



Protein expression and characterization workshop

May 11-12, 2014

The David Lopatie Conference Centre, Weizmann Institute of Science

Program

► [Link to the abstracts](#)

Contact

Irit Veksler ■ irit.veksler@weizmann.ac.il
Ela Ulman ■ ela.ulman@weizmann.ac.il

Organizers

Yoav Peleg ■ Weizmann Institute of Science
Tamar Unger ■ Weizmann Institute of Science

Sunday, 11 May, 2014

- 8:15 Coffee
- 8:45 Greetings and opening remarks
Prof. Zvi Livneh, Dean, Faculty of Biochemistry
Prof. Gideon Schreiber, Director of I-CORE center on Integrated Structural Cell Biology
Dr. Tamar Unger, Structural Proteomics Unit

Session I: Protein expression (Chair: Ron Diskin)

- 9:00 James D Love (Albert Einstein College of Medicine, NY)
High throughput protein at NYSGRG
- 9:45 Itai Benhar (Tel-Aviv University)
Rapid production of IgGs, Fabs and fusion proteins thereof in *E. coli*
- 10:10 Yoseph Shaaltiel (Protalix Biotherapeutics)
Protein expression in plant cell in suspension for pharmaceutical use
- 10:35 Coffee break

Session II: Protein engineering (Chair: Sarel Fleishman)

- 11:00 Yoram Reiter (Technion)
Structure-function studies that reveal the unique binding properties of antibodies that mimic T cells specificity
- 11:25 Tsafi Danieli (Hebrew University)
Enhancing protein secretion
- 11:50 Opher Gileadi (SGC, Oxford)
Rescuing orphans by engineering: A case study
- 12:15 Adi Goldenzweig (Weizmann Institute of Science)
An unstable protein withholds your research? towards a fully automated protein thermostabilization algorithm for wide use
- 12:40 Moshe Goldsmith (Weizmann Institute of Science)
Enzyme engineering by targeted libraries
- 13:05 Lunch

Session III: Protein characterization (Chair: Jacob Anglister)

- 14:05 Lewis Kay (University of Toronto)
NMR studies of supra-molecular machines: The proteasome
- 14:50 Gili Ben-Nissan (Weizmann Institute of Science)
The COP9-Signalsome as a model to study the structure/ function relationship of large protein complexes
- 15:15 Yishai Levin (Weizmann Institute of Science)
Lessons learned from protein-protein interaction experiments by mass spectrometry
- 15:40 Hadar Amartely (Hebrew University)
Use of SEC-MALS (Size Exclusion Chromatography - Multi Angle Light Scattering) for protein quality and characterization
- 16:05 Coffee break

Session IV: Protein-protein interaction (Chair: Shira Albeck)

- 16:30** **Emmanuel Levy** (Weizmann Institute of Science)
Promiscuous protein-protein interactions: a burden for the cell and a tool for the biologist
- 16:55** **Arieh Gertler** (Hebrew University)
Development of high-affinity recombinant adipokine/cytokine antagonists: blocking of leptin, IL22 and resistin

Monday, 12 May, 2014

8:30 **Coffee**

Session V: Membrane proteins (Chair: Steve Karlsh)

- 9:00** **James D Love** (Albert Einstein College of Medicine, NY)
Production of human integral membrane proteins in mammalian cells
- 9:45** **Adriana Katz** (Weizmann Institute of Science)
Expression in *Pichia pastoris* of isoforms of Na,K-ATPase, purification and applications of the purified isoform complexes
- 10:10** **Jordan Chill** (Bar-Ilan University)
Overcoming challenges in expression, purification and NMR characterization of membrane proteins
- 10:35** **Osnat Tirosh** (Weizmann Institute of Science)
Towards crystallization of MdfA, a promiscuous secondary multidrug transporter

11:00 **Coffee break**

Session VI: Inclusion bodies and aggregates (Chair: Orly Dym)

- 11:25** **Gideon Schreiber** (Weizmann Institute of Science)
Proteins expression in inclusion bodies
- 11:50** **Mario Lebendiker** (Hebrew University)
Production of prone-to-aggregate proteins

Session VII: DNA manipulation and bioinformatics (Chair: Orly Dym)

- 12:15** **Yoav Peleg** (Weizmann Institute of Science)
Molecular tools for facilitating DNA manipulation and protein expression
- 12:40** **Niv Antonovsky** (Weizmann Institute of Science)
Spanning high-dimensional expression space using ribosome-binding site combinatorics
- 13:05** **Jaime Prilusky** (Weizmann Institute of Science)
SuggesES (Suggest an Expression System)

13:30 **Lunch**

Session VIII: Protein production and analysis (Chair: Tsafi Danieli)

- 14:30** **Arie Admon** (Technion)
Analysis of the full proteome and HLA peptidome by mass spectrometry
- 14:55** **Gali Prag** (Tel-Aviv University)
Novel bacterial expression systems to genetically select and purify ubiquitinated-proteins
- 15:20** **Ram Uritski** (BiondVax Pharmaceuticals)
Process development challenges in purification and formulation of a recombinant polypeptide with limited solubility
- 15:45** **Coffee break**
- 16:10** **Joel Van Gelder** (InSight Biopharmaceuticals)
The development of INS-004 - a biosimilar therapeutic monoclonal antibody
- 16:35** **Tamar Auerbach-Nevo** (Omrix Biopharmaceuticals)
Purification and on-column activation of Thrombin

Session IX: Large-scale production (Chair: Mario Lebendiker)

- 17:00** **Galia Yirme** (Bonus BioGroup)
Process development of cell expansion and protein production in bioreactors
- 17:25** **Ghil Jona** (Weizmann Institute of Science)
Moving protein expression from the laboratory scale to large-scale high density fermentation
- 17:50** **Tamar Unger** (Weizmann Institute of Science)
Concluding remarks and open discussion

Sponsors

I-CORE center on Integrated Structural
Cell Biology
ISPC – The Dana and Yossie Hollander
Center for Structural Proteomics

Goldschleger Foundation
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Supported by the I-CORE Program of the Planning and Budgeting Committee and
The Israel Science Foundation (grant No. 1775/12)