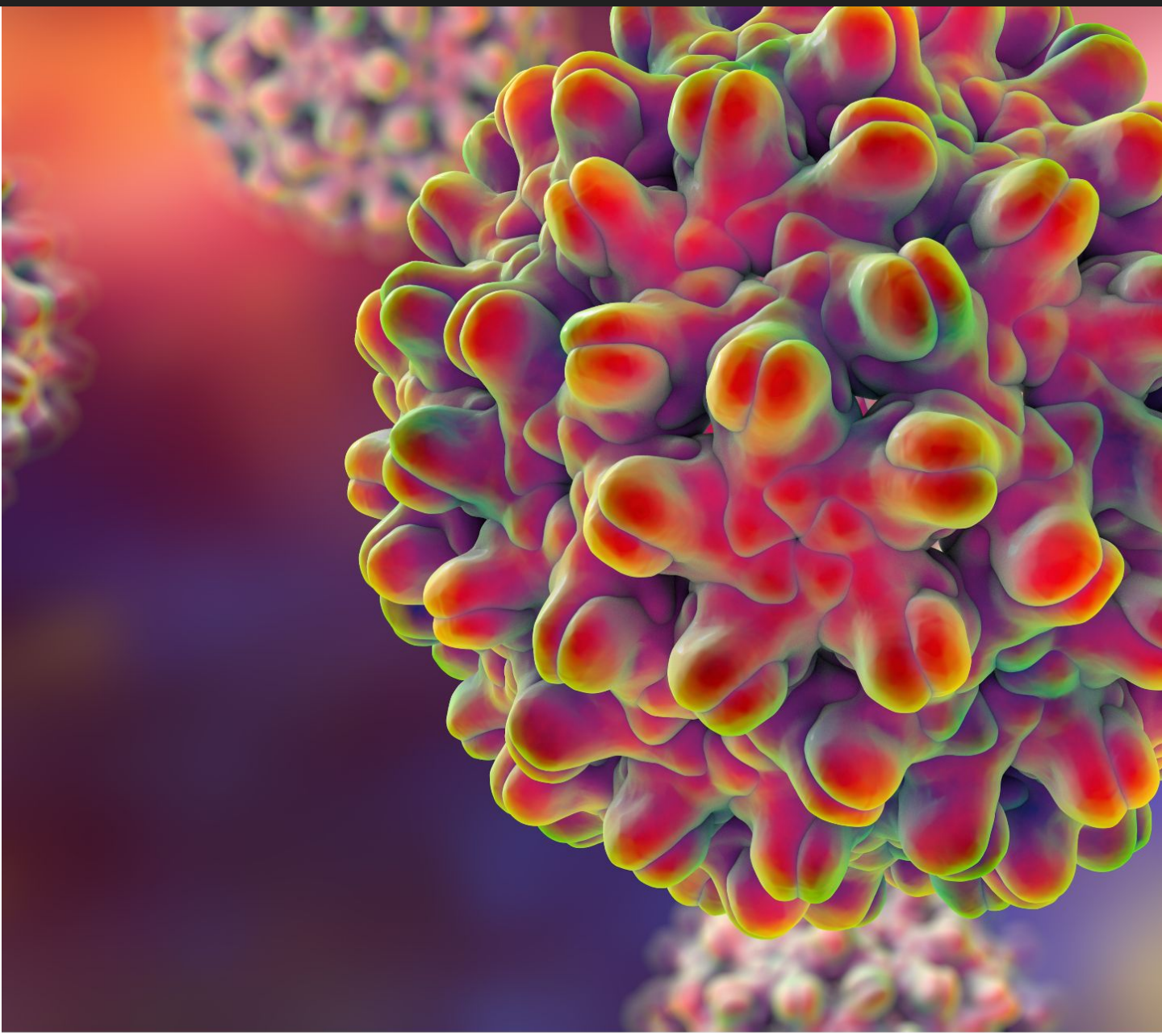
VOLUME VI / EDITION 5 July 2024

NEWSLETTER

SOUTH AFRICAN IMMUNOLOGY SOCIETY



FEATURES

The Hotzone

Hepatitis D Virus Infection

SAIS Member Spotlight

Veterinary Immunology Community Spotlight

AWARENESS

World Zoonoses Day - 6 July

Nelson Mandela International Day - 18 July

World Hepatitis Day - 28 July

SAVE THE DATE

IUIS-FAIS-SAIS IMMUNO-SOUTH AFRICA

SAIS African-Based Immunology Seminar Series
1 August & 28 August

MESSAGE FROM THE EDITOR

Dear SAIS Members,

Welcome to the fifth edition of our SAIS newsletter!

We've made some exciting updates to the newsletter this month! In this issue you'll find:

- The Hotzone - a new feature that touches on current topics in pandemic preparedness and public health
- Community Corner - an expanded long-time reader favourite that captures new and novel research by one of our own SAIS members
- SAIS Member Spotlight - a new feature where a SAIS member shares their story about finding their place in science and discovering a passion for immunology

We extend a warm welcome to our new contributors who are working hard to put these features together for you! If you would like to contribute, or be featured in our Community Corner or SAIS Member Spotlight, please reach out to us.

Of course, we will still continue searching for the most useful resources for you. Please take a look at our carefully catalogued conferences, webinars, funding opportunities, job opportunities, resources, and socials.

Our next SAIS African-Based Immunology seminar will be on the 1st of August. Please keep an eye on your mailbox and our social media pages so that you don't miss your invite!

As always, we hope that you've learned something new and that our resources are helpful!

We hope you like the new look! We always welcome and appreciate your feedback! Please feel free to contact us at newsletter@saimmunology.org.za.

Happy reading!

With warm regards,
Thanusha Pillay

CONTACT US!

Feel free to send us your recent publications so that we can showcase them in our Community Corner. If you are hiring/recruiting, let us use our various platforms, the newsletter and our social media, to advertise for you. If you have any webinars, seminars, or conferences, we would be more than happy to add it to the newsletter. You can simply email the editorial team at **newsletter@saimmunology.org.za** by the 20th of each month to be featured in our next newsletter.

saimmunology.org.za

admin@saimmunology.org.za
newsletter@saimmunology.org.za

South African Immunology Society (SAIS)

@SAImmunologySociety

@SAImmunology

IUIS-FAIS-SAIS IMMUNO-SOUTH AFRICA

Pretoria, South Africa | 30 September - 4 October 2024

ONE HEALTH - ZOONOSIS AND COMPARATIVE IMMUNOLOGY

SAIS WEBINARS

For the upcoming African-based Immunology Seminar series, we have two speakers for the month of August, Dr Zaza Ndhlovu followed by Dr David Lawrence. The topic for Dr Ndhlovi's seminar is yet to be confirmed while the topic for Dr Lawrence's seminar will be on interdisciplinary research to reduce mortality from HIV-associated fungal infection.

Zaza Ndhlovu, PhD

Title: TBC

An African-Based Immunology Seminar Series

1 August 2024
13:00-14:00

David Lawrence, PhD

Title: Interdisciplinary research to reduce mortality from HIV-associated fungal infections

An African-Based Immunology Seminar Series

28 August 2024
13:00-14:00

RFA-AI-24-029 Applications Open

Mechanisms of Inducing HIV Immunity in Early Life

Closing Date: 09 October 2024

For more information, please visit:
https://grants.nih.gov/grants/guide/rfa-files/RFA-AI-24-029.html

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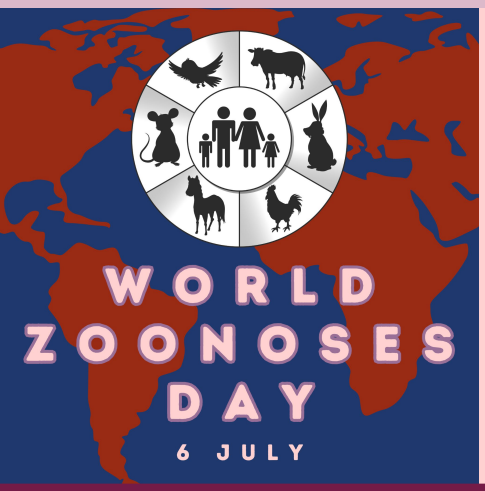
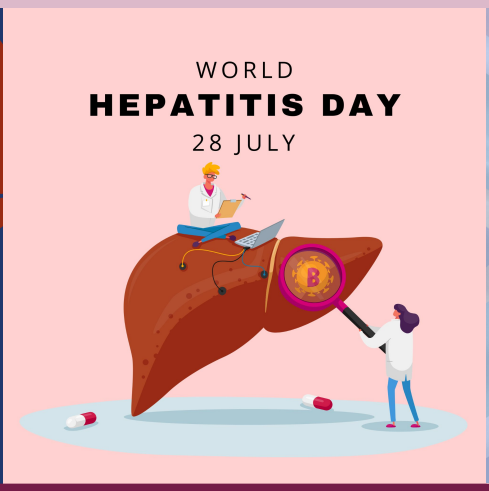
Benefiting people and society

GLOBAL SCIENCE SUMMIT PROGRAMME 2024

Call opens	Call closes	Announcement of results
6 May 2024	8 August 2024 2:00pm (CEST)	December 2024

For more information, please visit:
https://novonordiskfonden.dk/en/grant/global-science-summit-programme-2024/





RED ALERT!

HEPATITIS E WARNING IN CHAD

On 5 March 2024, WHO was alerted by Chad's IHR national focal point about a hepatitis E outbreak in eastern Ouaddai province, heavily impacted by Sudanese conflict refugees since April 2023. From 2 January to 28 April 2024, 2092 suspected cases, including seven deaths (CFR 0.3%), were reported in Adré and Hadjer-Hadid districts. Of these cases, 95% were from refugee camps. The diagnosis was confirmed using RDT and PCR tests. Most cases (53.2%) were aged 6-17 years. In response, Chad activated its Public Health Emergency Operations Centre, supported by a WHO team in Adré.

Prevention is the most effective approach against hepatitis E. Provision of safe drinking water, good hygiene practices, quality standards for public water supplies and provision of safely managed sanitation services can significantly decrease the spread risk. WHO assesses the risk to be high at the national level, moderate at the regional level and low at the global level.

World Health Organization

H5N1: THE NEW UDDERLY CONCERNING INFLUENZA OUTBREAK ON EVERYONE'S BEAKS

S. Richardson

The goose/Guangdong-lineage of H5N1 avian influenza viruses first emerged in 1996 but a variant has led to a widespread pandemic in poultry and wild birds since 2020, resulting in 81 countries across 5 continents reporting high pathogenicity outbreaks. Since then, 10 countries across 3 continents have reported outbreaks in mammals which include farmed mink in Spain, seals in the United States of America, and sea lions in Peru and Chile. H5N1 viruses have also been detected in domestic animals such as cats and dogs in several countries.

With a total of 4 reported human cases in the USA since 2022 one might wonder why such concern has been expressed in the media and by virologists worldwide about the current H5N1 outbreak. This is largely because H5N1 is typically present in birds, but alarmingly the highly pathogenic version (HPAI) has been found in at least 101 herds of cattle in the USA since March 2024. In cows, large amounts of virus were found in milk with very little in the respiratory tract, with a recent study showing the high expression of the α2,3 avian receptor in bovine mammary glands to be the culprit. So, with little to no respiratory symptoms and no neurological distress, cows experienced mastitis from influenza. This was a completely wild twist for 2024 that no one was expecting.

These increasingly detected cases among mammals, biologically closer to humans than birds, raises concern that the virus might adapt to infect humans more easily. In addition, some mammals may act as mixing vectors for influenza viruses, leading to the emergence of new viruses that could be pandemic in nature.

Pigs, which express both the avian and human receptors in their respiratory tracts, have historically been a major reservoir for human and avian tropic influenza viruses to mingle and create new pandemic strains. But, since March 2024 we now have a new flashpoint, because those cows don't only have the avian receptor in their udders – the human one is also there, providing another perfect opportunity for spillover.

Another worry is the case fatality rate of historical H5N1 infections in humans. From 2003 to 1 April 2024, a total of 889 cases and 463 deaths (CFR 52%) caused by influenza A (H5N1) virus have been reported worldwide from 23 countries.

Despite all the doom, gloom, and the huge impact on the agriculture industry, as far as human to human transmission is concerned, we are still in the clear. To date, there has been no confirmed human-to-human transmission of the H5N1 virus. What we look to now is the viral surveillance of cows, with hope that their udders remain exclusively for milk and not to fuel the next pandemic!

HEPATITIS D VIRUS INFECTION

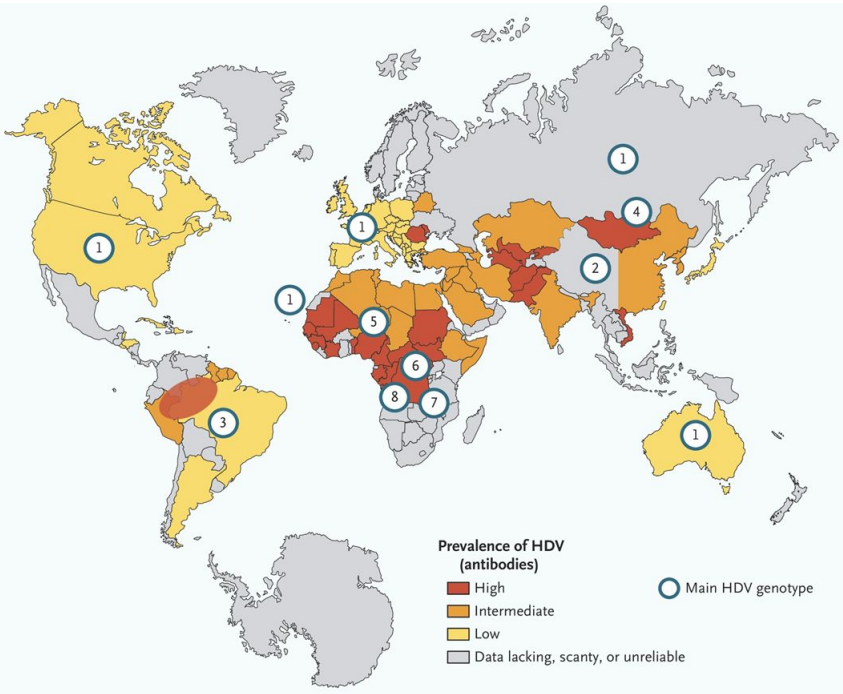
T. Asselah & M. Rizzetto
Adapted by S. Balla

Hepatitis D virus (HDV) is a defective virus that requires the hepatitis B surface antigen (HBsAg) provided by hepatitis B virus (HBV) to complete its life cycle. HDV has a circular, single-stranded RNA genome of approximately 1700 nucleotides, which is too small to code for replicative enzymes or envelope proteins. It codes only for a small, non-enzymatic protein, hepatitis delta antigen (HDAg). It is the smallest known viral pathogen infecting humans. HDV is transmitted through infectious body fluids, with intravenous drug users being at highest risk due to contaminated syringes. However, HDV cannot be transmitted independently and requires the presence of HBV. Chronic hepatitis D is considered the most severe and progressive form of viral hepatitis in humans, with a unique biological character and ominous medical effect. It is more severe and progressive than hepatitis B alone. The global prevalence of HDV infection remains undetermined in many parts of the world, with estimates ranging from 12 million to 72 million infected persons worldwide, underscoring the heterogeneity of current epidemiologic data.

This contrasts the more well-characterized epidemiology of other viral hepatitis infections.

Eight distinct genotypes of HDV have been identified, with varying geographic distributions and clinical characteristics. This genetic diversity is not seen to the same degree in other hepatitis viruses. There is no approved therapy for chronic hepatitis D, and new therapeutic strategies are being developed to target the virus's dependence on HBsAg. This differs from the available treatments for other forms of viral hepatitis.

Prevalence of Antibodies to HDV in the World in the Past 10 Years.



In summary, HDV infection is a unique form of viral hepatitis that is dependent on HBV, has a more severe clinical course, and presents significant challenges in terms of epidemiology and treatment compared to other hepatitis viruses.

The NEW ENGLAND JOURNAL of MEDICINE

UNLOCKING THE SECRETS OF HUMAN TB B CELLS: DISTINCT ROLES AND CHARACTERISTICS ACROSS THE BODY

R Krause, Pl Ogongo , L Tezera, M Ahmed, I Mbano, M Chambers, A Ngoepe, M Magnoumba, D Muema, F Karim, **K Khan**, K Lumamba, K Nargan, R Madansein, A Steyn, AK Shalek,, P Elkington, A Leslie

Reviewed by N. Manana

Evidence from human studies and animal models suggests that B cells play a significant role in the host response to Mycobacterium tuberculosis (Mtb), the causative agent of tuberculosis (TB). In TB patients, circulating B cell levels decrease but recover following successful treatment. In mice and non-human primates, B cell depletion or knockout results in increased susceptibility to TB, while adoptive transfer of B cells can mitigate lung pathology. B cells are believed to play a protective role in the CD4+ T cell response within granuloma-associated lymphoid tissue (GrALT) in the lungs. Several studies have demonstrated the role of Mtb-specific antibodies in providing protective immunity against TB in both humans and non-human primates. However, **the precise role of B cells in the human lung during TB infection remains poorly understood.** This study emphasises the need to characterise the B cell response in the lungs of TB patients, as most research has focused on the peripheral blood compartment. Understanding the diversity of B cell phenotypes and functions within the lung may provide valuable insights into their potential roles in TB immunity and pathogenesis.

The **aim of this study was to provide a detailed analysis of the B cell compartment in the lungs of TB patients.** Previous research suggests an important role for B cells in the immune response to Mtb infection, but specific functions and phenotypes of lung-resident B cells were not well characterized. To answer this question, the study examined the **localisation and frequency of B cells in the lung tissue** of patients with TB compared to non-TB controls, and **characterized the phenotypes and maturation states of B cells present in the lung tissue** of TB patients versus matched blood samples. Furthermore, they investigated the functional role of B cells in the control of Mtb growth using a **granuloma biomimetic model**, assessing the presence and potential functional relevance of Mtb-specific antibodies in the lung tissue of TB patients.

Study limitations included the inability to perform some of the analysis on the same sample. Despite some analyses performed with different samples, **similar changes were observed at both the transcriptional and protein levels, supported by the phenotypic changes** observed by each approach.
The study highlights several important implications for the future:

- the importance of examining B cell phenotypes and functions within lung tissue instead of focusing circulating B cells in blood
- the lung microenvironment may shape distinct B cell subsets that could play important roles in the immune response to Mtb
- the identification of unique lung-resident B cell populations could inform the development of new therapeutic strategies targeted towards these subsets, possibly modulating the immune response to TB

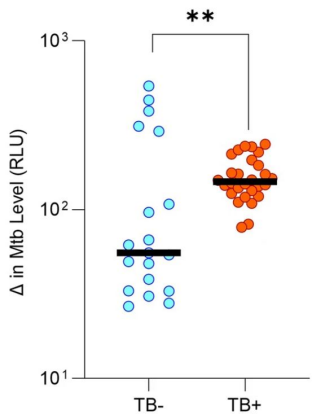


Figure 1. Comparatively, Mtb grew more rapidly in PBMCs derived from patients with TB. B cells were depleted from PBMCs, of which four donors were healthy and four had active TB, and compared to undepleted PBMCs.

The study suggests that B cells may **play a role in granuloma formation in TB** patients' lungs, a critical differential that potentially offers new insights into TB pathogenesis. The **presence of Mtb-specific antibodies in lung tissue**, which enhance Mtb phagocytosis, indicates potential for improved diagnostics and novel therapies. **The paper demonstrates the presence of functionally diverse B cell subsets in the lungs of TB patients**, suggesting multiple potential roles for B cells in the immune response to TB, including antibody-mediated functions, regulation of T cell responses, and direct control of Mtb growth.

communications biology

DR SIMONE RICHARDSON

Interviewed by J. Futter

Simone is currently a Senior Research Scientist in the Antibody Immunity Research Unit of the National Institute for Communicable Diseases (NICD) and at the University of the Witwatersrand, South Africa, where she also completed her PhD. Her research focuses on the role of Fc effector function in HIV, COVID-19, Cytomegalovirus and Influenza infection and vaccination and the improvement of broadly neutralizing antibody function for passive immunization. She currently leads a small team of passionate immunologists and students. She has been honoured as an early career fellow of two of the biggest HIV vaccine bodies, the HIV Vaccine Trials Network and the Collaboration for AIDS Vaccine Discovery and was the recipient of the prestigious Matilde Krim Fellowship in Biomedical Research from the Foundation of AIDS Research (amfAR) and the L'Oreal Women in Science Fellowship. Since 2022 she has been part of the SAIS executive where she leads the communication portfolio. Although the exciting science keeps her busy, she is extremely passionate about science communication!

Pursuing science was not on Simone's radar initially, she was interested in becoming a journalist or a lawyer. A school science enrichment exchange to Singapore changed everything. At the time in Singapore, nanotechnology was at the forefront. This sparked her interest and soon became the new venture she was going to explore. She decided to go to Wits with the desire of pursuing linguistics and science, however, was unable to enrol for both so she ended up sticking with science. Deep down, she's always been fascinated with science - specifically viruses. From the age of thirteen, she remembers asking her teacher what viruses were. She had this thought when she was very young that she would be running through the forests of Borneo and catching apes while trying to find out what viruses they had. Simone enjoys science, she loves that there is always a problem to solve and that most things are solvable. She admits that scientists are storytellers, and she enjoys being able to make a story out of something she's collected, bringing out her journalistic past.

Being at the pinnacle of SARS-CoV-2 research, conducting research on the Omicron variant has been one of her biggest achievements in science. She is also most proud of her recent prestigious Matilde Krim award that she received for HIV research. Being in some senior positions as a scientist, Simone has adapted to acquire important skills, although challenging. She admits that the management of people and softs skills required is the hardest lesson learnt. As a Researcher, other skills not usually taught at the science level, such as communication, teaching, management, project management, and knowing how to write, have been the most helpful. Simone dreams of one day running her own lab. Her goal is to establish a lab that focuses on infectious diseases in children, looking at viruses which do not have vaccines that are efficacious in infants and children, the likes of CMV and RSV. Harnessed from becoming a mother to her own child, she has realized that the things one just lives with and faces as a parent, because there are limited interventions, are untenable, and she believes that she can make an impact here.

Simone's piece of advice to new and early research scientists is that **you should do a PhD degree for the pursuit of enjoying science and scientific discovery. Make sure it is what you love.** Science is a difficult field and so the joy that the job gives you should be your focus. In addition, she urges you to be open and flexible to things that come your way. The work you started doing will not always be what you end up doing. The skills you learn are broadly applicable to everything, so do not ever limit yourself!

Simone Richardson
Senior Research Scientist
AIRU

SCREENING FOR IMMUNE BIOMARKERS ASSOCIATED WITH INFECTION OR PROTECTION AGAINST *ERLICHIA RUMINANTIUM* BY RNA-SEQUENCING ANALYSIS

A. Pretorius, T. Nefefe, N. Thema, J. Liebenberg, H. Steyn, M. Van Kleef
Adapted by L. Bishop

Highlights:

- Sheep PBMC bio-markers to an experimental *E. ruminantium* tick infection studied.
- Blood host-to-pathogen markers for early heartwater infection in sheep identified.
- Possible biomarkers for use in future vaccine efficacy studies were detected.
- Vaccine efficacy markers are sampling time-point dependent.

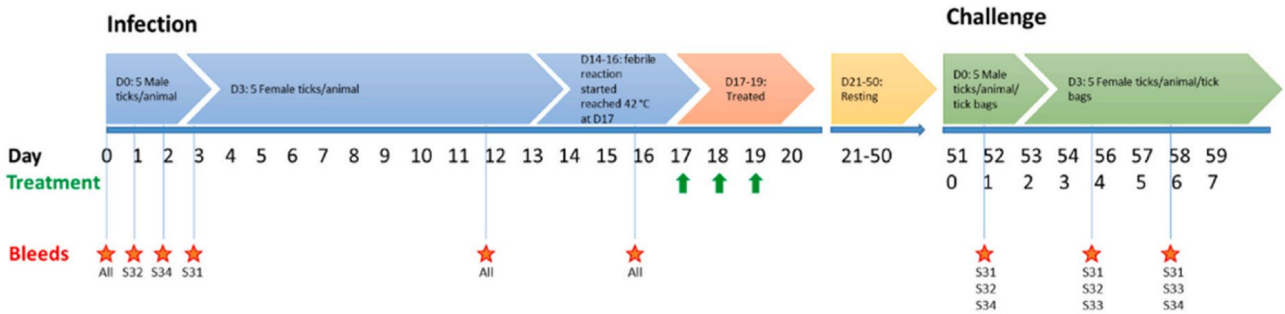


Figure 1. Schematic representation of the experimental tick infection and challenge timeline of the four sheep used in this experiment. Treatment dates (green arrows) and blood collection points (red stars) are indicated. Sheep were bled 24 hours after visible conformation that the ticks attached for the D1-3PI (Post Infection) and PC (Post Challenge) bleeds, with the sheep numbers bled at each time-point are indicated beneath the star.

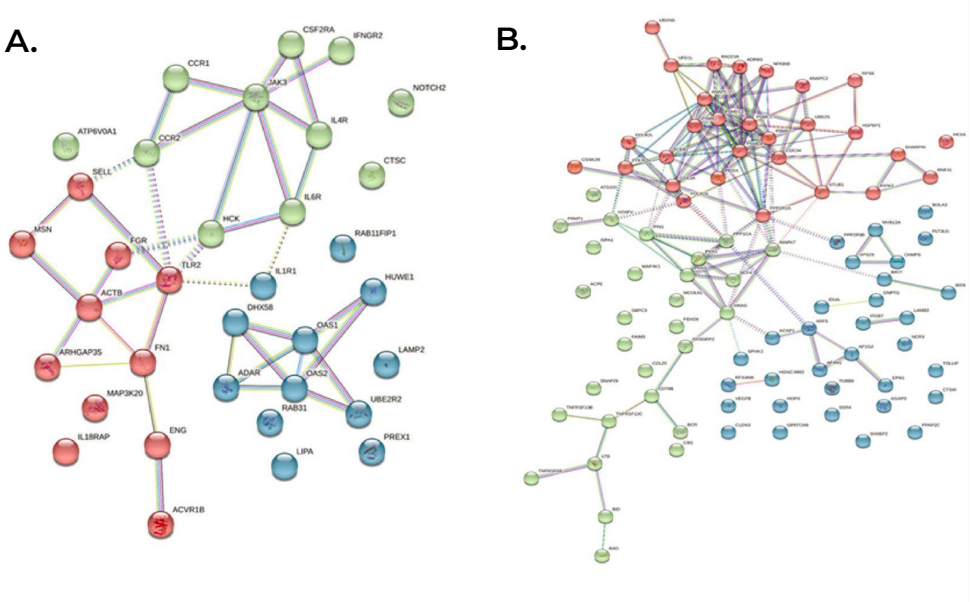
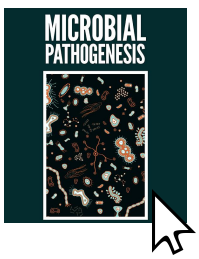


Figure 2. Differentially Expressed Genes identified as (A) Biomarkers of Infection and (B) Biomarkers of Protection were mapped with K-means clustering



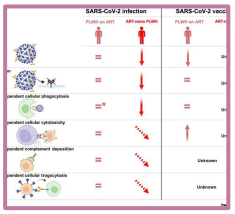
PUBLICATIONS & INTERESTING READS

Two-in-one flu and Covid jab passes advanced trial
Roberts, M. Digital health editor, BBC News
https://www.bbc.com/news/articles/ck55l4rk8z1o?utm_source=Live+Audience&utm_campaign=a660278c77-nature-briefing-daily-20240610&utm_medium=email&utm_term=0_b27a691814-a660278c77-51665968

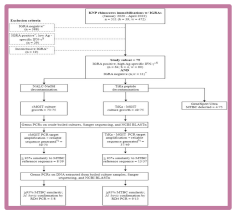
Increase in canine hepatitis has organisations urging pet owners to vaccinate
Robin-Lee Francke, Multimedia Journalist, IOL News
https://www.iol.co.za/news/environment/increase-in-canine-hepatitis-has-organisations-urging-pet-owners-to-vaccinate-e7917bdb-89c5-4ed2-9fdd-1bc7db032bf1

Mpox Outbreak in South Africa
Addis Ababa, The Africa Centres for Disease Control and Prevention (Africa CDC)
https://africacdc.org/news-item/mpox-outbreak-in-south-africa/

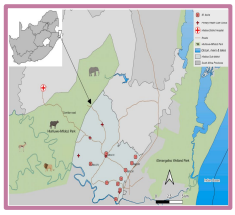
Update on Bovine Tuberculosis Testing Procedure in South Africa
Dr Mpho Maja, Director of Animal Health, Department of Agriculture, Land Reform and Rural development
https://savc.org.za/wp-content/uploads/2024/03/Letter-from-DAH-regarding-TB-testing-in-cattle_28022024.pdf



SARS-CoV-2 humoral immunity in people living with HIV-1
Motsoeneng *et al*, 2024. CellPress, Trends in Immunology.
doi: 10.1016/j.it.2024.05.005



Antemortem detection of *Mycobacterium bovis* in nasal swabs from African rhinoceros
Dwyer *et al*, 2024. Sci Rep. 14: 357.
doi: 10.1038/s41598-023-50236-8



Identification and molecular characterization of *Mycobacterium bovis* DNA in GeneXpert® MTB/RIF ultra-positive, culture-negative sputum from a rural community in South Africa
Goosen *et al*, 2024. One Health. 18: 100702.
doi: 10.1016/j.onehlt.2024.100702

Bioassay Scientist I Endpoint Manager

Research host: Hutchinson Centre Research Institute of South Africa

Job purpose summary: The Endpoints Manager (EM) will oversee a team of Research Technologists conducting immunological assays to determine immune responses induced by candidate vaccines for HIV, M.tb, SARS-CoV-2, and other pathogens. The EM will plan, oversee and ensure timely completion of high-quality lab assays, working in a highly collaborative environment. The EM will train and supervise the team and implement laboratory Quality Assurance (QA) processes to maintain an endpoints lab compliant with Good Clinical Laboratory Practices (GCLP).

Requirements: PhD in immunology or a related field with at least 3 years of management experience OR Master's degree in immunology or a related field with 10 years of experience in clinical bioassays, including at least 5 years of management experience. Experience with multi-parameter flow cytometry, especially intracellular cytokine staining assays. Experience working in a GCLP (Good Clinical Laboratory Practice) laboratory in a clinical trial setting. Experience supervising others in a fast-paced, deadline-driven team environment. Proven ability to lead, manage, and develop people, motivating them to create a supportive and proactive culture. Proficiency in using FlowJo and other computer programs (e.g., GraphPad Prism, JMP) for data analysis, basic statistics, and data interpretation. Strong scientific writing skills. Strong abilities to effectively manage a team. Excellent attention to detail. Advanced project management skills, excellent time management, and ability to meet deadlines. Understanding of the importance, implementation, and maintenance of GCLP principles. Highly flexible and adaptable to the changing needs of a fast-paced and dynamic environment, with a desire to learn. Flexibility around working hours to accommodate operational and study needs. Effective oral, written, and presentation communication skills. Ability to take initiative, work independently, and multitask as required. Advanced problem-solving skills. Knowledge of assay qualification and validation according to regulatory requirements such as FDA guidelines is preferred.

How to apply: Should you be interested in applying for this vacancy, submit your application online https://southafrica-fhcrc.icims.com/jobs/27776/bioassay-scientist-i-endpoint-manager/job?

Closing date: 15 July 2024

Research Officer

Research host: Hutchinson Centre Research Institute of South Africa

Job purpose summary: The Research Officer (RO) will be responsible for leading CHIL research programmes, designing studies, analysing complex datasets and disseminating findings. The RO will collaborate with local and international researchers to manage and drive new projects. S/he will supervise other staff or students on an as-needed basis and assist with organizing training workshops.

Requirements: PhD in Immunology or a related field. At least 6 years of postdoctoral experience in cellular assays. Advanced experience with immunological assays and techniques, including multi-parameter flow cytometry and cell sorting, Interferon-gamma release, ELISA and ELISpot, PCR and transcriptional profiling. Familiarity with GCLP (Good Clinical Laboratory Practice) and GCP (Good Clinical Practice) guidelines. Advanced skills in problem-solving, data analysis, interpretation, and scientific writing. Effective oral, written, and presentation communication skills. Ability to take initiative, work independently, and exhibit a strong work ethic. Advanced project management skills, excellent time management, and the ability to meet deadlines. Ability to train, supervise, and mentor others effectively. Excellent attention to detail with thorough knowledge of quality assurance, quality control, and best laboratory practices. Ability to adapt to changing needs in a dynamic environment and a desire for continual learning.

How to apply: Should you be interested in applying for this vacancy, submit your application online southafrica-fhcrc.icims.com/jobs/search

Closing date: 15 July 2024

Scientific Officer

Research host: Hutchinson Centre Research Institute of South Africa

Job purpose summary: The Scientific Officer (SO) will perform flow cytometry analysis for human clinical trials. S/he will work with lab leadership to design experiments, conduct hands-on research and assist with experimental troubleshooting as required, ensuring that laboratory clinical assays meet appropriate quality level standards. S/he will write laboratory documents for assays being conducted. S/he will report findings at scientific meetings and other venues and assist with manuscript, grant and report writing.

Requirements: PhD in immunology or a related field. At least 3 years of post-graduate experience in multi-parameter flow cytometry. Preference for experience in intracellular cytokine staining and other cell-based assays. Advanced data analysis using FlowJo and other computer programs. Basic statistics, data interpretation, and scientific writing skills. Ability to think innovatively, manage multiple tasks, and excel under pressure. Collaborate effectively with different stakeholders to identify and resolve challenges. Advanced project management skills, excellent time management, and ability to meet deadlines. Effective oral, written, and presentation communication skills. Highly flexible and adaptable to the changing needs of a fast-paced and dynamic environment, with a desire to learn. Excellent attention to detail. Flexibility around working hours to accommodate operational and study needs. Ability to take initiative, work independently, and multitask as required. Advanced problem-solving skills. Out-of-the-box thinker. Understanding the importance, implementation, and maintenance of GCLP principles and good documentation practices. Knowledge of assay qualification and validation according to regulatory requirements, such as FDA guidelines, is preferred.

How to apply: Should you be interested in applying for this vacancy, submit your application online southafrica-fhcrc.icims.com/jobs/search

Closing date: 15 July 2024

Postdoctoral Research Associate

Research host: University of Sheffield, Clinical Infection Research Group

Project summary: The project aims to look at SARS-CoV-2 immunity in a population with hybrid immunity (vaccinated predominantly with the Chinese vaccines), who also suffer from comorbidities, including HIV infection and diabetes. The post is funded on an international salary through the University of Sheffield until January 2026, and the lab work would be based in the Zvitambo unit in Harare, which has been fully equipped for pseudo-neutralisation and ELISpot studies, working alongside a Zimbabwean PhD student.

Requirements: PhD in immunology or an equivalent field. Experience in immunological studies characterizing immune responses to infections and/or vaccines. Sufficient specialist knowledge of various immunological techniques, including the independent setup and validation of new assays. Experience supervising PhD, MSc, or undergraduate students. Experience in developing and maintaining a network of contacts and forming positive working relationships with diverse individuals. Excellent academic track record with publications and presentations at national/international conferences. Effective written and verbal communication skills. Report writing skills and experience delivering presentations. Ability to work independently and take initiative. Ability to work constructively and effectively within a small international team. Ability to assess and organize resources, plan, and progress work activities. Experience of developing and maintaining a network of contacts and forming positive working relationships with a various people.

How to apply: For more information on our application and recruitment processes visit www.sheffield.ac.uk/jobs/application-tips

Closing date: For details of the closing date please view this post on our web pages at www.sheffield.ac.uk/jobs Following the closing date, we will contact you by email to let you know whether or not you have been shortlisted to participate in the next stage of the selection process. Please note that due to the large number of applications that we receive, it may take up to two working weeks following the closing date before the recruiting department will be able to contact you.

SAIS MEMBERSHIP

The SAIS would like to thank all members for their ongoing support! It is highly appreciated. To continue being a part of our growing community, please keep up to date with your membership.

To update your membership and familiarise yourself with the new renewal process, follow the link below:

CLICK HERE

RESOURCES TO FOLLOW

Check out these resources for more immunology-related information:

ALLSA
ALLERGY SOCIETY OF SOUTH AFRICA

FAIS

IUIS
International Union of Immunological Societies

immunopaedia.org
ADVANCING GLOBAL IMMUNOLOGY EDUCATION

SOCIALS TO FOLLOW

Social media is a great way to stay up-to-date with the immunology community! Why not check out these social media handles:

Science Immunology
AAAS
@SciImmunology

@kurzgesagt

The Immunology Podcast

Grab a hot cup of ImmuniTea, and let us know what you think!

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