

PVRI Schistosomiasis Report 2017

Rahul Kumar & Brian Graham



Number of Members

Total members: 10

Looking back at the past year

Members of the Schistosomiasis Task Force had multiple activities and publications relevant to the mission of the Task Force, including (but not limited to):

New collaborations

A new collaboration was formed with Ghazwan Butrous and Alistair Mathie (University of Kent, UK), Brian Graham (University of Colorado, USA) and Ángel Luis Cogolludo Torralba (Universidad Complutense, Spain) to study the effect of dual infection with HIV and schistosomiasis, which is a common problem in Africa. The plan is to use a humanised HIV mouse sensitised and then challenged with *S mansoni* eggs followed by haemodynamic and immune assessments. As part of this new collaboration, Post-doctoral Fellow Daniel Morales, from Prof. Cogolludo's lab, visited Colorado to learn about the schistosomiasis model.

Dr Amol Kulkarni, Department of Pharmaceutical Sciences at Howard University, Washington DC, USA, has started a new collaboration with Rahul Kumar (University of Colorado, USA) to test three new compounds which target TGF- β activation in the *S mansoni* PH mouse model.

Work presented at conferences/symposium

- 1 Poster presentation: TGF- β Activation by Bone Marrow-Derived Thrombospondin-1 Causes Inflammatory Pulmonary Vascular Disease due to Schistosoma- and Hypoxia. Rahul Kumar, Claudia Mickael, Biruk Kassa, Liya Gebreab, Jeffrey C. Robinson, Daniel E. Koyanagi, Linda Sanders, Lea Barthel, Christina Meadows, Daniel Fox, David Irwin, Min Li, B. Alexandre Mckeeon, Suzette Riddle, Dale Brown, Leslie E. Morgan, Christopher Evans, James P. Maloney, Todd Bull, William J. Janssen, Kurt Stenmark, Rubin Tudor, and Brian B. Graham. Keystone conference on TGF- β in Immunity, Inflammation and Cancer, January 9–13, 2017 at Taos, New Mexico, USA.
- 2 Poster Presentation: Protective Role of Vascular Smooth Muscle Cell Interleukin-6 in Schistosoma and Hypoxia PH. Rahul Kumar, Claudia S. Mickael, Koyanagi D, Linda Sanders, Rubin Tudor, Brian B. Graham. American Thoracic Society (ATS) International Conference, May 19-24, 2017, Washington, DC USA.
- 3 Poster Presentation: Characterization of Macrophage Populations in Schistosoma and Hypoxia Induced Pulmonary

Hypertension. Claudia S. Mickael, Rahul Kumar, Linda Sanders, William J. Janssen, Rubin Tudor, Brian B. Graham. American Thoracic Society (ATS) International Conference, May 19-24, 2017, Washington, DC USA.

Publications

- 1 Kumar R, Mickael C, Kassa B, Gebreab L, Robinson JC, Koyanagi DE, Sander L, Barthel L, Meadows C, Fox D, Irwin D, Li M, Mckeeon B, Evans C, Bandeira A, Maloney JP, Bull TM, Janssen WJ, Stenmark K, Tudor RM, Graham BB. TGF- β Activation by Bone Marrow-Derived Thrombospondin-1 Causes Schistosoma- and Hypoxia-Induced Pulmonary Hypertension. *Nature Communications* 2017 May 30;8:15494 [PMID:28555642].
- 2 Ali Z, Kosanovic D, Kolosionek E, Schermuly RT, Graham BB, Mathie A, Butrous G. Enhanced inflammatory cell profiles in schistosomiasis-induced pulmonary vascular remodeling. *Pulmonary Circulation* 2017 Apr 4;7(1):244-252 [PMID:28680583].
- 3 Gonçalves-Macedo L, Lopes EP, Domingues ALC, Markman B Filho, Mota VG, Luna CF. Schistosomiasis and hepatopulmonary syndrome: the role of concomitant liver cirrhosis. *Memórias do Instituto Oswaldo Cruz*. 2017 Jul;112(7):469-473 [PMID:28591307]
- 4 Gonçalves-Macedo L, Domingues AL, Lopes EP, Luna CF, Mota VG, Becker MM, Markman-Filho B. Pulmonary shunts in severe hepatosplenic schistosomiasis: Diagnosis by contrast echocardiography and their relationship with abdominal ultrasound findings. *PLoS Neglected Tropical Diseases*. 2017 Apr 3;11(4):e0005417 [PMID:28369056]
- 5 Silva PCV, Gomes AV, de Britto LRPB, de Lima ELS, da Silva JL, Montenegro SML, Muniz MTC, Domingues ALC. Influence of a TNF- α Polymorphism on the Severity of Schistosomiasis Periportal Fibrosis in the Northeast of Brazil. *Genetic Testing Molecular Biomarkers*. 2017 Oct 31 [PMID:29087736]
- 6 Gouveia LR, Santos JC, Silva RD, Batista AD, Domingues ALC, Lopes EPA, Silva RO. Diagnosis of coinfection by schistosomiasis and viral hepatitis B or C using 1H NMR-based metabolomics. *PLoS One*. 2017 Aug 1;12(8):e0182196 [PMID:28763497]

