

# 19<sup>th</sup> International Symposium on NeuroVirology



Held jointly with the

## 2023 Conference on HIV in the Nervous System

### Poster Guide



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**General information about posters**

- Poster abstracts were ordered by first author last name
- The guide provides the poster number (example poster 1 = P1), title, author(s), author(s) affiliations
- The index provides ALL authors names and ALL poster numbers they are associated with
- Odd number poster will be presented in the first hour
- Even number posters will be presented in the second hour

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**Notes**

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**P1****Analysis of EIF2AK3 alternative splicing and its effect on PERK function in response to ER stress**

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**P2****Viral dynamics of SIV rebound in the CNS following cART cessation**

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**P3****Anti-HIV and Anti-inflammasome Activity of a Novel Chiral Potent Endocannabinoid Ligand (R)- N-(1-Methyl-2-hydroxyethyl)-13-(S)-methyl-arachidonamide (AMG315)**

Venkata Atluri<sup>1</sup>, Adriana Yndart<sup>2</sup>, Nagesh Kolishetti<sup>2</sup>, Arti Vashist<sup>2</sup>, Alexandros Makriyannis<sup>3</sup>, Madhavan Nair<sup>2</sup>  
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**P4****Injectable Long-acting Nanoformulations Prevent Dolutegravir-linked Neurodevelopmental Impairments**

Aditya Bade, Yutong Liu, Howard Gendelman, Benson Edagwa  
(corresponding author: aditya.bade@unmc.edu)

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**P5****Suppression of HSV-1 Infection and Viral Reactivation by CRISPR/Cas9 Gene Editing in 2D and 3D Culture Models**

Anna Bellizzi<sup>1</sup>, Senem Cakir<sup>1</sup>, Martina Donadoni<sup>1</sup>, Rahsan Sariyer<sup>1</sup>, Shuren Liao<sup>1</sup>, Hong Liu<sup>1</sup>, Elvin Ruan<sup>2</sup>, Jennifer Gordon<sup>2</sup>, Kamel Khalili<sup>1</sup>, Ilker K Sariyer<sup>1</sup>  
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**P6****Agnostic development of highly efficient CRISPR/Cas9 gRNAs to target the integrated HIV-1 provirus**

Rachel Berman<sup>1,2</sup>, Will Dampier<sup>1,2,3</sup>, Chelsea E. Gunderson<sup>1,2</sup>, Bhaswati Sen<sup>1,4</sup>, Azad Ahmed<sup>1,4</sup>, Michael Nonnemacher<sup>1,2,5</sup>, and Brian Wigdahl<sup>1,2,5</sup>  
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**P7****Effects of cannabidiol (CBD) in EcoHIV infection, behavioral defects, and transcriptional brain signatures.**

Alejandra Borjabad, Jennifer Kelschenbach, Loreto Carvallo, Eran Hadas, Wei Chao, David J Volsky  
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**P8****Impact of circulating HBV proteins on HIV-1 infection dynamics in cells of the myeloid lineage**

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**P9****Non-infectious varicella zoster virus extracellular vesicles suppress the antiviral response and promote neuroinvasion**

Andrew Bubak<sup>1</sup>, Christy Niemeyer<sup>1</sup>, Seth Frieze<sup>2</sup>, Christina Coughlan<sup>1</sup>, Serena Lewis<sup>1</sup>, Sara Bustos Lopez<sup>1</sup>, Anthony Saviola<sup>3</sup>, Kirk Hansen<sup>3</sup>, Eva Medina<sup>1</sup>, Vicki Traina-Dorge<sup>4</sup>, Maria Nagel<sup>5</sup>, Diego Restrepo<sup>6</sup>, Ravi Mahalingam<sup>1</sup>  
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**P10****The role of LncRNA TUG1 in HIV-1 Tat-induced astrocyte senescence: Implications for NeuroHIV**

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**P11****Chronic HIV/SIV infection is associated with viral persistence and heightened neuroinflammation despite viral suppression with ART**

Sarah Byrnes<sup>1</sup>, Kathleen Busman-Sahay<sup>2</sup>, Thomas Angelovich<sup>1</sup>, Skyler Younger<sup>2</sup>, Sol Taylor-Brill<sup>2</sup>, Michael Nekorchuk<sup>2</sup>, Stephen Bondoc<sup>2</sup>, Rachel Dannay<sup>2</sup>, Margaret Terry<sup>2</sup>, Catherine Cochrane<sup>1</sup>, Trisha Jenkins<sup>1</sup>, Emma Wanicek<sup>1</sup>, Michael Roche<sup>1</sup>, Claire Deleage<sup>3</sup>, Steve Bosinger<sup>4</sup>, Mirko Paiadini<sup>4</sup>, Bruce Brew<sup>5</sup>, Jacob Estes<sup>2</sup>, Melissa Churchill<sup>1</sup>  
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**P12****HIV increases foam cell formation through NLRP3 inflammasome pathway**

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**P13****A novel method of characterizing cells from ex vivo mammalian brain tissue to study HIV infection of the central nervous system**

Zachary Capriotti, Erick O'Brien, Rachel Van Duyne, Joshua Jackson, Zachary Klase  
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**P14****Inflammasome activation correlates in the CNS with impaired early antibody response and viral neutralization in SIV-infected pigtail macaques (*Macaca nemestrina*)**

Natalie Castell, Celina Abreu, Erin Shirk, Suzanne E. Queen, Lucio Gama, Joseph L. Mankowski, Janice E. Clements, Rebecca T. Veenhuis

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**P15****JCV-infection modeling in 3D human cerebral organoid cultures**

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**P16****SLC38A9 regulates SARS-CoV-2 viral entry**

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**P17****Alzheimer's disease related biomarkers in people living with HIV**

Maddy Cohen<sup>1</sup>, Caitlin Tice<sup>1</sup>, Dianne Langford<sup>1</sup>, Sarah Cooley<sup>2</sup>, Beau M. Ances<sup>2</sup>, Tricia H. Burdo<sup>1</sup>

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**P18****Evaluating defectiveness of integrated HIV-1 quasispecies in brain and spleen reservoirs using Nanopore sequencing**

Mackenzie E. Collins<sup>1,2</sup>, Diehl R. De Souza<sup>1,2</sup>, William Dampier<sup>1,2</sup>, DV Klopfenstein Cassandra Spector<sup>1,2</sup>, Brian Wigdahl<sup>1,2,3,5</sup>, and Michael R. Nonnemacher<sup>1,2,5</sup>

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**P19****Computational analysis of Cas proteins unlocks new potential in HIV-1-targeted gene therapy**

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**P20****HIV-1 Tat induces the formation of Bax pores on lysosomes**

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**P21****Development and application of an ELISA to quantify HIV Tat in exosomes from serum and CSF**

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**P22****Extracellular Vesicle Associated HIV RNA Correlates with Neurocognitive Dysfunction**

Catherine DeMarino<sup>1</sup>, Julia Denniss<sup>1</sup>, Maria Cowen<sup>1</sup>, Lisa Henderson<sup>1</sup>, Elyse Gollomp<sup>2</sup>, Joseph Snow<sup>2</sup>, Darshan Pandya<sup>1</sup>, Bryan Smith<sup>1</sup>, Avi Nath<sup>1</sup>  
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**P23****The interplay between oxylipins, energy metabolism and immune function associated with HIV infection and ART**

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**P24****ER Stress and dysregulated autophagy mediate HIV-1 Tat-induced senescence in human M<sup>o</sup>ller glial cells**

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**P25****Longitudinal Neuropsychological Assessment In an Urban Cohort of Adults Living with Well-Managed HIV**

Kathryn N. Devlin<sup>1</sup>, Will Dampier<sup>2,3,4</sup>, Shinika Tillman<sup>2,5,6</sup>, Diana Surita<sup>2,5,6</sup>, Kim Malone<sup>2,5,6</sup>, Amy Althoff<sup>5,6</sup>, Zsofia Szep<sup>5,6</sup>, Vanessa Pirrone<sup>2,3</sup>, Michael Nonnemacher<sup>2,3,7</sup>, Brian Wigdahl<sup>2,3,5,7</sup> and Maria Schultheis<sup>1</sup>  
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**P26****HIV-1 infection characterization and modeling NeuroHIV in hiPSCs-derived 3D cerebral organoids**

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**P27****Expansion of EBV Peptide-Specific CD8 T Cells from Multiple Sclerosis Patients and Healthy Donors Reveals Dysregulation of Effector Responses that may be Associated with Disease Pathogenesis**

Abaigeal Donaldson<sup>1</sup>, Lauren Suarez<sup>2</sup>, William Frazier<sup>1</sup>, Maria Monaco-Kushner<sup>1</sup>, Ruipeng Wang<sup>2</sup>, Jack Ragheb<sup>2</sup>, Mathias Oelke<sup>2</sup>, Steven Jacobson<sup>1</sup>

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**P28****SERPIN-Derived Small Peptide (SP16) as a Potential Therapeutic Agent against HIV-Induced Inflammatory Molecules and Viral Replication in Cells of the Central Nervous System**

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**P29****Caspase cleavage of gasdermin E causes neuronal pyroptosis in HIV-associated neurocognitive disorder**

Jason Fernandes<sup>1</sup>, William Branton<sup>1</sup>, Eric Cohen<sup>2</sup>, Gerrit Koopman<sup>3</sup>, Ivanela Kondova<sup>4</sup>, Benjamin Gelman<sup>5</sup>, Christopher Power<sup>1</sup>  
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**P30****Drugs of Abuse Alter Cell-Type-Specific Pathogenic Pathways in SIV-Infected Nonhuman Primates**

Howard S Fox<sup>1</sup>, Meng Niu<sup>1</sup>, Benjamin G Lamberty<sup>1</sup>, Katy Emanuel<sup>1</sup>, Palsamy Periyasamy<sup>2</sup>, Shannon Callen<sup>2</sup>, Arpan Acharya<sup>2</sup>, Gregory Kubik<sup>3</sup>, James Eudy<sup>4</sup>, Chittibabu Guda<sup>4</sup>, Siddappa N Byrareddy<sup>2</sup>, Shilpa Buch<sup>2</sup>

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**P31****Cocaine Regulates Antiretroviral Therapy CNS Access Through Pregnane-X Receptor-Mediated Drug Transporter and Metabolizing Enzyme Modulation at the Blood Brain Barrier**

Lisa Fridman, Stephen Knerler, Amira-Storm Price, Rodnie Colon Ortiz, Alicia Mercado, Hannah Wilkins, Bianca Flores, Benjamin Orsburn, Dionna Williams

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**P32****Astrocyte-Induced Hiv Latency in Microglia: Immunomodulatory Role of Adenosine**

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**P33****Stimulants may act via multiple mechanisms to increase myeloid HIV infection and exacerbate neuroHIV**

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**P34****Investigating intercellular interactions between astrocytes and microglia during HIV infection**

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**P35****Development of an de novo miRNA Packaging Assay to Elucidate the Role of Intrinsic and Extrinsic (Viral Specific) Factors Affecting Extracellular Vesicle-Mediated miRNA Export and Exchange in Host mammalian Cells**

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**P36****A commonly occurring haplotype B of PERK protein with modest but increased kinase activity results in an elevated endoplasmic reticulum stress response and reduced stress tolerance in neuroglia**

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**P37****Cerebral humanization of immune compromised mice with hematopoietic stem and neural progenitor cells to create wholistic model of HAND**

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**P38****Generating a CRISPR/spCas9 system utilizing multiple gRNAs for targeting co-evolved HIV genes**

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**P39****HERV-K (HML-2) envelope protein induces mitochondrial depolarization and neurotoxicity via endolysosome iron dyshomeostasis**

Peter Halcrow<sup>1</sup>, Darius N.K. Quansah<sup>1</sup>, Nirmal Kumar<sup>1</sup>, Joseph P. Steiner<sup>2</sup>, Avindra Nath<sup>2</sup>, Jonathan D. Geiger<sup>1</sup>

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**P40****SARS-CoV-2 S1 induces endolysosome leakage in astrocytes**

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**P41****Serological ATP plays a role in HIV-associated neurocognitive disorder by promoting transcellular trans-endothelial migration through the blood-brain barrier**

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**P42****The role of inflammation and blood-brain barrier disruption in depression pathogenesis in people with HIV**

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**P43****Accelerated aging in the brain of SIV-infected macaques: a role for astrocytes in ADRD and potential therapeutics?**

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**P44****HIV transcriptional regulation in the CNS of ART-suppressed people with HIV**

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**P45****Human Endogenous Retrovirus-K subtype HML-2 Envelope triggers TLR2 in Sporadic Amyotrophic Lateral Sclerosis**

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**P46****The Impact of HIV-1 Tat and Morphine on Spatial Distribution of Drugs in the Brain**

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**P47****gRNAs targeting the 5'LTR of the HIV-1 provirus induce insertions and deletions that prevent proviral reactivation**

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**P48****Morphine dependence accelerates HIV-associated neurocognitive impairment in EcoHIV infected mice**

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**P49****CCL2 is required for initiation but not persistence of HIV infection mediated neurocognitive disease in mice**

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**P50****CSF1R inhibition depletes brain macrophages and reduces brain virus burden in SIV-infected macaques**

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**P51****Early Extracellular Vesicles from HIV-1-infected Cells Modulate Cell Cycle and Inflammation in the Recipient Cells**

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**P52****Assessment of DNA methylation of HIV and its integration sites in the human genome**

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**P53****HIV antibodies in the central nervous system (CNS) have a unique glycosylation profile that increases CNS penetration across the blood brain barrier (BBB)**

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**P54****Extracellular vesicles in HIV and drugs of abuse**

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**P55****“Sera-ious” Insights: Sera from depressed people with HIV induce mitochondrial and cytoskeletal changes in cultured human astrocytes**

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**P56****Herpes simplex virus 1 infection does not affect amyloid-beta pathology in APP/PS1 mice**

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**P57****Induction of A1-like astrocyte polarization in primary human cells**

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**P58****Effects of cannabinoids on phenotype of patient monocyte-derived macrophages vary by cannabis use patterns**

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**P59****Human endogenous retrovirus-K envelope transgenic mice as a mouse model of Amyotrophic Lateral Sclerosis**

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**P60****Strategic Self-Limiting Production of Infectious HIV Particles by CRISPR in Permissive Cells**

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**P61****The HIV-1 Transgenic Rat: An Extant In Vivo Biological System to Model Aging and HIV-1 Comorbidities**

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**P62****Clonal Hematopoiesis in monocytes contributes to HIV-associated neuroinflammation**

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**P63****Simian varicella virus infection in rhesus macaques promotes amyloid formation in multiple organs**

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**P64****Myeloid Inflammation and Viral Infection in the Context of Comorbid HIV and Depression**

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**P65****Anticholinergic and Sedative Medication Burdens are Associated with Cognitive Frailty in People Aging with HIV**

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**P66****Monkeypox virus infection of human astrocytes drives gasdermin B cleavage and pyroptosis**

Hajar Miranzadeh, Yi-Chan Lin, Natacha Ogando, Eman Moussa, Olivier Julien, Ryan Noyce, David Evans, Christopher Power (corresponding author: cp9@ualberta.ca)

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**P67****Expression of HIV envelope protein gp120 in human brain**

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**P68****Extracellular Vesicles Isolation Methods Identify Distinct HIV-1 Particles Released from Chronically Infected T-cells**

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**P69****Long-term ART suppression increases neurodegenerative mRNA profiles in brain macrophages isolated from SIV-infected ART-suppressed macaques.**

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**P70****Milk-EVs as Nextgen Carriers**

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**P71****EcoHIV Infection in Mice Interacts with Cocaine Abstinence and Exposure Pattern to Alter Cocaine Seeking and Peripheral Immune Function**

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**P72****The long non-coding RNA Meg3 is essential for HIV-1 latency in T cells.**

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**P73****Infection of olfactory epithelium with alphaherpesvirus elicits cellular remodeling and expression of beta amyloid**

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**P74****HIV-1 Infection of Monocyte Derived Macrophages Alters miRNA Expression targeting beta-Catenin-TEF/LEF Signaling**

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**P75****HIV-1 Tat and methamphetamine-induced neuroinflammation: the involvement of ZBP1-PANoptosis in astrocyte activation**

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**P76****Cocaine May Enhance HIV-Infection of Human iPSC-derived Microglia and Monocyte-Derived Macrophages**

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**P77****Alternative Splicing of Amyloid Precursor Protein (APP) and Connections to HIV Associated Aging and AD-Like Pathology**

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**P78****Epigenetic regulation of astrocyte activation and neuroinflammation by HIV Tat and morphine: Implications for pathogenesis of NeuroHIV**

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**P79****Nef expression in astrocytes of the nucleus accumbens disrupts the glutamate cycle and increases cocaine seeking behavior in rats**

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**P80****Viral Immune Signatures from Cerebrospinal Fluid Extracellular Vesicles in HAM/TSP and Other Chronic Neurological Diseases**

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**P81****Changes in myeloid-derived extracellular vesicle production and profiles during SHIV.D infection**

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**P82****Myeloid-tropic SHIV.D persistence in the central nervous system after six months of antiretroviral therapy**

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**P83****HIV-Tat protein: from molecular structure to aggregation**

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**P84****Methadone alters antiretroviral concentrations, dysregulates neuroinflammation, and disrupts P-glycoprotein expression in the brains of HIV-1 Tat transgenic mice.**

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**P85****Role of SLC38A9 in Tat-induced Cytokine Release in Astrocytes**

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**P86****You are what you vape: Implications of chronic Δ-THC self-administration in changes in the gut microbiome of rats**

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**P87****Roadmap For The Expression Of Canonical And Extended Endocannabinoid System Receptors And Proteins In Peripheral Organs Of Mice, Rats and NHP**

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**P88****Intact HIV genomes within monocytes are associated with cognitive function in virally suppressed women with HIV**

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**P89****Characterizing migratory and inflammatory properties of different subsets of CD14+CD16+ monocytes and their role in HIV neuropathogenesis**

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**P90****Delivery of shRNA by AAV9 Blocks HERV-K Env Expression and its Neurotoxicity**

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**P91****Omics approaches to understand tissue specific responses including CNS using hamster models of SARS-CoV-2**

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**P92****Nef-arious? Investigating the role of HIV-1 Nef Neurotoxicity in a SCID Murine Model for HIV Associated Neurocognitive Disorders**

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**P93****Human IgG glycan pattern and autoreactivity is associated with neuroinflammation in COVID-19**

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**P94****Tryptophan-Kynurenine Metabolic Pathway and Daytime Dysfunction in Women Living With HIV**

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**P95****Studying cell-extrinsic regulators of HIV latency in the brain**

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**P96****Imaging Spinal Cord Atrophy: Quantifying Spinal Cord Cross Sectional Area in HAM/TSP Patients Longitudinally**

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**P97****Comparative response of HIV-infected, brain-resident myeloid cells to CB2 activation.**

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**P98****OPRM1 pre-mRNA Splicing and its Regulation by HIV-1 and Morphine in 3D Cerebral Organoid Models**

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**P99****Detect, Predict, Prevent: Neurodegenerative Disease of Disrupted Waste Management**

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**P100****Spatio-temporal reorganization of the endolysosomal network by Zika virus**

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**P101****The Role of Tunneling Nanotubes in NeuroHIV**

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**P102****Novel approaches utilizing human brain tissue to investigate HIV-1 infection of the central nervous system**

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**P103****Characterizing the Role of Monocytes in HIV Neuropathogenesis**

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**P104****Exploring benzodiazepine mediated epigenetic regulation of transcriptional control in HIV1 infected hMDMs**

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**P105****Accumulation of CNS macrophages within and traffic out with SIV infection, ART and ART interruption: implications for the CNS as viral reservoir**

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**P106****The Impact of Methamphetamine on Macrophages in the Context of HIV Neuropathogenesis**

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**P107****The use of CBD and its synthetic analog HU308 in HIV-1-infected myeloid cells**

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**P108****Brain N-acetyl-aspartyl-glutamate (NAAG) is associated with cognitive function in virally-suppressed people living with HIV**

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**P109****Effect of Depressive Symptoms on Memory Performance in Persons with HIV: A Systematic Review**

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**P110****The Retinoid X Receptors (RXRs) Are Additional HIV-1 Silencing factors in Microglial Cells**

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**P111****HIV-1 Infection Accelerates Alzheimer's Pathobiology in Humanized App Knock-In Mouse**

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**P112****Regulation of microglial phenotype by immunometabolic reprogramming in HIV-infected microglia colonized human forebrain organoids**

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**P113****Requirement for macrophage-derived cysteinyl leukotrienes in HIV-associated neuronal injury**

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**P114****Generation of microglia-containing organoids: validation of a model for HIV infection studies**

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**P115****HIV infection triggers the inflammatory cGAS-STING pathway in microglia**

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**P116****Development of Murine Model of HIV-induced Psychosocial and Sleep Deficits**

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