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Education:

- BSc, 1982, University of Newcastle Upon Tyne, UK.
- Ph.D., 1989, University of Cambridge, UK.
- Post Doc. 1989-1993 Johns Hopkins School of Medicine, Baltimore
- Post Doc 1993-1995 The de Duve Institute of International Cellular Pathology, Belgium.

Research Interest:

- Trypanosome lytic factors, antimicrobial high density lipoproteins and their role in innate immunity

Our laboratory works on trypanosome lytic factors (TLFs), which are antimicrobial high-density lipoproteins that contribute to primate innate immunity. TLFs are characterized by their ability to kill African trypanosomes, which are extracellular protozoan parasites. The unique protein components of TLF are hemoglobin binding protein, Haptoglobin-related protein (Hpr) and a pore forming protein, apolipoprotein L-I (apoL-I).

Selected Publications:

- BH3 domain-independent apolipoprotein L1 toxicity rescued by BCL2 prosurvival proteins. Heneghan JF, Vidorpe DH, Shmukler BE, Giovinazzo JA*, Raper J, Friedman DJ, Pollak MR, Alper SL. *Am J Physiol Cell Physiol*. 2015 Sep 1;309(5):C332-47. doi: 10.1152/ajpcell.00142.2015. PMID: 26108665
- Transient expression of proteins by hydrodynamic gene delivery in mice. Kovacsics D, Raper J. *J Vis Exp*. 2014 May 5;(87).PMID: 24837006
- Evolution of the primate trypanolytic factor APOL1. Thomson R, Genovese G, Canon C#, Kovacsics D, Higgins MK, Carrington M, Winkler CA, Kopp J, Rotimi C, Adeyemo A, Doumatey A, Ayodo G, Alper SL, Pollak MR, Friedman DJ, Raper J. *Proc Natl Acad Sci U S A*. 2014 May 20;111(20) PMID: 24808134
- Parasitology: Molecular one-upmanship. Raper J, Friedman DJ. *Nature*. 2013 Sep 19;501(7467):322-3. doi: 10.1038/501322a. PMID: 24048062
- Structure of the trypanosome haptoglobin-hemoglobin receptor and implications for nutrient uptake and innate immunity. Higgins MK, Tkachenko O, Brown A, Reed J, Raper J, Carrington M. *Proc Natl Acad Sci U S A*. 2013 Jan 29;110(5):1905-10.
- Frevert U, Movila A, Nikolskaia OV, Raper J, Mackey ZB, et al. (2012) Early Invasion of Brain Parenchyma by African Trypanosomes. *PLoS ONE* 7(8):e43913.
- Capewell, P*, Veitch NJ, Turner CMR, Raper, J, Berriman, M, Hadjuk, S, Macleod, A. (2011) Differences between *Trypanosoma brucei gambiense* groups 1 and 2 in their resistance to killing by trypanolytic factor 1. *PLoS Neglected Tropical Diseases* Sep; 5(9):e1287
- Lukeš J, Raper J., (2010) Prophylactic antiparasitic transgenesis for human parasitic disease? *Mol Ther*. 18(10):1745-1747.
- Thomson, R., Molina-Portela, M.P., Mott, H., Carrington, M., and Raper, J. (2009) Hydrodynamic gene delivery of baboon trypanosome lytic factor eliminates animal and human infective African trypanosomes. *Proc. Nat. Acad. Sci.* 106:19509-195147
- Thomson, R., Samanovic, M. and Raper, J. (2009) Activity of Trypanosome Lytic Factor: a novel component of innate immunity. *Future Microbiology* 4(7): 789-796
- Bettiol, E., Samanovic, M., Murkin, A. S., Raper, J., Buckner, F. and Rodriguez, A. (2009) Identification of three classes of heteroaromatic compounds with activity against intracellular *Trypanosoma cruzi* by chemical library screening. *PLoS Neglected Tropical Diseases* Feb;3(2):e384.
- Samanovic, M., Molina-Portela, M.P., Chessler, A-D.C., Burleigh, B.A., and Raper, J. (2009) Trypanosome Lytic Factor, an Antimicrobial High Density Lipoprotein, Ameliorates

Leishmania Infection. PLoS Pathogens Jan;5(1):e1000276.

- Molina Portela, M.P., Samanovic, M., and Raper, J. (2008) Distinct roles of apolipoprotein components within the trypanosome lytic factor complex revealed in a novel transgenic mouse model. J. Exp. Med. 205: 1721-1728.