SYMPOSIUM PROPOSAL: ASPET Division for Cardiovascular Pharmacology

(1) Proposed Symposium Title: Innate immunity and cardiovascular disease: unfolding the therapeutic potential of toll-like receptors

(2) Submitted by: R. Clinton Webb; Styliani Goulopoulou

Are you an ASPET member? ☐ Yes ☐ No
If you are not currently an ASPET member, you must either join or have this session co-submitted by an ASPET Member. Membership application can be found at http://www.aspet.org/membership/apply/

(3) Co-sponsored by what other Divisions:
Integrative Systems, Translational and Clinical Pharmacology Section

(4) Program Justification:
The discovery of toll-like receptor (TLR) function, which is central to the immune system, was awarded the 2011 Nobel Prize in Physiology or Medicine. TLRs are pattern recognition receptors (PRRs) that activate the innate immune response. In addition to exogenous infectious ligands (pathogen-associated molecular patterns, PAMPs), TLRs sense certain endogenous molecules (damage-associated molecular patterns, DAMPs) that are released during host tissue injury/death. Activation of TLRs by exogenous or endogenous ligands leads to the activation of NF-κB (nuclear factor κB) and the production of pro-inflammatory cytokines that may have both beneficial (i.e., repair) and detrimental (i.e., inflammation) effects on the host. TLRs are expressed in immune cells but also in cardiac and vascular tissues, suggesting that TLRs may be a link between innate immunity, inflammation, and cardiovascular disease. Indeed, recent studies provide evidence for the involvement of TLRs in stroke, hypertension, preeclampsia, myocardial infarction, heart failure, atherosclerosis, and myocarditis. The science of the proposed symposium will deal with newly discovered TLR-associated molecular pathways that are involved in the genesis of endothelial dysfunction and cardiovascular remodelling characterizing various cardiovascular pathologies. Further, the interaction between TLRs and other innate immune receptors (i.e., NOD-like receptors) in cardiovascular diseases will be considered and the therapeutic potential of TLR manipulation will be discussed.

(5) Format: Please note that in order to receive travel reimbursement, speakers must speak for a minimum of 20 minutes. If a speaker is also moderating a panel, or serving as a discussion group facilitator, the time for this activity may be included.
There will be four 20-minute presentations followed by a 5-minute discussion and three short-talks (10 minutes followed by a 5-minute discussion) chosen from abstracts.

Junior Speakers: ☐ Yes ☐ No
From Submitted Abstracts: ☐ Yes ☐ No
If not from Submitted Abstracts, how will junior speakers be selected?
(8) Proposed Speakers:  (Include Name, Department, Institution, Address, Phone, Fax, & email)

Speaker 1 Name:  Bruce Beutler, M.D.

Contact Information:
bruce@scripps.edu
The Scripps Research Institute
The Department of Genetics
10550 North Torrey Pines Road
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La Jolla, CA 92037
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Title 1:
TLR signaling: innate immune sensing and response

Description of Talk 1:
The first talk will serve as an introduction to TLR-signaling pathways associated with microbe sensing. Novel proteins that participate in this signaling will be identified and subtleties in the nature of signaling from several TLRs will be discussed. Dr. Beutler was awarded the 2011 Nobel Prize in Medicine for his work in the activation of the innate immune response.

Length of Talk 1:  Must be at least 20 min to qualify for travel reimbursement

20-minute talk followed by a 5-minute discussion

Speaker 2 Name:  Polly Matzinger, Ph.D

Contact Information:
Laboratory of Cellular and Molecular Immunology, T-Cell Tolerance and Memory Section, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland 20892, USA.
Phone: 301-496-6640
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Title 2:
"Shall I respond?": DANGERous questions and answers
Description of Talk 2:

In 1994, Dr. Matzinger proposed the danger model of immunity as an alternative to classical immunology’s model of self/non-self discrimination. The cornerstone of this model is that the immune system is not concerned with foreignness but instead, it responds to danger elicited by tissue stress or damage. This talk will unfold new knowledge on how the danger model explains the interactions between innate and adaptive immunity. The role of TLRs signaling in immune responses to “danger” will be underlined.

Length of Talk 2: Must be at least 20 min to qualify for travel reimbursement

20-minute talk followed by a 5-minute discussion

Speaker Name: Brett Mitchell, Ph.D.
Contact Information:
Texas A&M Health Science Center
Department of Internal Medicine
702 SW HK Dodgen Loop
Temple, Texas 76504
Phone: 254-724-6267
Fax: 254-742-7181
Email: bmitchell@medicine.tamhsc.edu

Title 3:
Doubled-stranded RNA receptors in pregnancy-induced hypertension

Description of Talk 3:
Invading pathogens and dead or necrotic tissue activate the maternal immune response during pregnancy. This talk will discuss the role of double-stranded RNA in the activation of innate immune receptors and the development of preeclampsia and pregnancy-induced hypertensive disorders.

Length of Talk 3: Must be at least 20 min to qualify for travel reimbursement

20-minute talk followed by a 5-minute discussion
Speaker 4 Name: Claudia Monaco
Contact Information:
Kennedy Institute of Rheumatology
Imperial College
65 Aspenlea Road
London W6 8LH, UK
c.monaco@imperial.ac.uk.

Title 4:
TLRs: new therapeutic targets for treating atherosclerosis

Description of Talk 4:
TLRs are versatile molecular patterns that initiate innate immune signaling in atherosclerosis. This talk will discuss the versatile nature of TLRs achieved by TLR heterodimer formation and cooperation with co-receptors and binding proteins. Further, the involvement of TLRs signaling in the development of atherosclerosis and the potential of TLR antagonism in the treatment of atherosclerosis will be addressed.

Length of Talk 4: Must be at least 20 min to qualify for travel reimbursement
20-minute talk followed by a 5-minute discussion

Speaker 5 (Optional) Name: 
Contact Information:

Title 5:

Description of Talk 5:

Length of Talk 5: Must be at least 20 min to qualify for travel reimbursement
(7) Alternate Speakers

Alternate for Speaker 1  
Gregory Burton, Ph.D.

Contact Information:
University of California, Berkeley  
Dept. of Molecular and Cell Biology  
142 LSA #3200  
Berkeley, CA 94720-3200, Email: Barton@berkeley.edu, Office Phone: 510 642 2063

Alternate for Speaker 2  
Elizabeth Bonney, M.D.

Contact Information:
Department of Obstetrics, Gynecology, and Reproductive Sciences, University of Vermont College of Medicine, 89 Beaumont Avenue  
Given Building Room C-246, Burlington, VT 05405, USA. Email: ebonney@uvm.edu

Alternate for Speaker 3  
Vikki Abrahams, Ph.D.

Contact Information:
Yale University School of Medicine, Department of Obstetrics, Gynecology & Reproductive Sciences, 333 Cedar Street, LSOG 305C,  
New Haven, CT 06510, USA. vikki.abrahams@yale.edu. Office: (203)785-2175

Alternate for Speaker 4  
Adam Mullick, Ph.D.

Contact Information:
Isis Pharmaceuticals, Inc., Carlsbad, CA, USA.  
amullick@isisph.com

Alternate for Speaker 5

(8) Preliminary Financial Requirements: Symposia are allocated a maximum of $4800 plus registration

$4,800 plus registration

(8) Organizer/Chair Contact Information: (Include Names, Departments, Institutions, Addresses, Phones, Faxes, Emails)

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