Resident CD8+ T cells restrain HIV replication in elite controllers

Model showing the potential role of HIV-specific TRMs in natural control of HIV. Circulating HIV-specific CD8+ T cells move between blood and LTs via the afferent and efferent lymph. HIV-specific CD8+ T cells expressing CD69 are more frequent in LTs than in blood and efferent lymph and have signatures associated with TRMs. Within LT, HIV-specific TRMs, as defined by CD69 expression, are more abundant and exhibit more cytolytic properties than those of their CD69− counterparts. The study by Buggert et al. suggests that HIV-specific CD8+ TRMs are more abundant in ECs (right) than in chronic progressors (left), suggesting a role for TRMs in natural control of HIV. Source Roan 2018, Science Immunology.

Human immunodeficiency virus (HIV) is a virus that causes the condition acquired immunodeficiency syndrome (AIDS). The virus attacks CD4+ T cells, making it harder to fight off other infections such as Tuberculosis among others. HIV infection induces adaptive HIV-specific CD8+ T cells which can exert selection pressure on the virus, forcing it to evolve to evade immune recognition and resulting in a lower level and semistable viral set point. The level of the early viral set point is highly predictive for
One of the most important questions in HIV immunology is how CD8+ T cell contribute to immunity against HIV. Despite the fact the HIV replicates in lymphoid tissues, most of CD8+ T cell data come from peripheral blood samples, making interpretation difficult. On the other hand, resident memory T cells (Trm), a subset that resides in non-lymphoid tissues, has been identified as an important effector in the frontline tissue defense as they eliminate pathogens efficiently. It has been suggested that Trm-like cells could execute the same role in the lymph nodes (LN) but adequate studies are lacking.

Buggert and colleagues obtained lymphoid tissues from HIV infected individuals and carried out comprehensive analysis of the CD8+ T cell population. They report a subset of CD8+ T cells in LN that shows a Trm phenotype demonstrated by phenotypic, transcriptional, epigenetic and functional experiments. This cell population is non-circulating and take residency in LN late after extensive cycling in response to antigen. Furthermore, HIV elite controllers (non-treated HIV infected individuals that maintain a very low viral load) have high quantities of HIV specific Trm at LN.

HIV research has been largely limited by our lack of a complete insight of the human immune response after infection. As it has been constantly suggested by recent studies, investigations focused on the blood compartment may be insufficient to grasp the complexity of the biological response against pathogens. Coupling advanced cellular characterization techniques with a well-designed tissue sampling protocol in HIV infected individuals that included tonsils, spleen and thoracic duct lymph, this study brings some light in understanding the role of Trm in HIV immunology. Better comprehension of HIV immunosurveillance could result in new approaches for therapies against HIV infection.

References:

Roan NR 2018. Resident T cells stand up to HIV. Science Immunology

Buggert M et al., 2018. Identification and characterization of HIV-specific resident memory CD8<sup>+</sup> T cells in human lymphoid tissue. Sci Immunol. Science Immunology

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**Breaking News**
Immunopaedia.org.za

IUIS Webinar: COVID-19 in South Africa
Are polymorphisms in the ACE2 locus important for COVID-19 severity?

Immuno-Ethiopia: Genetics of Fungal Immunology

Do mutations in the SARS-CoV-2 spike protein enhance viral infectivity?

Will the COVID-19 pandemic result in significant neuropsychiatric sequelae?

IUIS Webinar: Involvement of C5a-C5aR1 axis in COVID-19 pathology

How effective is Dexamethasone for the treatment of patients with COVID-19?

SARS-CoV-2-specific IgG and IgM in asymptomatic individuals wane quickly

Does breast milk contain SARS-CoV-2?

Are blood groups associated with severe COVID-19 respiratory failure?

Development of an inactivated vaccine candidate for SARS-CoV-2

IUIS Webinar: Understanding Infection and Immunity of SARS-CoV-2

IUIS Webinar: Respiratory Immunity and COVID-19

Identification of two B cell epitopes that induce neutralising Ab in COVID-19 patients

COVID-19 vaccines: can alum based adjuvants improve induction of nAbs?

What evidence is there for pre-existing antibody responses to SARS-CoV-2?

Is COVID-19 an endothelial disease?

A recombinant adenovirus type-5 vectored COVID-19 vaccine appears safe and immunogenic in a first-in-human trial.

SARS-CoV-2 monkey model shows protection from re-infection.

An exuberant inflammatory host response to SARS-CoV-2 leads to COVID-19.

IUIS Webinar: Role of cellular responses in COVID-19

SARS-CoV-2 infection in young children and Kawasaki-like disease.

No evidence that BCG vaccination can protect against SARS-CoV-2 infection.

Do we have more T cell immunity to SARS-CoV-2 than we think?

Is the rapid generation of neutralizing antibodies to SARS-CoV-2 good news for preventing reinfection?

The current status of COVID-19 immunology

IUIS Webinar: Trained immunity and BCG vaccination: a tool against COVID-19?

A nail in the coffin of (hydro)chloroquine treatment against COVID-19?

SARS-CoV-2 found in semen.

Can anti-HIV drugs, Lopinavir and Ritonavir, be used to treat patients with severe COVID-19?

Can the Cytokine Release Syndrome in COVID-19 patients be treated using CCR5 blocking antibody therapy?

IUIS Webinar: Adaptive Immunity in COVID-19

Can a Chimpanzee vector vaccine prevent SARS-CoV-2 pneumonia?

Getting to the guts of SARS-CoV-2 infection

Cigarette smoke triggers increased ACE-2 expression in the lung

Respiratory disease and viral shedding in rhesus macaques inoculated with SARS-CoV-2

IUIS Webinar: What cancer immunologists are doing about COVID-19?

BCG induced trained immunity & COVID-19

Is there a SARS-CoV-2 receptor (ACE2) expression difference between males and females?

Roles of different anti-SARS-CoV-2 antibodies in COVID-19 disease and protection

Exaggerated immune response to Covid-19

Can neonates born to mothers with COVID-19 acquire maternal infection?
Mutation in the Spike protein may explain higher infectivity of SARS-CoV-2 and accelerated disease.
IUIS Webinar: Global outbreaks – Interferons as 1st responders
An inventory of the vaccine candidates to SARS-CoV-2
COVID-19: extending or relaxing distancing control measures
Is a self-amplifying RNA SARS-CoV-2 lipid nanoparticle a good vaccine candidate?
SARS-CoV-2 transmission exploits existing secretory pathways in the nasal cavity: a vaccine/drug target?
The role of complement in COVID-19 pathogenesis.
Scientific Response to COVID-19 Video
Can two FDA-approved drugs be re-purposed to clear SARS-CoV-2 infection?
Should we consider SARS-CoV-2 human challenge models for vaccine testing?
Mask wearing to reduce the spread of COVID-19
Development of inactivated SARS-CoV-2 vaccines
Cytokine Release Syndrome & COVID-19
COVID-19 Antibody Immunology Video
Uncertainty is hampering doctors’ ability to treat COVID-19
Detection of SARS-CoV-2 nAbs in cats
Susceptibility of domestic animals to SARS-CoV-2
Indian population could have intrinsic immunity to resist COVID-19 challenge
Viral dynamics in mild vs severe COVID-19
SARS-CoV-2 transmission and mask wearing.
Convalescent sera option for containing COVID-19
Potential SARS-CoV-2 & COVID-19 Vaccines
COVID-19 Vaccinology Videos
Chloroquine treatment and COVID-19
Exhaustion of antiviral NK and CD8 T cells in SARS-CoV-2 infection
The different clinical characteristics of COVID-19 between children and adults.
Safety considerations in laboratory practice when testing specimens from patients suspected or infected with SARS-CoV-2
A serological assay to detect SARS-CoV-2 seroconversion in humans
Where did SARS-CoV-2 come from?
Faecal shedding of SARS-CoV-2
COVID-19 spurs interest in preprints and improves scientific collaboration
BCG & COVID-19
Potent neutralizing antibodies isolated from COVID-19 patients
The potential benefit of high-dose intravenous Ig in severe COVID-19
SOLIDARITY TRIAL: Testing existing drugs to treat COVID-19
Why is COVID-19 so mild in children?
SOLIDARITY TRIAL: WHO COVID-19 treatment trial
Could blood groups influence COVID-19 disease severity?
Why are hypertension and diabetes patients at high risk of severe COVID-19?
The Origin of SARS-CoV-2
Does COVID-19 have a seasonal pattern?
Broad-spectrum Antiviral Inhibits SARS-CoV-2
Hypothetical pathogenesis of SARS-CoV-2 infection in humans
COVID-19 – Cytokine storm syndromes and immunosuppression
WORLD TB DAY: COVID-19 & TB
Kinetics of Immune Response in a Mild COVID-19 Patient
Immuno-Ethiopia: Fungal epidemiology and immunology
Immuno-Ethiopia: Malaria Highlight 2
Immuno-Ethiopia: Malaria Highlight 1
Single-cell RNA-Seq of BAL samples from COVID-19 patients
Type I interferon co-stimulation of MAIT cell function
The (Un)usual Suspect—Novel Coronavirus Identified
Murine model of coeliac disease
miRNA carried by NETs modulate macrophage function
Does mumps immunity induced by 2 doses of MMR wane in adulthood?
Fever: A positive regulator of Th17 mediated inflammation
T cells altered by CRISPR may be safe to use in cancer patients
DENV-infection induces two major CD8 T cell memory subsets
Repurposing of a drug for alcoholism to treat cancer
Measles induced immunological amnesia
SEPSIS is WANTED!
Discovery of novel cancer signalling mechanism
Macrophages and Cervical Cancer: What’s going on with the microenvironment?
How DNA outside cells can be targeted to prevent the spread of cancer
Solving the puzzle of IgG4-related disease, the elusive autoimmune
How the rice blast fungus “eats” its own cell wall to launch an attack
Can intravenous-BCG prevent M.tb infection?
How does group A Streptococcus evade immunity?
TB biomarker based on anti-Ag85B and 4 inflammatory molecules.
Immuno-Jaipur Highlight: Primary immunodeficiencies
Immuno-Jaipur Highlight: Clinical viral immunity
Immuno-Jaipur Highlight: MHC and Transplantation Immunology
Immuno-Jaipur Highlight: Part 2 of Day 4
Immuno-Jaipur Highlight: Day 4
Immuno-Jaipur Highlight: Part 2 of Day 3
Immuno-Jaipur Highlight: talks by Abul Abbas
Immuno-Jaipur Highlight: Insights into innate and adaptive immunity
IUIS-IIS-FIMSA-Immuno-Jaipur Report
IUIS Beijing ICI 2019
IDA Highlight: What’s New in anti-HIV humoral immunity.
IDA Highlight: Current state of malaria vaccines
IDA Highlight: Scanning the TCR repertoire to inform new TB vaccine targets
IDA Highlight: Possible barriers and opportunities for HIV cure
IDA Highlight: Not all levels of malaria exposure induce the same anti-malarial immunity
IDA Highlight: Immune responses to TB vaccines
IDA Highlight: CD4 T cells in HIV infection
Career Advice from IDA faculty that were once previous IDA Scholars
Lipid profiles key step to preventing breast cancer metastasis through epithelial-mesenchymal
The Vaccinology course, if you are in the vaccine-world, you shouldn’t miss it!
Investigating the immunological composition of the Kidney
CD27 expression identifies Th17 cells with high stemness properties
New fungus-derived antibiotic: relief in sight for immunocompromised people
HIV RV144 vaccine induces better responses in SA compared to Thailand
Rethinking HIV remission strategies: end of the road for anti-α4β7?
GLA-SE promotes superior Tfh expansion than Alum
Class-switch recombination of antibodies occurs prior to germinal center formation.
Can anti-α4β7 really “cure” SIV infection in ART interrupted NHPs?
New insights into the role of HPV oncoproteins and immune response in cervical cancer
Did you know neutrophils can help to form gallstones?
Can vaccinating cats against their own proteins reduce cat allergies in humans?
Use of future liposomal cancer oncology treatment
What other disease affect individuals with olive pollen allergies?
The Immune Function of Osteoclasts
TAK-003 induces functional DENV cross-reactive cellular immunity
Wild is better: in-bred mice born to wild mice resemble human responses
Do NK cells play an important role in anti-Trypanosomiasis immunity?
Are MAIT cells detectable in lymph?
Does S. mansoni treatment affect HIV susceptibility?
Investigating the HIV viral reservoir during acute infection
How does BCG affect early innate immune responses?
Sex associated differences to flu vaccination: role of estradiol?
Propagation of α-synuclein from the gut to brain - new causation for Parkinson’s disease?
Have you heard of Mycetoma?
How does plasmodial hemozoin contribute to cerebral malaria pathogenesis?
Are neutrophils in the tumor microenvironment friend or foe?
Animal models to measure mucosal innate immunity: zebrafish vs mice.
Development of natural murine model of Cryptosporidiosis
Does whole cell pertussis vaccination skew infection induced Ab profiles?
Is Yellow fever vaccination safe for HIV+ individuals?
The emerging role of IL-26 in fighting against intracellular microbes
T cell activation as a potential surrogate marker for TB treatment efficacy.
Does HIV-env vaccination strategy affect the recognition pattern of IgG responses?
Does dysbiosis of the GIT microbiome enhance the neutrophils survival and chronic inflammation in HIV+ individuals?
Dual BCR and TCR co-expressing lymphocyte could play a role in T1D pathogenesis.
M.tb resisors: M.tb uninfected or atypical IFN-γ-independent M.tb immune responses?
Course Highlight: 5th Vaccinology in Course
Immunoinformatics Mexico 2019: Immunologic plasticity, defense lines.
Immunoinformatics Mexico 2019: Part Two
Immunoinformatics Mexico 2019: Part One
Aiding Tuberculosis vaccine studies with the use of a mycobacterial growth inhibition assay
Further Support of the Emerging “Immunologic” Hypothesis in Mood and Eating Disorders
Immunopaedia goes to the XIII World Immune Regulation Meeting
Evolution of flu-vaccine induced B cell responses
Antiviral pathways induced in the RV144 vaccine trial
How are CD8 responses against the malaria liver stage antigens primed?
Contributions to the understanding of the cellular immune response elicited by Brucella canis
IL-7Rαlo KLRG1hi cells are not always short lived effector cells
Dual bNAb therapy can maintain HIV viral suppression
A first-in-human antibody-drug conjugate: Hope for patients with advanced solid tumours?
Targeting the metabolic profile of latently infected macrophages as a potential treatment for HIV
PD-1/PDL1 pathway in the maintenance of maternal-foetal immunotolerance
How does the complement cascade result in pore formation in Lampreys
HIV complications: inflamma-aging or increased activation?
Does BCG improve de novo malaria immunity?
Hematopoietic stem cell transplantation cures HIV
Do neutrophils play a role in age-associated increase in flu mortality?
Do NK cells play a role in vaccine induced humoral immunity?
ICOS: is it essential for Treg-IL10 expression in the colon?
How does IL-27 attenuate autoimmune neuroinflammation?
CNS-neuroinflammation: not all myeloid cells are responsible
Immunosenesence: how does it affect vaccine Ab responses?
Recurrent Strep throat: when TFH cells “turn on” you
TB episode following PD-1 blockade
Can a vaccine prevent ZIKV associated fetal abnormalities?
Does mucosal BCG vaccination induce “protective” immunity?
Are CD8+ and DN MAIT cells distinct populations?
What can ZIKV-CD8 T cells do?
Can some Tfh cells produce IFN-γ?
Have you heard of the ESAT-6 free IGRA?
Are distinct monocyte subsets associated with severe Chagas diseases?
Does HIV superinfection induce an additive or synergistic Ab effect?
Where do memory B cells get reactivated?
Strain specific host restriction of recurrent UTIs
News 2018
TLR-agonist and Salmonella are potential antimelonoma immunotherapy
Plasmablast formation: which T helper phenotype is important?
Organ specific replenishment of tissue resident macrophages
IDA Highlights: Innate signatures of HIV vaccines
IDA Highlights: TB vaccines
IDA Highlights: HIV Immunity
What’s behind Eosinophilic Esophagitis?
IDA Highlights: Malaria
IDA Highlight: TB is a complex disease
IDA Highlights: Immune responses at mucosal sites
We are at the IDA this Week
Intestinal helminth co-infection promotes control against lung migrating parasites
Characterisation of porcine conventional DC subsets
Where do uterine NK cells during pregnancy come from?
Understanding follicular CD8 T cells during SIV infection
Are alveolar macrophages M1 or M2 polarised?
Identifying disease-associated populations in the age of big data
IgD: the lesser known antibody
MAIT cell dysfunction during primary sclerosing cholangitis
How does bacterial-viral co-infection impact anti-viral immunity?
Antibodies and TLR7 agonist delays HIV viral rebound
Lower efficacy of tumour immunotherapy in obesity is due to elevated Leptin
2018: The year of hope for TB vaccines
Is CD153 essential for M.tb control?
Omentin-1 rescues inflammation-induced osteoporosis
New hope from chronic HBV patients: non-replicative Ad-HBV vaccine
Have you heard of analytic treatment interruption of HIV ART?
A novel function of the antihelminthic drug Praziquantel: new strategy for combatting schistosomiasis
What is the incubation period of TB?
E-cigarettes may not be a healthier alternative to traditional cigarettes.
α4β7-MAdCAM interaction promotes HIV replication.
Comparing H56 responses in NHP and humans using mathematical modelling.
Fatal SFTSV is associated with defective B cell responses
Potential treatment for metastatic colorectal cancers: T cell engaging bispecific antibodies
How do γδ T cells control humoral immunity?
Can antibiotic treatment improve Rotavirus immunogenecity?
Clade C RV144-like vaccine is immunogenic.
Can B cell responses predict resolution of Lyme Disease?
Can profiling CD8 T cell responses from Ebola Survivors improve vaccine design?
Can platelets directly kill Plasmodium sp.?
Can viral Immunogenicity govern DENV epidemiological fitness?
How do tuft cells induce Type 2 Responses?
CD32: marker of HIV reservoir?
New Hope for TB Vaccines
HIV vaccine induces similar responses in humans and rhesus macaques.
Ontogeny of MAITs
Public Antibody Clonotypes observed in HIV+ individuals.
Another use for BCG, potential Diabetes cure?
Can testosterone regulate B cell numbers?
Initial Immune Responses to TB in the Human Lung
Antibody-based vaccine protects against 31% of HIV isolates
Natural infection improves breadth of vaccine induced memory
MGIAs: potential role of trained immunity?
ALAI/SMI Highlight: Have you heard of IL-40?
Resident CD8+ T cells restrain HIV replication in elite controllers
Latin American Immunology Congress, a cocktail of scientific breaking news.
ALAI/SMI congress: Hosts a Nobel Laureate and the 1st Iberoamerican Flow Cytometry Meeting

Immunopaedia goes to the Latin American Immunology Congress
ECTS2018 – Where scientific research and clinical practice meet

How does alum block induction of Th1 cells?
Does CXCL17 contribute to protection against herpes?

Vaccine induced monocyte activation contributes to decreased risk of SIV acquisition

Tuft cell tropism may aid norovirus pathogenesis
First Animal Model of Rasmussen’s encephalitis
Engineering IL-2 cytokine-receptor complexes to improve cancer immunotherapy

Reduced Flu severity due to high fibre diet
CD4 T cell positioning in TB granulomas matters
Have you heard of trained immunity?

Human mAbs protects against Zika Neuropathology in Mice
Commensal bacteria leverage IgA during colonisation

Cyto2018 Highlight: Phenotyping DCs using 30 markers.
Cyto2018 Highlight: Immune Clock of Pregnancy

Have you heard of TPMs?
Metabolic reprogramming: Novel strategy to improve cancer immunotherapy

Do monocytes contribute to haemolytic uremic syndrome?
How do mesenchymal stem cells alleviate severe asthma symptoms?
Improved tetramer staining protocol detects functional T cells with low affinity TCRs

Harmless γδ T cells associated with Corynebacterium sp. can be harmful during immune dysregulation

Cancer Immunotherapy is associated with changes in innate immunity
Paratuberculosis in Cattle: Differences in WC1+ γδ T cells responses to stimulation with PPD-J
Serum IgA induced by commensal microbes protects against sepsis

Improved T cell detection by Peptide-MHC dodecamers compared to tetramers
Not all RV144 vaccine induced IgA responses are bad.

Profiling MAITs during Multiple Myeloma

How does anti-TNF treatment affect TB granuloma formation?
Immunoregulatory effects of Vitamin B5 during M. tb infection

Oral vs intradermal BCG, what’s the difference?
Which cells contribute to immunity against vaginal Zika infection?
Can CXCL4 contribute to autoimmune pathology?

5GFTB Highlights: Human TB Challenge, is this possible?
5GFTB Highlights: Why is a new vaccine against TB important?

5GFTB Highlights: MTBVAC potential BCG replacement
Article Highlight: Differentially Expressed Host lincRNA and mRNA in HIV-1 and HIV-2 Infection (Santanu et al., 2018)

5GFTB Highlights: Can we immunologically distinguish LTBI, EPTB and PTB
5GFTB Highlights: Can we induce BCG-mediated long term innate immunity

5GFTB Highlights: Recombinant BCG-Esx1 can induce CD8 T cell responses
CD45.1 vs CD45.2 B6 mice more than an isoform difference.
Potential therapeutic use of H. pylori for asthma
Local signals matter: implication for CD8 T cell function against Leishmania
Influenza-specific lung resident CD8+ T cells maintain diverse TCR profiles
Influenza-specific lung TRM maintain diverse TCR profiles
ILCs homeostasis in Psoriatic Arthritis
MAITs respond differently to ZIKV and DENV
H5VLP-GLASE unlike H5VLP-alum induces both Ab and T cell responses
Non-cytotoxic function of HIV-specific rectal CD8+ T cells
Measuring T cell proliferation using the “Warburg” effect
Re-developed live attenuated Cholera vaccine, is it safe?
Is kick-and-kill HIV cure strategy achievable?
T-bet expression negatively affects T cell lung homing during TB
T follicular helper cells are essential for generating nAb during chronic-infection
HIV Env immunogens elicit broad antibody responses in animal models
Immunological T and B cell Diversity of the Human Penis
How does hyperglycemia lead to aggressive cancer?
We need new HAB/HBV vaccine strategies for HCV/HIV infected individuals
Dengue specific CD8 T cell responses but not Abs provide protection against Zika
Patho-physiological implication of NET in COPD patients
Phase 1 Zika vaccine trial shows promise
SAHGP Pilot: Southern Africans are more diverse than expected

News 2017
Whole M.tb inherently induce highly differentiated T cells compared to H56 vaccination
Kai 1 and Kai 2, new Dog Erythrocyte Antigens: implications for clinical practice
Expression of CD40L by CD8 T cells promotes autologous activation and differentiation
Vaccine induced T cell immunity, antigen localisation in bacterial vector matters
Functional antibody immunity 40 years post Ebolavirus exposure
Immunomodulatory effect of lactic acid on the female reproductive tract
Elevated Th17 cells in “healthy” overweight children
Transphagocytic CD4+ T cells are true APC capable of inducing functional CD8 memory cells
Potential serological test capable of distinguishing ZIKV from Dengue infections
RTS,S/AS01E induces robust central memory responses to HBsAg but not to CSP
CD161+CD4+ T cells depleted at the Cervix during HIV Infection
Regulatory T cells help prevent CMV reactivation
Asymptomatic Zika virus infection protects from re-infection
PD-1-based immunotherapy affected by gut microbiome
Link between schistosomiasis and HIV susceptibility
IL-10+ Th1 T cells associated with reduced malaria parasitemia
Is HIV becoming more resistant over time?
Pre-diabetes associated M.tb-specific T cell dysfunction
Insight into immune activation caused by Ebola virus
Highlights from the Infectious Disease (ID) Week 2017 Conference
Effect of BCG vaccination on HIV-exposed infants
Mechanism behind malaria-induced autoimmunity
Lung on a chip model recapitulates lung cancer pathology and therapy
Antibody cocktail to prevent Zika infection in pregnant women
Antibody-drug dual combination to fight cancer
Block-and-lock strategy to cure HIV
Memory responses are not restricted to immune cells
Pharmacological treatment of lymphedema
How effective are anti-TNF-α agents in treating sarcoidosis?
Regulatory T cells delay clearance of malaria through CTLA-4
Role of horsepox in smallpox vaccine
Short chain fatty acids improve inflammation of the eye
Probiotics induce double-positive intraepithelial lymphocytes
Environmental factors associated with asthma development
CXCL13 predicts development of HIV-specific antibodies
HPV-positive cancer cells are dormant in low oxygen conditions
IL-4–producing B cells shift T cells to Th2 responses
Type I interferons are important in anti-helminth Th2 immunity
Trispecific antibody for HIV therapy
Antibodies protect against cytomegalovirus infection
Investigating HIV RNA expression during antiretroviral therapy
Gut bacteria induce pro-inflammatory response in MS
Severity of leishmania infection depends on time of day
Multi-site injections enhance immune responses
Histamine releasing factor makes host vulnerable to malaria
Plasmodium infection promotes bone loss
Antibodies with incomplete neutralization protect against SHIV
Inflammation associated with chronic fatigue syndrome
Next-generation RTS,S-like malaria vaccine
Zika virus replication in female genital tract
HIV Nef protein implicated in cardiomyopathy
Interaction between microbiome and urogenital schistosomiasis
Terminal differentiation of T cells during CMV & HIV infection
Role of IL-7 receptor in tuberculosis
Langerhans cells affect HIV transmission
Breastfed children less susceptible to asthma attacks
Cerebral cavernous malformations enhanced by microbiome
Child maintains HIV remission without drugs
Garlic treats dengue virus inflammation
Candidate heroin vaccine effective in primate model
Helminth protection by innate Type 2 immunity
Diabetes vaccine in sight
Cow immunizations generate broad HIV antibody responses
Resident T cells improve melanoma prognosis
Microorganisms in the eye protect against infection
Gonorrhoea superbug on the rise globally
Reprogrammed T cells kill cancer
Malaria-induced anaemia reinforced by treatment

Optimizing HIV immunization strategies

High salt intake linked to graft rejection

The nutritional consequence of HIV-helminth coinfection

mTOR implicated in the onset of asthma

A Broad Overview of HIV Treatments and Cures

HPV E7 protein downregulates antitumour immunity

Cancer-killing viruses: the future of cancer therapy?

Vaginal Microbiome Affects HIV Prevention

Sensitive Zika virus diagnostic method using whole blood

Deletion of TB protein eliminates cell heterogeneity

Meat Allergy Develops from Tick Bite

Dorsal foreskin cutting for effective HIV prevention

Type III IFNs in Hepatitis E persistence

Marijuana May Decrease ART Adherence

Preterm births alter ATP production and immunity

Conventional antibody can neutralize HIV

HIV PrEP Linked to Kidney Function

Allergy and asthma across generations

Microbiota in T cell survival

Early Introduction of Peanuts Prevents Allergies

MyD88-mediated cells against C. rodentium identified

Cross-reactive antibodies for Ebola vaccine

Engineered CD8 T cells flush out HIV reservoirs

Targeting an integrin as a potential HIV therapeutic

Marginal zone B cells in cholesterol control

HIV immunogen based on precursor antibodies

MHC Ib molecule protects against TB infection

Broad antibodies from HIV-infected individuals

Zika virus persists in cerebrospinal fluid and lymph nodes

How Tregs control liver damage

GM-CSF and neuroinflammation

Glycosylation consensus to aid HIV immunogen design

Recycling of B cells in the humoral immune response

Cell-to-cell HIV transmission evades antibody responses

Application for CRISPR in muscular dystrophy

Alere HIV Combo Rapid Test

HIV escapes by novel mechanisms

IL-17RA deficiency and susceptibility to pathogens

Microvilli in T cell activation

Asthma increases susceptibility to influenza

Identical viruses form HIV reservoir

Dysfunctional B cell subsets in TB patients

HIV vaccine design with less mutated antibodies
Lab mice may be too clean to use in studies
Combination of 2 antibodies controls HIV replication
CD8 T cells are important for Zika virus control
New autoimmune disease driven by thymic tumour
Malaria vaccine trial with promising results
Road to an effective HIV immunogen
Mycobacterium tuberculosis diversity
Novel cell population reduces response to tumours
Polyfunctional antibodies in the control of HIV
Neutrophils aid in immune tolerance during pregnancy
Probiotic lotion as eczema treatment
Antibody that can control HIV replication
Important role for antibodies in TB infection
Mucosal cells enhance HIV entry into CD4 T cells
Novel mechanism for anti-cancer drug
Changes in gut microbiome in Inflammatory Bowel Disease
Functional B cells needed to prevent preterm birth
Antibody resistance does not play a role in mother-to-child-transmission
Using chemokine CXCL13 as a biomarker of germinal centre activity
Reason why immunotherapy does not work for all cancers
Characterization of novel antibody that recognizes HIV trimer
International Remote Conference Highlights: Establishment of memory CD8 cells to influenza
International Remote Conference Highlights: Antibody response to malaria in Burkina Faso
International Remote Conference Highlights: Can HAART be used to cure HIV?
Rapid evolution of the infant microbiome after birth
No role for CD4 T cells in shift from latent to active TB
Evidence for antibodies in control of HIV infection
Not all CD8 T cells have cytotoxic effects
2nd Annual International Remote Conference: Science and Society
Role of T cells in Zika virus infection
Effective mechanism to kill human viruses
Different gut microbes present depending on diet
No correlation between Vitamin D levels and vaccine responses
Traits associated with the production of broadly neutralizing antibodies
Novel mechanism reveals how leishmania evades immune system

News 2016
Changes in CD8 T cells during viral infection
Gut microbiota suppress liver cancer
Ebola vaccine confirmed to be highly effective
Chikungunya virus vaccine using an insect virus
Characteristics of HIV which affect antibody recognition
The adverse effects of Zika virus on infants
Using CARs to kill HIV
Unique T cells compartmentalize in lymphoid sites
Using nanoparticles in HIV immunogen design
The link between malaria and cancer
Gut microbiota influences pathogenesis of Parkinson's disease
Is an HIV vaccine possible?
Insights into how hemolysis leads to susceptibility to infection
Th1 response leads to effective antibodies against influenza
Targeting essential TB enzyme may lead to novel treatments
Treating helminth infections boosts immune system
Toll-like receptor helps nematodes avoid pathogens
Infants can produce anti-HIV antibodies with minimal somatic hypermutation
Antibodies from Ebola survivor have potent anti-viral activity
The microbiome has anti-tumor effects
Understanding the organization of TB-associated granulomas
Using cell-specific knock-outs to study the function of genes
Mycobacterium tuberculosis tricks body into autoimmunity
HIV R4P Highlights: Dendritic cells which capture HIV in Female Reproductive Tract
HIV R4P Highlights: Inducing T cells in an HIV Vaccine
HIV R4P Highlights: HIV superinfection does not increase antibody breadth
HIV R4P Highlights: New antibody lineages against HIV high mannose-patch
HIV R4P Highlights: BV increases risk of HIV acquisition through neutrophils
HIV R4P Highlights: Children frequently make HIV-specific broad antibody responses
HIV R4P Highlights: Interview with Prof Thumbi Ndung'u
HIV R4P Highlights: α4β7 antibody and ART: a novel HIV therapy
IgA antibodies found in women taking PrEP
The role of TNF and aging in susceptibility to infection
A combination of worms and bacteria may be good for your health
Immunological memory in the Mucosa
Neutrophils and radiation therapy working together to fight cancer
Mosquitos with fungus are more susceptible to malaria parasites
Understanding the skin phenotype of children with eczema
Treating HIV with the power of an antibody
Possibility of one vaccine to prevent Zika and Dengue viruses
ICI 2016 – What leads to HIV progression in children?
ICI 2016 – Parasitic worms in the treatment of chronic asthma
ICI 2016 – Potential new diagnostic tool for TB in children
ICI 2016 – The role of complement in fighting malaria in pregnancy
ICI 2016- Mycobacterium tuberculosis at the granuloma level in the human lung
ICI 2016 – What is the link between house dust mites and allergic disease?
ICI 2016 – Reversing Schistosomiasis Tissue Fibrosis
ICI 2016 – The Future of a More Effective HIV Vaccine?
Reflecting on AIDS 2016
Vaccine: Protective Measures Against Chlamydia Discovered
Immunopaedia goes to the 21st International AIDS Conference
Treating AIDS in 2016: New drugs for the future
Financing the Response to HIV: Show Us the Money
Progress in HIV Vaccines and the Road to the Clinic  
AIDS 2016: Towards an HIV Cure  
Regulation of IL-25 levels provides protection against clostridium difficile infection  
Injection drug use and susceptibility to HIV and co-morbidities  
Is there a link between loneliness and Inflammation?  
Do Mosquito bites help viral infections?  
Can we tolerate an inhaled vaccine as a way to improve BCG efficacy?  
A new genetic approach for diagnosing Common Variable Immunodeficiency  
Inflammatory markers during pregnancy is linked with autism  
Possible mother-to-child transmission route for Zika virus discovered  
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Antigen Delivery to the Draining Lymph Nodes is a Key to Intradermal Vaccination Efficacy  
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Streptococcus pneumoniae forms microlesions in myocardium, disrupting cardiac function
CD45 ligation expands Tregs by promoting interactions with dendritic cells
Club cells – identified in Influenza pathogenesis
EBV specific cytotoxic T Cell clones can transiently control EBV infection
Mother-Infant HIV Transmission a review on antibody protection
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Lopinavir/Ritonavir-based ART vs Efavirenz-based ART for the prevention of malaria in pregnancy
Viral reservoirs limited by ART
The role of Cas1 and 2 proteins and immunity
*T. gondii* ligand shown to promote inflammatory monocytes and provide resistance to bacterial infection
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ART in acute infection limits viral reservoirs
Kaposi Sarcoma treated with pegylated interferon
Broad-spectrum anti-biofilm peptide targets cellular stress response
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Prostate cancer incidence among HIV-positive and HIV-negative men
Beta-catenin-regulated myeloid cells determine wound healing
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**Clec12a** regulates inflammation in response to cell death
Results from a novel flu vaccine
Using immunomics to find vaccine antigens for schistosomiasis
South African treatment guidelines should use viral load, not CD4 count for greater success
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Understanding molecular evolution of HIV and ART
Inhibition of calcineurin abrogates whereas inhibition of mTOR promotes Regulatory T Cells
Neuronal ferritin heavy chain and opiate abuse affect HIV-associated cognitive dysfunction
Agonistic induction of **PPARy** shown to reverse emphysema
Treating rheumatoid arthritis with peptide-specific CD8+ regulatory T cells
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**UTI** treatment requires a coordinated phagocytic response
Memory regulatory T cells reside in human skin
T cell repertoire following autologous stem cell transplantation for multiple sclerosis
Sex difference noted in response to influenza vaccine
Normalizing glycosphingolipids restores CD4+ T cells function in lupus patients
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Microbiota helps regulate behaviour in Autism Spectrum Disorders
**Thibela TB** study - a trial of mass isoniazid preventive therapy for tuberculosis control
A systematic review and meta-analysis of long-term immune responses to vaccination in HIV