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Detection of schistosome circulating antigens CCA and CAA: diagnostic test interpretation and application

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CURRICULUM VITAE

Miriam Casacuberta Partal studied Biology (Bsc) at the University of Girona (Catalonia) and Parasitology (Msc) at the University of Copenhagen (Denmark). During her master's education, she did her internship in the Faculty of Veterinary at Sassari University (Italy) learning about *Leishmania spp*, *Echinococcus granulosus* and *Neospora caninum* diagnosis. During her master thesis, she conducted field work in Tanzania where she evaluated the urine rapid test POC-CCA for Schistosomiasis. After graduation, she worked as research assistant in the Department of Veterinary at the University of Copenhagen and investigated the adhesive properties of the pig parasite *Ascaris suum*. In 2016, she spent 6 months in Saint Kitts and Nevis researching diagnostic techniques in non-human primate parasites. In summer 2017, she joined the Parasitology Department at LUMC as research assistant. In 2018, she started her PhD within the diagnostics team (Dr. Lisette van Lieshout and Dr. Govert van Dam), and in collaboration with the clinical (Prof Meta Roestenberg) and glyco (Prof Cornelis Hokke) teams. After relocating to Sweden, she joined the Quality Assurance team at Fresenius Kabi (Uppsala) where she learnt the steps before releasing clinical nutritional batches to the market. Currently, she works at ITB-MED (Stockholm) giving support to clinical trials in Europe.

LIST OF PUBLICATIONS

In this thesis

Miriam Casacuberta-Partal, Lisette van Lieshout, Angela van Diepen, Jeroen Sijtsma, Arifa Ozir-Fazalalikhani, Jan Pieter R. Koopman, Claudia J. de Dood, Paul L.A.M. Corstjens, Govert J. van Dam, Cornelis H. Hokke, Meta Roestenberg (2022). "Excretion patterns of *Schistosoma mansoni* antigens CCA and CAA by adult male and female worms, using a mouse model and *ex vivo* parasite cultures. *Parasitology*, 149(3):306-313.

Miriam Casacuberta-Partal; Margreet Beenakker; Claudia de Dood; Pytsje Hoekstra; Lisa Kroon; Dieuwke Kornelis; Paul Corstjens; Cornelis H. Hokke; Govert van Dam; Meta Roestenberg; Lisette van Lieshout (2021). "Specificity of the Point-of-Care Urine Strip Test for *Schistosoma* Circulating Cathodic Antigen (POC-CCA) Tested in Non-Endemic Pregnant Women and Young Children". *American Journal of Tropical Medicine and Hygiene*;104(4):1412-7.

Miriam Casacuberta-Partal; Jacqueline J. Janse; Roos van Schuijlenburg; Jutte J.C de Vries; Marianne A.A. Erkens; Kitty Suijk; Mariëlle van Aalst; Jaap J. Maas; Martin P. Grobusch; Perry J.J van Genderen; Claudia de Dood; Paul L.A.M Corstjens; Govert J. van Dam; Lisette van Lieshout; Meta Roestenberg (2020). "Antigen-based diagnosis of *Schistosoma* infection in travellers: a prospective study". *Journal of Travel Medicine*, 27(4):taaa055.

Pytsje T. Hoekstra, **Miriam Casacuberta-Partal**, Lisette van Lieshout, Paul L. A. M. Corstjens, Roula Tsonaka, Rufin K. Assaré, Kigbafori D. Silué, Aboulaye-Meité, Eliézer K. N'Goran, Yves K. N'Gbesso, Abena S. Amoah, Meta Roestenberg, Stefanie Knopp, Jürg Utzinger, Jean T. Coulibaly, Govert J. van Dam (2020). "Efficacy of single versus four repeated doses of praziquantel against *Schistosoma mansoni* infection in school-aged children from Côte d'Ivoire based on Kato-Katz and POC-CCA: An open-label, randomised controlled trial (RePST)". *PLOS Neglected Tropical Diseases* 14(3): e0008189.

Miriam Casacuberta-Partal, Pytsje T. Hoekstra, Dieuwke Kornelis, Lisette van Lieshout, Govert J. van Dam (2019). "An innovative and user-friendly scoring system for standardised quantitative interpretation of the urine-based point-of-care strip test (POC-CCA) for the diagnosis of intestinal schistosomiasis: a proof-of-concept study". *Acta Tropica*, 199:105150.

Other publications

Jan Pieter R. Koopman, Emma L. Houlder, Jacqueline J. Janse, **Miriam Casacuberta-Partal**, Olivia A.C. Lamers, Jeroen C. Sijtsma, Claudia de Dood, Stan T. Hilt, Arifa Ozir-Fazalalikhani, Vincent P. Kuiper, Geert V.T. Roozen, Laura M. de Bes-Roeleveld, Yvonne C.M. Kruize, Linda J. Wammes, Hermelijn H. Smits, Lisette van Lieshout, Govert J. van Dam, Inge M. van Amerongen-Westra, Pauline Meij, Paul L.A.M. Corstjens, Simon P. Jochems, Angela van Diepen, Maria Yazdanbakhsh, Cornelis H. Hokke, Meta Roestenberg (2023). "Safety and infectivity of female cercariae in *Schistosoma*-naïve, healthy participants: a controlled human *Schistosoma mansoni* infection study". *eBioMedicine*, 97:104832.

Emma L. Houlder, Koen A. Stam, Jan Pieter R. Koopman, Marion H. König, Marijke C.C. Langenberg, Marie-Astrid Hoogerwerf, Paula Niewold, Friederike Sonnet, Jacqueline J. Janse, **Miriam Casacuberta-Partal**, Jeroen C. Sijtsma, Laura H. M. de Bes-Roeleveld, Yvonne C.M. Kruize, Maria Yazdanbakhsh, Meta Roestenberg (2023). "Changes in pro-inflammatory and regulatory immune responses during controlled human *schistosome* infection and the development of clinical symptoms". Submitted.

Oscar Asanya Nyangiri, Julius Mulindwa, Joyce Namulondo, Anna Kitibwa, Jacent Nassuuna, Magambo Phillip Kimuda, Alex Boobo, Barbara Nerima, Moses Adriko, Nathan J Dunton, Gaganjit Kaur Madhan, Mark Kristiansen, **Miriam Casacuberta-Partal**, Harry Noyes, Alison Elliott and Enock Matovu (2023) *, on behalf of the TrypanoGEN+ Research group of the H3Africa consortium. "Variants of IL6, IL10, FCN2, RNASE3, IL12B and IL17B loci are associated with *Schistosoma mansoni* worm burden in the Albert Nile region of Uganda". *PLOS Neglected Tropical Diseases*, 17(11):e0011796.

Pytsje T Hoekstra; **Miriam Casacuberta-Partal**; Lisette van Lieshout; Paul LAM Corstjens; Roula Tsonaka; Rufin K Assaré; Kigbafori D Silué; Eliézer K N'Goran; Yves K N'Gbesso; Eric AT Brienen; Meta Roestenberg; Stefanie Knopp; Juerg Utzinger; Jean T Coulibaly; Govert J van Dam (2022). "Limited efficacy of repeated praziquantel treatment in *Schistosoma mansoni* infections as revealed by highly accurate diagnostics, PCR and UCP-LF CAA (RePST trial)". *PLOS Neglected Tropical Diseases*, 16(12):e0011008.

Estelle Mezajou Mewamba, Arnol Auvaker Zebaze Tiofack, Cyrille Nguemnang Kamdem, Esthelline Yangea Tchounkeu, Rostand Joël Atiokeng Tatang, Loic Edmond Tekeu Mengoue, Mureille Carole Tchami Mbagnia, Flobert Njiokou, **Miriam Casacuberta-Partal**, Hilaire Marcaire Womeni, Gustave Simo (2022). "Fine mapping of *Schistosoma mansoni* infections and infection intensities in sub-districts of Makenene in the Centre region of Cameroon" *PLOS Neglected Tropical Diseases*, 16(10):e0010852.

Nyangiri OA, Edwige SA, Koffi M, Mewamba E, Simo G, Namulondo J, Mulindwa J, Nassuuna J, Elliott A, Karume K, Mumba D, Corstjens PLAM, **Casacuberta-Partal M**, van Dam GJ, Bucheton B, Noyes H, Matovu E; TrypanoGEN+ Research Group of the H3Africa Consortium (2021). "Candidate gene family-based and case-control studies of susceptibility to high *Schistosoma mansoni* worm burden in African children: a protocol". AAS Open Res, 4:36.

Amoah AS, Hoekstra PT, **Casacuberta-Partal M**, Coffeng LE, Corstjens PLAM, Greco B, van Lieshout L, Lim MD, Markwalter CF, Odiere MR, Reinhard-Rupp J, Roestenberg M, Stothard R, Tchuem Tchuente LA, de Vlas SJ, van Dam GJ (2020). "Sensitive diagnostic tools and targeted drug administration strategies are needed to eliminate schistosomiasis". Lancet Infectious Diseases, 20(7):e165-e172.

Haggag AA, **Casacuberta Partal M**, Rabiee A, Abd Elaziz KM, Campbell CH, Colley DG, Ramzy RMR (2019). "Multiple Praziquantel Treatments of *Schistosoma mansoni* Egg-Negative, CCA-Positive Schoolchildren in a Very Low Endemic Setting in Egypt Do Not Consistently Alter CCA Results". American Journal of Tropical Medicine and Hygiene, 100(6):1507-1511.

Hoekstra PT, **Casacuberta Partal M**, Amoah AS, van Lieshout L, Corstjens PLAM, Tsonaka S, Assaré RK, Silué KD, Meité A, N'Goran EK, N'Gbesso YK, Roestenberg M, Knopp S, Utzinger J, Coulibaly JT, van Dam GJ (2018). "Repeated doses of Praziquantel in Schistosomiasis Treatment (RePST) - single versus multiple praziquantel treatments in school-aged children in Côte d'Ivoire: a study protocol for an open-label, randomised controlled trial". BMC Infectious Diseases, 18(1):662.

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