delivery systems to programmed nano robots”

15:20- 15:40 Ayelet David (BGU)- “Stimulus-sensitive copolymer-conjugates for triggering intracellular drug penetration”

15:40- 16:00 Simon Benita (HUJI)- "Targeted drug loaded nanoparticles for improved cancer treatment"

16:00- 16:20 Itai Benhar (TAU)- "Studying design principles for bi-specific antibodies"

16:20- 16:50 COFFEE BREAK

16:50- 19:00 SESSION 2
TARGETING STEM CELLS AND REGENERATIVE MEDICINE
Chairpersons: Smadar Cohen and Rosa Azhari

16:50- 17:10 Marcelle Machluf (Technion)- "Cell derived vesicles: turning natural targeting to smart drug delivery systems"

17:10- 17:30 Tal Dvir (TAU)- “Delivering instructive cues and imaging biomolecules to 3D engineered tissues”

17:30- 17:50 Boaz Tirosh (HUJI)- “The unfolded protein response as a regulator of drug induced liver injury”
**Wednesday – September 5, 2012 (Continued)**

18:00-19:15 **Short presentations (15 x 5 min) of selected posters from submitted abstracts:**

1. Gili Bisker (Technion)- Controlled release of Rituximab from gold nanoparticles for phototherapy of malignant cells

2. Eliahu Heldman (BGU)- Brain delivery of proteins using bolaamphiphilic nanosized vesicles: mechanisms and efficiency

3. Ravit Edelman (Technion)- Hyaluronic acid based quadrugnostic nanoparticle for cancer therapy

4. Anat Eldar-Boock (TAU)- Overcoming paclitaxel resistance with anti-angiogenic and anticancer RGD-bearing nanomedicine

5. Adi Golani (BGU)- Polyion complexes for gene delivery to dendritic cells

6. Neta Zilony (BIU)- A novel biolostic technology for controlled delivery of nano-structured porous Si drug carriers

7. Talia Shekhter (TAU)- Novel somatostatin analog conjugates for pancreatic cancer detection

8. Mirjam M. Nordling-David (HUJI)- Targeted siRNA liposomes and nanoparticles

9. Anna Scomparin (TAU)- Folated drug delivery systems of doxorubicin: a comparative study

10. Wahid Khan (HUJI)- Pharmacokinetic and efficacy study of cisplatin formulated in a new injectable polymer

11. Nadav Ben-Dov (TAU)- Crossing the barrier: New pathway for delivering molecules across the cell’s plasma membrane

12. Nour Karra (HUJI)- Design and evaluation of drug loaded cetuximab immunonanoparticles prepared using a novel linker molecule

13. Brenda Laster (BGU)- Simultaneous chemotherapy and radiotherapy of tumors

14. Alexander Adriyanov (HUJI)- Anticancer therapy based on nanodrug chemotherapy combined with thermal ablation

15. Yaelle Felsen (HUJI)- An Improved Pegylated Liposomal Doxorubicin with Significantly Lower PPE than Doxil®

20:30 **COCKTAIL RECEPTION AND POSTER SESSION**
Thursday – September 6, 2012

8:00-8:30  ADMINISTRATIVE SESSION: General Assembly of ICRS

8:30-10:15  SESSION 3
NANO-PARTICULATED DRUG DELIVERY SYSTEMS
Chairpersons: Rimona Margalit and Shimon Amselem

8:30 - 9:15  KEYNOTE PRESENTATION
The next step in drug targeting: Inside cells and to individual organelles
Vladimir Torchilin
Northeastern University, MA, USA

9:15-9:35 Chezy Barenholz (HUJI) - “PEGylated Nano-liposomes loaded with amphipathic weak acid glucocorticosteroids for successful systemic treatment of animal models for Rheumatoid arthritis (RA), multiple sclerosis (MS), cerebral malaria (CM) and cancer”

9:35-9:55 Alberto Gabizon (Shaarei Zedek) - "A novel formulation of liposome co-encapsulated alendronate and doxorubicin for cancer therapy"

9:55-10:15 Dan Peer (TAU) - "Gagomers: Novel Safe Particle Clusters for Systemic Delivery of Therapeutic Payloads"

10:00-10:45  COFFEE BREAK

10:45-11:05 Mimi Kaplan (Ministry of Health) - “Implementation of Quality by Design – a new approach to drug development”

11:05-11:25 Rimona Margalit (TAU) - “Acute and chronic inflammations treated by steroid, NSAID and antioxidant drugs encapsulated alone or in combination in biomaterial-based bioadhesive carriers”

11:30-13:30  SESSION 4
INDUSTRIAL VIEW ON CONTROLLED RELEASE OF BIOACTIVE MATERIALS
Chairpersons: Ittai Harel and Amira Zeevi

11:30-12:00 Aharon Schwartz - "Targeted therapy = Personalized Therapy?"

12:00-12:15 Gal Ehrlich (Ehrlich & Fenster, Patent Attorneys) - "IP Strategy for Drug Development"

12:15-12:30 Noam Emanuel (PolyPid Ltd.) - “BonyPid™: A lipid- and polymer-based novel drug delivery system: physicochemical aspects and therapy”
Thursday – September 6, 2012 (Continued)

12:30-13:30  INDUSTRIAL DISCUSSION PANEL:
Moderator: Simone Botti (Merck Serono)
Panel members: Aharon Schwartz, Amira Zeevi (Perrigo), Sigal Blau
(Teva Pharmaceuticals), Adrian Gilbert (Teva Pharmaceuticals), Ittai
Harel (Pitango), Gal Ehrlich (Ehrlich & Fenster), Noam Emanuel
(PolyPid), Adel Penhasi (DeGama & SPAI Group), Shimon Amselem
(Nextar ChemPharma Solutions Ltd.), Yaniv Dolev (Moebius Medical
Ltd.).

13:30-15:00  LUNCH FOR ALL PARTICIPANTS AND POSTER VIEWING

15:00-17:00  SESSION 5
DRUG DELIVERY ISSUES IN INFECTIOUS AND RARE
DISEASES
Chairpersons: Jean-Paul Lellouche and Yechiel Shai

15:00-15:20  Shula Michaeli (BIU)- "Nano-Silencing from Trypanosomes to
Man"

15:20-15:40  Yechiel Shai (WIS)- "Targeting and lysis of bacteria, fungi and
cancer by host-defense-like membrane active peptides and nano-
particle lipopeptides"

15:40-16:00  Avi Domb (HUJI)- “Crystallization and release of rapamycin from
metallic stents”

16:00-16:20  Meital Reches (HUJI)- “Self-assembly of biomolecular necklaces”

16:20-17:05  Short presentations (9 x 5 min) of selected posters:

1. Yael Lupu (Technion)- Elucidating the mechanism of interactions between
mesenchymal stem cell derived nano-vesicles and cancer cells

2. Yosi Shamay (BGU)- Controlled penetration of HPMA-R8 copolymers into tumors
using biodegradable polyanions

3. Aharaon Azaguri (BGU)- The mechanism of ultrasound effect on chorioamnion
membrane mass transport

4. Naama Toledano Furman (Technion)- Stem cell derived nano-vesicles, a new
delivery platform for cancer targeted therapy

5. Dina Polyak (TAU)- Development of nano-scaled polymeric carriers for integrin-
assisted doxorubicin delivery

6. Oren Giladi (HUJI)- Targeted radiolabeled immune-nanoparticles for treatment of
HER-2/neu positive cancers
Thursday – September 6, 2012 (Continued)

7. Yossi Kam (HUJI)- Detection of endogenous K-Ras mRNA in living cells by molecular beacons

8. Shoshy Mizrahy (TAU)- Hyaluronan coated nanoparticles: the influence of them Mw on CD44-Hyaluronan interaction and immune response

9. Hadas Skaat (BIU)- Magnetic scaffolds enriched with bioactive nanoparticles for tissue engineering. **Winner of the Barenholz Prize.**

17: 05-17:30 **COFFEE BREAK**

17:30-19:00 **SESSION 6**

**SELECTED ROUTES OF ADMINISTRATION**
Chairpersons: **Amnon Hoffman and Gershon Golomb**

17:30 -17:50 Avri Rubinstein (HUJI)- "Mucosal targeting of biomarkers for real-time diagnostics of GI malignancy by drug delivery tools"

17:50-18:05 Yoav Livney (Technion)- “Quadrugnostic nanoparticles for cancer therapy“


18:20-18:35 Dvir Yelin (Technion)- "Release of antibodies from gold nanospheres during short-pulse laser phototherapy"

18:35-18:50 Sigal Blau (Teva Pharmaceuticals)- "Gastric retentive oral dosage forms –when reality met theory"

18:50-19:20 **Short presentations (6 x 5 min) of selected posters from industry abstracts:**

1. Hilla Epstein-Barash (Entrega Inc.)- "Orally bioactive mucoadhesive intestinal polypeptide delivery systems"

2. Shimon Amselem (Nextar ChemPharma Solutions Ltd.)- “Effective sublingual delivery of flumazenil formulation for reversing the residual sleepiness effect of hypnotic drugs”

3. Salit Tzaban (Protalix Biotherapeutics)- “Plant cells as oral delivery vehicle of human recombinant glucocerebrosidase for the treatment of Gaucher disease”

4. Yaniv Dolev (Moebius Medical Ltd.)- "Liposomes as lubricants, a new approach for osteoarthritis – Ongoing trials"
Thursday – September 6, 2012 (Continued)

5. Joseph Wyse (Patents, Dr. Eyal Bressler Ltd.,) - "Patent protection for innovations in anti-angiogenic therapy"

6. Tal Sarid (Dr Golik) - Break-through in the processing and controlling of biodegradable micro-capsules as drug carriers

20:30 GALA DINNER

- Presentation of the ICRS Prize for Outstanding Achievements in Controlled Release to Prof. Simon Benita
- Presentation of the 2012 Barenholz Award to Hadas Skaat sponsored by Professor Chezy Barenholz
- Presentation of the 2012 Best Student Poster Awards:
  First prize: Award sponsored by Teva Pharmaceuticals Ltd.
  Second prize: Award sponsored by Dexcel Pharma Ltd.
  Third prizes: Awards sponsored by Unipharm Ltd. and Silicol Scientific Equipment Ltd.
Friday – September 7, 2012

Check-out at 11:00 am

<table>
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<th>Time</th>
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| 8:30-10:35 | SESSION 7  
**THERANOOSTIC NANOTECHNOLOGIES FOR PERSONALIZED MEDICINE**  
Chairpersons: *Ehud Gazit and Roey Amir* |
| 8:30 - 9:15 | KEYNOTE PRESENTATION  
*Molecular trees: From the test tube towards biomedical applications*  
*Rainer Haag  
Frei University Berlin, Germany* |
| 9:15-9:35 | Rachela Popovtzer (BIU)- *"Gold nanoparticles as computed tomography imaging contrast agents"* |
| 9:35-9:55 | Thomas L. Andresen (Technical University of Denmark)- *"Liposome imaging agents for personalizing treatment with nanocarriers"* |
| 9:55-10:15 | Eylon Yavin (HUJI)- *“Peptide nucleic acids (PNAs) in cancer diagnosis”* |
| 10:15-10:35 | Galia Blum (HUJI)- *"Quenched activity based probes for simultaneous detection and therapy of cancer"* |
| 10:35-11:00 | **COFFEE BREAK** |
| 11:00-12:30 | SESSION 8  
**NOVEL BIOMOLECULAR SELF-ASSEMBLED SYSTEMS FOR DRUG DELIVERY**  
Chairpersons: *Yaron Dekel and David Stepensky* |
| 11:00-11:20 | Niv Papo (BGU)- *“Directed evolution of affinity scaffolds for drug delivery and biomedical diagnostics”* |
| 11:20-11:40 | Yael Shaked (Dr Golik)- *"Benefits of different characterization techniques for drug delivery application"* |
| 11:40-12:00 | Roey Amir (TAU)- *"Hybrid PEG-dendritic scaffolds as nanocarriers for drug and gene delivery"* |
| 12:00-12:20 | Ehud Gazit (TAU)- *"The mechanism of association and technological applications of self-assembled peptide nanostructures"* |
| 12:20-12:30 | **Concluding remarks**  
*Ronit Satchi-Fainaro* |
| 12:30-13:30 | **FAREWELL LIGHT LUNCH FOR ALL PARTICIPANTS** |