



האיגוד הקרדיולוגי בישראל  
ISRAEL HEART SOCIETY



**The XXVI Annual Meeting of the  
Israel Group for Heart Research  
Subsection of the  
ISHR - International Society for Heart Research  
European Section**

**The **Red** Hall – Faculty of Medicine  
Technion – Israel Institute of Technology  
Haifa, Israel**

**February 25<sup>th</sup>, 2010**



**Meeting organizer: Prof. Amir Landesberg  
Faculty of Biomedical Engineering**

Local Executive Board

**Secretary**

**Amir Landesberg, Haifa**

**Treasurer**

**Michael Arad, Tel Aviv**

**Ofer Binah, Haifa**

**Michal Horowitz, Jerusalem**

**Ronen Beeri, Jerusalem**

**ISHR-ES Council Member**

**Moshe Flugelman, Haifa**

- 08:30-09:00 Registration and coffee**
- 09:00-09:10 Greetings:**  
Prof Oded Shmueli – Vice President for research – Technion IIT  
Prof. Amir Landesberg – Secretary Israeli subsection of the ISHR  
Prof Michal Horowitz  
Prof Michael Arad
- 09:10-09:45 Keynote lecture: Prof. Moshe Flugelman**  
Head of Inpatient Cardiology, Carmel Medical Center, Haifa  
“Cell therapy for induction of angiogenesis”
- 09:45-11:30 1. Rena Yarom Young Investigator Award Competition (7 presentations)**  
Chairmen: Amir Landesberg and Moshe Flugelman
- 11:30-11:45 Coffee break**
- 11:45-12:45 2. Cardiac Regeneration – Red Hall (4 presentations)**  
Chairmen: Shulamit Levenberg and Gania Kessler-Icekson
- 3. Coronary heart disease - Blue Hall (4 presentations)**  
Chairmen: Yonathan Hassin and Haim Danenberg
- 12:45-14:00 Lunch break**  
Business meeting: a) Japan conference, May 2010 –The Geographic Soci  
b) Election executive board  
c) European conference, Haifa March 2011
- 14:00-14:40 Keynote lecture: Prof. Kobi George**  
Head Dept of Cardiology, Kaplan hospital  
"Endothelial Progenitor Cells in Cardiovascular Medicine"
- 14:40-15:40 4. Cardioprotection - Red Hall (4 presentations)**  
Chairmen: Michal Horowitz and Arie Moran
- 15:40:16:15 Keynote lecture: Dr. Gera Strommer,**  
Co Founder Mediguide  
“The MediGuide gMPS™ - Medical Positioning System: the GPS of  
Interventional Cardiology”
- 16:15-16:30 Coffee break – for 10 minutes**
- 16:30-17:30 5. Myocardial Infarction - Red Hall (4 presentations)**  
Chairpersons: Uri Dinnar & Jonathan Lessick
- 6. Systemic effects – Blue Hall (5 presentations)**  
**Joint Session with the “Israel Heart Society”**  
Chairmen: Ronen Beeri and Michael Arad
- 17:30 Closing and price awards**



**Location:**

The meeting will be held in the **red hall** at the Ruth & Bruce Rappaport Faculty of Medicine, Bat-Galim, Efron Street, Haifa - **adjacent to Rambam Medical Hospital.**

**Entrance to Technion by Car:**

Those who need additional permit should contact:

**Betty Kazin, Tel 04-829 4137 - Email: [bettykazin@gmail.com](mailto:bettykazin@gmail.com)**

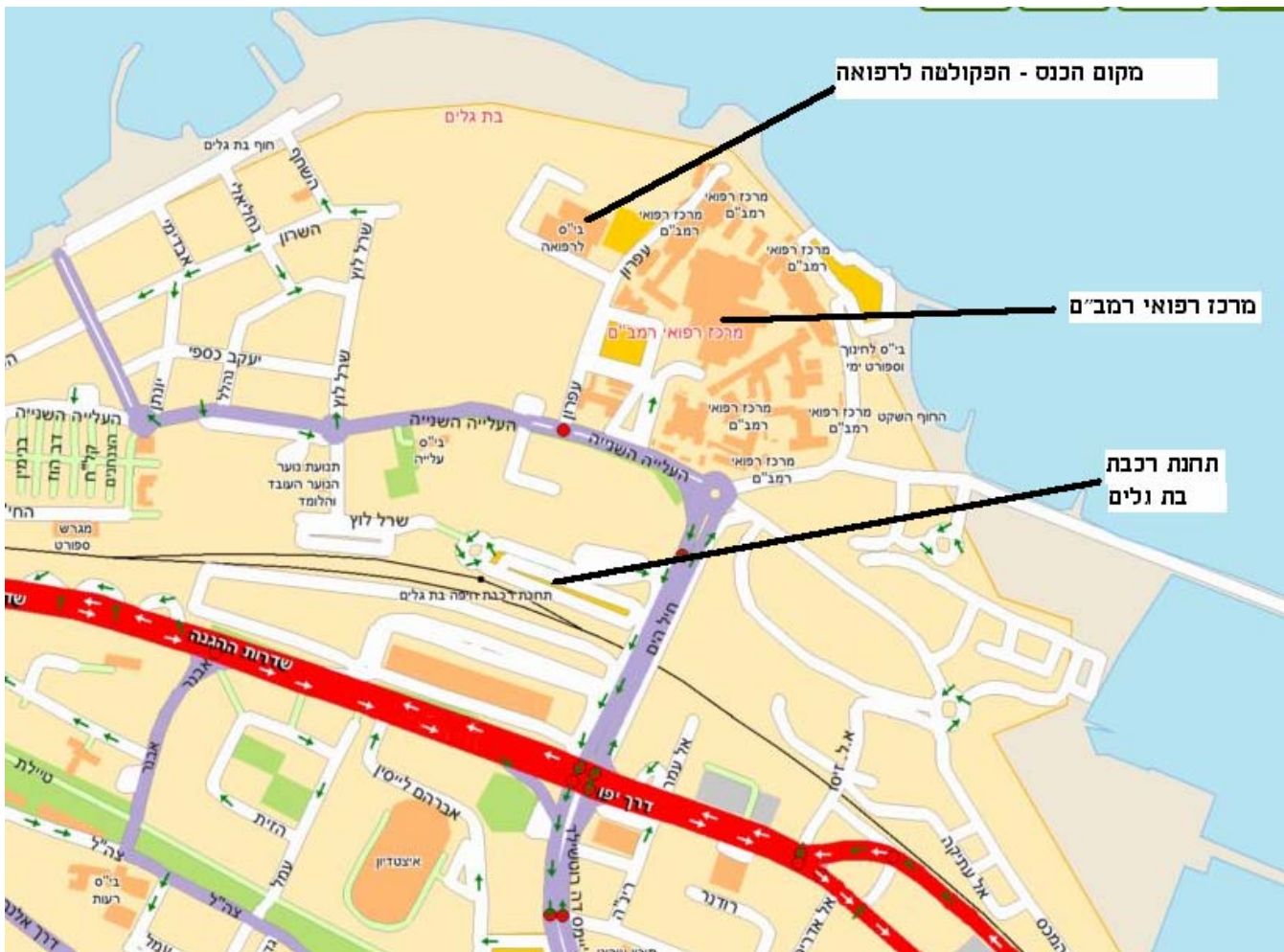
**Registration and membership for the Israeli Group of Heart research:**

Graduate student/Senior citizen IS 50

Graduate student/Ssenior citizen + ISHR membership IS 120

Researcher/Clinician/Industrialist IS 200

Researcher/Clinician/Industrialist + ISHR membership IS 320



**Keynote lecture: Prof. Moshe Flugelman**  
**Head of Inpatient Cardiology, Carmel Medical Center, Haifa**  
**“Cell therapy for induction of angiogenesis”**

**1. Rena Yarom Young Investigator Award Competition**

**Chairmen: Amir Landesberg and Moshe Flugelman**

**1.1 ZNT-1 ENHANCES THE SURFACE EXPRESSION OF CA<sub>v</sub>3.2 THROUGH ACTIVATION OF RAF-1/MEK/ERK SIGNALING**

*<sup>1</sup>Merav Mor, <sup>1</sup>Ofer Beharier, <sup>2</sup>Yoram Etzion, <sup>2,3</sup>Amos Katz and <sup>1</sup>Arie Moran*

<sup>1</sup>Physiology, Health Sciences, Ben Gurion Univ, Beer Sheva, <sup>2</sup>Cardiac Arrhythmia Research Lab, Soroka Univ Med Center, Beer Sheva, <sup>3</sup>Cardiology Dep Barzilai Med Center, Ashkelon

**1.2 CARDIOMYOCYTE DIFFERENTIATION OF HUMAN INDUCED PLURIPOTENT STEM CELLS**

*Limor Zwi, Oren Caspi, Gil Arbel, Irit Huber, Amira Gepstein and Lior Gepstein*

Sohns Family Research Lab for Cardiac Electrophysiology and Regenerative Med, the Rappaport Family Inst Research Medical Sci, Technion–Israel Inst of Tech, Haifa, Israel

**1.3 ADE-1, A NOVEL CARDIOTONIC PEPTIDE FROM THE SEA ANEMONE *AIPTASIA DIAPHANA*: CHEMISTRY AND MODE OF ACTION**

*Nesher N<sup>2</sup>, Hochner B<sup>1</sup>, Horowitz M<sup>1</sup>, Zlotkin E<sup>1</sup>*

<sup>1</sup>Dep Cell and animal biology, <sup>2</sup>Dep Neurobiology. <sup>1</sup>Lab Environmental Physiology, The Hebrew University, Jerusalem

**1.4 POPDC1 IS A NOVEL CAVEOLAE PROTEIN ASSOCIATED WITH COSTAMERES AND IMPORTANT FOR CARDIAC PROTECTION**

*Yifat Alcalay<sup>1</sup>, Julia Dick<sup>1</sup>, Edith Hochhauser<sup>1</sup>, Thomas Brand<sup>2</sup>, Gania Kessler-Icekson<sup>1</sup>*

<sup>1</sup>Felsenstein Medical Research Center, Tel-Aviv University, Tel-Aviv, Israel;

<sup>2</sup>Cell and Developmental Biology, Wuerzburg University, Germany

**1.5 THE RELATION BETWEEN MUTANT PROTEIN LEVEL AND ARRHYTHMIA SEVERITY IN CATECHOLAMINE DEPENDENT POLYMORPHIC VENTRICULAR TACHYCARDIA (CPVT)**

*Guy Katz<sup>1</sup>, Asher Shainberg<sup>2</sup>, Edith Hochhauser<sup>3</sup>, Efrat Kurtzwald<sup>1,3</sup>, Yelena Chepurko<sup>3</sup>, Eyal Porat<sup>3</sup>, Jonathan G. Seidman<sup>4</sup>, Michael Eldar<sup>1</sup> and Michael Arad<sup>1</sup>*

<sup>1</sup>Heart Institute, Sheba Medical Center, Tel Hashomer; <sup>2</sup>Dep Life Sciences, Bar Ilan Univ, <sup>3</sup>Cardiac Research Lab, Felsenstein Medical Research Center, Sackler School of Medicine, Tel Aviv Univ; <sup>4</sup>Dep Genetics, Harvard Medical School, Boston, USA

**1.6 MODELING OF FLOW-INDUCED SHEAR STRESS APPLIED ON 3D CELLULAR SCAFFOLDS: IMPLICATIONS FOR VASCULAR TISSUE ENGINEERING**

*Ayelet Lesman, Yaron Blinder, Shulamit Levenberg*

Faculty Biomed Eng, Technion, Israel Inst Technol, Haifa, Israel

**1.7 THE ADAPTIVE CONTROL OF SHEEP HEART ENERGETICS BY THE LOADING CONDITIONS; NEW INSIGHTS FROM DESCRIBING THE MACRO BASED ON SARCOMERIC CONTROL MECHANISMS**

*Gali Sela and Amir Landesberg*

Faculty Biomed Eng, Technion, Israel Inst. Technol, Haifa, Israel

## **2. Cardiac Regeneration – (Red Hall)**

**Chairmen: Shulamit Levenberg and Gania Kessler-Ickson**

### **2.1 RESIDENT CARDIAC STEM CELLS FROM THE LEFT ATRIAL APPENDAGE**

*Jordanna Platt<sup>§\*</sup>, Avishag Korkus<sup>§</sup>, Yaron Helman<sup>§</sup>, Shai Shimoni<sup>§</sup>, Chaim Lotan<sup>§</sup>, Ronen Beeri<sup>§</sup>*

<sup>§</sup>Cardiovascular Research Center, Heart Institute, Hadassah Hebrew Univ Med Center, <sup>\*</sup>Albert Einstein College of Medicine, Bronx, NY, USA

### **2.2 UMBILICAL CORD WHARTON'S JELLY- DERIVED MESENCHYMAL STEM CELLS - A POTENTIAL NEW CELL SOURCE FOR INFARCT REPAIR?**

*David Kain<sup>1,2</sup>, Natalie Landa-Rouben<sup>1,2</sup>, Ryta Lypov<sup>3</sup>, Margarita Mayorov<sup>3</sup>, Micha S Feinberg<sup>1</sup>, Arnon Nagler, MD<sup>3</sup>, Jonathan Leor, MD<sup>1,2</sup>.*

<sup>1</sup>Neufeld Cardiac Research Inst, Sheba Medical Center, Tel-Aviv Univ, Tel-Hashomer, Israel; <sup>2</sup>Eng Center Tissue Regenerative Med Stem Cell and Sheba Med Center, Tel-Hashomer Sheba, <sup>3</sup>Dep of Bone Marrow Transplantation and Cord Blood Bank, Sheba Med Center, Tel-Aviv Univ, Tel-Hashomer, Israel

### **2.3 AN INJECTABLE BIOMATERIAL FOR CARDIAC TISSUE ENGINEERING**

*Keren Shapira-Schweitzer<sup>1</sup>, Manhal Habib<sup>2</sup>, Lior Gepstein<sup>2</sup>, and Dror Seliktar<sup>1</sup>*

<sup>1</sup>Fac Biomed Eng, Technion, and <sup>2</sup>Fac of med, Israel Inst Technol, Haifa, Israel

### **2.4 ENGINEERING THICK MYOCARDIAL-LIKE TISSUE CONSTRUCTS: PROSPECTS FOR VASCULARIZED ECM**

*Udi Sarig & Marcelle Machluf*

Fac Biotechnol and Food Eng., Technion, Israel Inst Technol, Haifa, Israel

## **3. Coronary Heart Disease (Blue Hall)**

**Chairmen: Yonathan Hassin and Haim Danenberg**

### **3.1 CAROTID PLAQUE VULNERABILITY: QUANTIFICATION OF NEOVASCULARIZATION ON CONTRAST ENHANCED ULTRASOUND WITH HISTOPATHOLOGICAL CORRELATION**

*Hoogi Assaf<sup>1</sup>, Gaitini Diana<sup>2</sup>, Hoffman Aaron<sup>2</sup>, Kerner Hedviga<sup>2</sup>, Reisner Shimon<sup>2</sup>, Adam Dan<sup>1</sup>*

<sup>1</sup> Fac Biomed Eng, Technion, Haifa, Israel, <sup>2</sup> Rambam Health Care Campus, Haifa, Israel

### **3.2 3D CHARACTERIZATION OF CORONARY ARTERIES FOR ASSESSING RISK OF PLAQUE RUPTURE BY USING PATIENT-SPECIFIC COMPUTATIONAL MODELS BASED ON IVUS-VH IMAGES**

*Ifat Lavi<sup>1</sup>, Shmuel Einav<sup>1</sup>, Ran Kornowsk<sup>2</sup>*

<sup>1</sup>Dep Biomed Eng, Tel-Aviv Univ, Tel-Aviv, Israel; <sup>2</sup>Rabin Med Center, Petach Tikva, & the Sackler School of Medicine

### **3.3 ENDOTHELIAL C-REACTIVE PROTEIN INCREASES PLATELET ADHESION UNDER FLOW CONDITIONS**

*Etty Grad, Rachel M. Pachino, Chaim Lotan, Haim D. Danenberg*

Cardiology, Hadassah Hebrew University Medical Center, Jerusalem, Israel

### **3.4 THE EFFECT OF INTENSIVE GLYCEMIC CONTROL ON ENDOTHELIAL PROGENITOR CELLS LEVEL AND FUNCTION IN PATIENTS WITH DIABETES**

*Lev Eli<sup>1,2</sup>, Zinger Joel<sup>3</sup>, Leshem-Lev Dorit<sup>2</sup>, Battler Alexander<sup>1,2</sup>, Kornowski Ran<sup>1</sup>*

<sup>1</sup>Cardiology Dep Rabin Med Center, Petach-Tikva & Sackler Med Fac, Tel-Aviv Univ, Israel; <sup>2</sup> Felsenstein Med Research Inst, Israel <sup>3</sup>Diabetes clinic Rabin Med Center, Petach-Tikva

## **Keynote lecture: Prof. Kobi George**

Head of the Heart Institute at Kaplan Hospital, Rehovot

### **“Endothelial Progenitor Cells in Cardiovascular Medicine”**

## **4. Cardioprotection (Red Hall)**

**Chairmen: Michal Horowitz and Arie Moran**

### **4.1 HEMIN TREATMENT AS A DEFENSE AGAINST DAMAGE INDUCED BY HYPOXIA IN CARDIOMYOCYTE CULTURES**

*Mor Rutheizer, Ahuva Isak and Asher Shainberg*

The Mina & Everard Goodman Faculty of life Sciences, Bar-Ilan University, Ramat Gan

### **4.2 THE CARDIOPROTECTIVE EFFICACY OF TVP1022 IN A RAT MODEL OF MYOCARDIAL INFARCTION: INVOLVEMENT OF THE GLYCOGEN SYNTHASE KINASE 3B PATHWAY AND THE MITOCHONDRIAL PERMEABILITY TRANSITION PORE**

*<sup>1,2</sup>Ertracht Offir, <sup>1,2</sup>Liani Esti, <sup>4</sup>Bachner Noa, <sup>3</sup>Bar-Am Orit, <sup>1,2</sup>Ovcharenko Elena, <sup>1</sup>Awad Huda, <sup>1,2</sup>Barac Yaron, <sup>1,2</sup>Frolov Luba, <sup>3</sup>Amit Tamar, <sup>1</sup>Abassi Zaid, <sup>4</sup>Adam Dan, <sup>3</sup>Youdim Moussa, <sup>1,2</sup>Binah Ofer*

<sup>1</sup>Dep Physiology, <sup>2</sup>Ruth and Bruce Rappaport Family Inst. Research in the Med Sciences, <sup>3</sup>Dep Pharmacology, Ruth and Bruce Rappaport Fac of Medicine, <sup>4</sup>Fac Biomed Eng, Technion-Israel Inst of Technol, Haifa, Israel

### **4.3 PEPTIDE BINDING HEAT SHOCK PROTEIN GRP78 PROTECTS CARDIOMYOCYTES FROM HYPOXIA INDUCED APOPTOSIS**

*Annat Raiter and Britta Hardy*

Lab Cellular and Vascular Immunology, Felsenstein Med Res Center, Tel-Aviv Univ Sackler School of Med, Rabin Medical Center, Beilinson Campus, Petach-Tikva, Israel.

### **4.4 DRUG FACTORIES ON STENT: A NOVEL THERAPEUTIC APPROACH**

*Meital Alagem<sup>1</sup>, Sarit Sivan<sup>1</sup>, Moshe Flugelman<sup>2, 3</sup>, Rafael Beyar<sup>1, 2, 4</sup>, Uri Dinnar<sup>1</sup> & Noah Lotan<sup>1</sup>*

<sup>1</sup>Fac Biomed. Eng., Technion, Israel Inst. Technol. ;<sup>(2)</sup> School of Medicine, Technion, Israel Inst. Technol.;<sup>(3)</sup> Cardiology Dept., Carmel Med Center;<sup>(4)</sup> Rambam Medical Center, Haifa, Israel

## **Keynote lecture: Dr. Gera Strommer,**

Co Founder Mediguide

### **"The MediGuide gMPS™ - Medical Positioning System: the GPS of Interventional Cardiology"**

## **5. Myocardial Infarction (Red Hall)**

**Chairmen: Uri Dinnar and Jonathan Lessick**

### **5.1 STRAIN MEASUREMENTS RELATIVE TO NORMAL STATE ENHANCE THE ABILITY TO DETECT NON-TRANSMURAL MYOCARDIAL INFARCTION**

*Noa Bachner<sup>1</sup>, Offir Ertracht<sup>2, 3</sup>, Nir Zagury<sup>1</sup>, Ofer Binah<sup>2, 3</sup>, Dan Adam<sup>1</sup>*

<sup>1</sup>Fac Biomed Eng, Technion-Israel Inst Technol; <sup>2</sup>Dep Physiology, <sup>3</sup>Ruth and Bruce Rappaport Family Inst Research Med Sci, Technion-Israel Inst Technol, Haifa, Israel

### **5.2 SYSTEMIC ADMINISTRATION OF 5-AZACYTHIDINE IMPROVES CARDIAC REMODELING AND INFARCT VASCULARIZATION AFTER MYOCARDIAL INFARCTION IN RAT**

*Maram Azab<sup>1</sup>, Natali Landa-Rouben<sup>1</sup>, Radka Holbova<sup>1</sup>, Arnon Nagler<sup>2</sup>, Jonathan Leor<sup>1</sup>.*

<sup>1</sup>Neufeld Cardiac Research Institute, Tel-Hashomer, Israel;

<sup>2</sup>Hematology Division, Chaim Sheba Medical Center, Tel-Hashomer, Israel

### 5.3 MECHANISMS OF SUBENDOCARDIAL VULNERABILITY TO ISCHEMIA: A NEW PARADIGM

*<sup>1</sup>Dotan Algranati, <sup>2</sup>Ghassan S. Kassab and <sup>1</sup>Yoram Lanir*

<sup>1</sup>Faculty of Biomed Eng, Technion, IIT, Haifa, Israel, <sup>2</sup>Dept. Biomed Eng, Indiana Purdue Univ, Indianapolis, USA

### 5.4 DUAL “MOTION-FROZEN HEART” COMBINING RESPIRATION AND CONTRACTION COMPENSATION IN CLINICAL MYOCARDIAL PERFUSION SPECT IMAGING

*<sup>1</sup>Gil Kovalski<sup>1,4</sup>, <sup>2</sup>Zohar Keidar<sup>2,3</sup>, <sup>3</sup>Ora Israel<sup>2,3</sup>, <sup>4</sup>Alex Frenkel<sup>2,3</sup>, <sup>5</sup>Jonathan Sachs<sup>2,4</sup>, <sup>6</sup>Haim Azhari<sup>1</sup>*

<sup>1</sup>Fac Biomed Eng, Technion, Israel Inst. Technol, Haifa, Israel, <sup>2</sup>Dep Nuclear Med Rambam Health Care Campus, <sup>3</sup> B. Rappaport School of Medicine, Technion, Israel Institute of Technology, Haifa, Israel, <sup>4</sup>GE HealthCare, Haifa, Israel

## 6. Systemic Effects (Blue Hall)

### Joint Session with the “Israel Heart Society”

#### Chairmen: Ronen Beeri and Michael Arad

#### 6.1 PNEUMOPERITONEUM AGGRAVATES RENAL FUNCTION IN DECOMPENSATED, BUT NOT COMPENSATED EXPERIMENTAL CONGESTIVE HEART FAILURE

*<sup>1</sup>Bishara Bishara<sup>1</sup>, <sup>2</sup>Niroz Abu-Salah<sup>2</sup>, <sup>3</sup>Rawi Ramadan<sup>3</sup>, <sup>4</sup>Ilia Goltsman<sup>2</sup>, <sup>5</sup>Hoda Awad<sup>2</sup>, <sup>6</sup>Tony Karram<sup>4</sup>, <sup>7</sup>Joseph Winaver<sup>2</sup>, <sup>8</sup>Aaron Hoffman<sup>4</sup>, and <sup>9</sup>Zaid Abassi<sup>2,5</sup>*

<sup>1</sup>Dep General Surgery "A", <sup>2</sup>Dep Nephrology, <sup>3</sup>Dep Vascular Surgery and, <sup>4</sup>Research Unit, Rambam- Human Health Care Campus, and <sup>5</sup>Dep Physiology and Biophysics, Ruth & Bruce Rappaport Fac Med Technion, IIT, Haifa, Israel

#### 6.2 PHYSIOLOGICAL ROLES OF ENDOGENOUS OUABAIN-LIKE COMPOUND: EVIDENCE FROM PASSIVE AND ACTIVE IMMUNIZATION STUDIES

*<sup>1</sup>Maoz Neshet<sup>1</sup>, <sup>2</sup>Haim Rosen<sup>2</sup> and <sup>3</sup>David Lichtstein<sup>1</sup>*

Dep Med Neurobiol<sup>1</sup> & Dep Microbiol & Molecular Genetics<sup>2</sup>, Inst Med Research-Israel-Canada, The Hebrew University-Hadassah Med School, Jerusalem, Israel

#### 6.3 ANGIOTENSIN II IMPEDES THE ABILITY OF THE LUNGS TO CLEAR EDEMA

*<sup>1</sup>Reem Badarneh<sup>1</sup>, <sup>2</sup>Julia Guetta<sup>2</sup>, <sup>3</sup>Nabeeh Yosef<sup>3</sup>, <sup>4</sup>Badira Makhoul<sup>1,2</sup>, <sup>5</sup>Geula Klorin<sup>2</sup>, <sup>6</sup>Iman Hayek<sup>1</sup>, <sup>7</sup>Gidon Berger<sup>1,3</sup> & <sup>8</sup>Z.S. Azzam<sup>1,2,4</sup>*

<sup>1</sup>Lab Pulmonary Biol Res, Ruth & Bruce Rappaport Fac Med, Technion, Israel Inst Technol, Internal Med, <sup>2</sup>"B" and <sup>3</sup>"C", Rambam: Human Health Care Campus, Haifa, Israel, <sup>4</sup>The Rappaport Family Inst Res Med Sci, Technion, Israel Inst of Technol, Haifa, Israel

#### 6.4 PHOSPHATE IS A MAJOR MEDIATOR OF AORTIC VALVE CALCIFICATION

*<sup>1</sup>Suzan Abedat; <sup>2</sup>Mony Shuvy; <sup>3</sup>Ronen Beeri; <sup>4</sup>Chaim Lotan*

Cardiovascular Research Center, Hadassah Hebrew University Medical Center, Jerusalem, Israel

#### 6.5 PHOSPHATE TRANSPORTER INHIBITOR REDUCES RENAL FAILURE ASSOCIATED AORTIC VALVE CALCIFICATION

*<sup>1</sup>Mony Shuvy, <sup>2</sup>Suzan Abedat, <sup>3</sup>Ronen Beeri, <sup>4</sup>Chaim Lotan.*

Hadassah Hebrew University Medical Center, Jerusalem, Israel