

## References of Articles Relating to XpressBio Products

### HIV-1 p24 (XB-1000)

- Abdala, Nadia et al. "Recovering Infectious HIV from Novel Syringe-Needle Combinations with Low Dead Space Volumes." *AIDS research and human retroviruses* vol. 32,10-11 (2016): 947-954. doi:10.1089/aid.2016.0023
- Amet, Tohti et al. "Glycosylphosphatidylinositol Anchor Deficiency Attenuates the Production of Infectious HIV-1 and Renders Virions Sensitive to Complement Attack." *AIDS research and human retroviruses* vol. 32,10-11 (2016): 1100-1112. doi:10.1089/AID.2016.0046
- Bashir, Tahir, et al. "HbAHP-25, an In-Silico Designed Peptide, Inhibits HIV-1 Entry by Blocking gp120 Binding to CD4 Receptor." *PLOS ONE*, vol. 10, no. 4, 2015, doi:10.1371/journal.pone.0124839.
- Basova, Liana et al. "Dopamine and Its Receptors Play a Role in the Modulation of CCR5 Expression in Innate Immune Cells Following Exposure to Methamphetamine: Implications to HIV Infection." Ed. Srinivas Mummidi. *PLoS ONE* 13.6 (2018): e0199861. *PMC*. Web. 29 Aug. 2018.
- Berger A, Sommer AFR, Zwarg J, Hamdorf M, Welzel K, Esly N, et al. (2011) SAMHD1-Deficient CD14+ Cells from Individuals with Aicardi-Goutières Syndrome Are Highly Susceptible to HIV-1 Infection. *PLoS Pathog* 7(12): e1002425. <https://doi.org/10.1371/journal.ppat.1002425>
- Chaipan, Chawaree, et al. "APOBEC3G Restricts HIV-1 to a Greater Extent than APOBEC3F and APOBEC3DE in Human Primary CD4+ T Cells and Macrophages." *Journal of Virology*, vol. 87, no. 1, Jan. 2013, pp. 444–453., doi:10.1128/jvi.00676-12.
- Chaipan, Chawaree, et al. "Single-Virus Droplet Microfluidics for High-Throughput Screening of Neutralizing Epitopes on HIV Particles" *Cell Chemical Biology*, 24:6 (2017): 751-757.e3. Web. 25 May 2017.
- Christensen, Devin E et al. "Reconstitution and visualization of HIV-1 capsid-dependent replication and integration in vitro." *Science (New York, N.Y.)* vol. 370,6513 (2020): eabc8420. doi:10.1126/science.abc8420
- Cisneros, Irma E., et al. "Methamphetamine Activates Trace Amine Associated Receptor 1 to Regulate Astrocyte Excitatory Amino Acid Transporter-2 via Differential CREB Phosphorylation During HIV-Associated Neurocognitive Disorders." *Frontiers in Neurology*, vol. 11, 25 Nov. 2020, doi:10.3389/fneur.2020.593146.

- Cong L, Sugden SM, Leclair P, Lim CJ, Pham TNQ, Cohen EA. 2021. HIV-1 Vpu promotes phagocytosis of infected CD41 T cells by macrophages through downregulation of CD47. *mBio* 12:e01920-21. <https://doi.org/10.1128/mBio.01920-21>
- Dahal, S.; Cheng, R.; Cheung, P.K.; Been, T.; Maly, R.; Geng, M.; Manianis, S.; Shkreta, L.; Jahanshahi, S.; Toutant, J.; et al. The Thiazole-5-Carboxamide GPS491 Inhibits HIV-1, Adenovirus, and Coronavirus Replication by Altering RNA Processing/Accumulation. *Viruses* 2022, 14, 60. <https://doi.org/10.3390/v14010060>
- Day, Christopher J., et al. "Complement Receptor 3 Mediates HIV-1 Transcytosis across an Intact Cervical Epithelial Cell Barrier: New Insight into HIV Transmission in Women." *MBio*, 2022, <https://doi.org/10.1128/mbio.02177-21>. Accessed 18 Jan. 2022.
- Desimmie, Belete A. et al. "Identification of a Tripartite Interaction between the N-Terminus of HIV-1 Vif and CBF $\beta$  That Is Critical for Vif Function." *Retrovirology* 14 (2017): 19. *PMC*. Web. 29 Aug. 2018.
- Dodagatta-Marri, Eswari et al. "Protein–Protein Interaction between Surfactant Protein D and DC-SIGN *via* C-Type Lectin Domain Can Suppress HIV-1 Transfer." *Frontiers in Immunology* 8 (2017): 834. *PMC*. Web. 29 Aug. 2018.
- Falkenhagen, Alexander et al. "Control of HIV Infection In Vivo Using Gene Therapy with a Secreted Entry Inhibitor." *Molecular Therapy. Nucleic Acids* 9 (2017): 132–144. *PMC*. Web. 29 Aug. 2018.
- Farsam, Vida et al. "Senescent fibroblast-derived Chemerin promotes squamous cell carcinoma migration." *Oncotarget* vol. 7,50 (2016): 83554-83569. doi:10.18632/oncotarget.13446
- García-Crespo, K., et al. "Restricted HIV-1 Replication in Placental Macrophages Is Caused by Inefficient Viral Transcription." *Journal of Leukocyte Biology*, vol. 87, no. 4, 30 Dec. 2009, pp. 633–636., <https://doi.org/10.1189/jlb.0809556>.
- Garg, Ravendra et al. "Comparison of various radioactive payloads for a human monoclonal antibody to glycoprotein 41 for elimination of HIV-infected cells." *Nuclear medicine and biology* vol. 82-83 (2020): 80-88. doi:10.1016/j.nucmedbio.2020.02.009
- Holm, C., Rahbek, S., Gad, H. et al. Influenza A virus targets a cGAS-independent STING pathway that controls enveloped RNA viruses. *Nat Commun* 7, 10680 (2016). <https://doi.org/10.1038/ncomms10680>

- Ji, Haiyan, et al. "Zinc-Finger Nucleases Induced by HIV-1 Tat Excise HIV-1 from the Host Genome in Infected and Latently Infected Cells" *Molecular Therapy-Nucleic Acids* 12 (2018) 67-74. Elsevier. Web. 3 May 2018.
- Kang, R., Zhou, Y., Tan, S. *et al.* Mesenchymal stem cells derived from human induced pluripotent stem cells retain adequate osteogenicity and chondrogenicity but less adipogenicity. *Stem Cell Res Ther* 6, 144 (2015). <https://doi.org/10.1186/s13287-015-0137-7>
- Li, Xiaoyu, et al. "Functional Analysis of the Two Cytidine Deaminase Domains in APOBEC3G." *Virology*, vol. 414, no. 2, 18 Mar. 2011, pp. 130–136., doi:10.1016/j.virol.2011.03.014.
- Liu, Yang, et al. "The roles of five conserved lentiviral RNA structures in HIV-1 replication" *Virology* 515 (2018): 1-8. Elsevier. Web. 9 Nov. 2017.
- Lodge, Robert et al. "Regulation of CD4 Receptor and HIV-1 Entry by MicroRNAs-221 and -222 during Differentiation of THP-1 Cells." *Viruses* 10.1 (2018): 13. PMC. Web. 29 Aug. 2018.
- Maiti, Atanu et al. "Crystal Structure of the Catalytic Domain of HIV-1 Restriction Factor APOBEC3G in Complex with ssDNA." *Nature Communications* 9 (2018): 2460. PMC. Web. 29 Aug. 2018.
- Mao, H., Chen, H., Fesseha, Z. *et al.* Identification of novel host-oriented targets for Human Immunodeficiency Virus type 1 using Random Homozygous Gene Perturbation. *Virol J* 6, 154 (2009). <https://doi.org/10.1186/1743-422X-6-154>
- Munsaka, Sody M., et al. "Characteristics of Activated Monocyte Phenotype Support R5-Tropic Human Immunodeficiency Virus." *Immunology and Immunogenetics Insights*, vol. 1, 2009, <https://doi.org/10.4137/iii.s2011>.
- B. Olety, P. Peters, Y. Wu, Y. Usami, H. Göttliger, HIV-1 propagation is highly dependent on basal levels of the restriction factor BST2. *Sci. Adv.* 7, eabj7398 (2021).
- Pandit, Hrishikesh, et al. "Surfactant Protein D Inhibits HIV-1 Infection of Target Cells via Interference with gp120-CD4 Interaction and Modulates Pro-Inflammatory Cytokine Production." *PLoS ONE*, vol. 9, no. 7, 2014, doi:10.1371/journal.pone.0102395. Accessed 7 May 2021.
- Park, K.H., Kim, M., Bae, S.E. *et al.* Study on suitable analysis method for HIV-1 non-catalytic integrase inhibitor. *Virol J* 18, 17 (2021). <https://doi.org/10.1186/s12985-020-01476-x>

Park, Seong-Hyun et al. "Investigation of Functional Roles of Transcription Termination Factor-1 (TTF-I) in HIV-1 Replication." *BMB Reports* 51.7 (2018): 338–343. *PMC*. Web. 29 Aug. 2018.

Pednekar, Lina, et al. "Complement Protein C1q Interacts with DC-SIGN via Its Globular Domain and Thus May Interfere with HIV-1 Transmission." *Frontiers in Immunology*, vol. 7, 22 Dec. 2016, doi:10.3389/fimmu.2016.00600.

Perrone, Rosalba, et al. "The G-Quadruplex-Forming Aptamer AS1411 Potently Inhibits HIV-1 Attachment to the Host Cell." *International Journal of Antimicrobial Agents*, vol. 47, no. 4, Apr. 2016, pp. 311–316., doi:10.1016/j.ijantimicag.2016.01.016.

Ramesh, D., Mohanty, A. K., De, A., Vijayakumar, B. G., Sethumadhavan, A., Muthuvel, S. K., Mani, M., & Kannan, T. (2022). Uracil derivatives as HIV-1 capsid protein inhibitors: Design, *in silico*, *in vitro* and cytotoxicity studies. *RSC Advances*, 12(27), 17466–17480. <https://doi.org/10.1039/d2ra02450k>

Rawson, Jonathan M., et al. "Transcription Start Site Heterogeneity and Preferential Packaging of Specific Full-Length RNA Species Are Conserved Features of Primate Lentiviruses." *Microbiology Spectrum*, 23 June 2022, <https://doi.org/10.1128/spectrum.01053-22>. Accessed 28 June 2022.

Richard, Khumoekae et al. "Identification of Novel HIV-1 Latency-Reversing Agents from a Library of Marine Natural Products." *Viruses* 10.7 (2018): 348. *PMC*. Web. 29 Aug. 2018.

Rosario-Rodríguez, Lester J et al. "Dimethyl Fumarate Prevents HIV-Induced Lysosomal Dysfunction and Cathepsin B Release from Macrophages." *Journal of neuroimmune pharmacology : the official journal of the Society on NeuroImmune Pharmacology* vol. 13,3 (2018): 345-354. doi:10.1007/s11481-018-9794-5

Rouf Banday, A., Onabajo, O.O., Lin, S.HY. *et al.* Targeting natural splicing plasticity of APOBEC3B restricts its expression and mutagenic activity. *Commun Biol* 4, 386 (2021). <https://doi.org/10.1038/s42003-021-01844-5>

Roy, Chandra N., et al. "CG Dinucleotide Removal in Bioluminescent and Fluorescent Reporters Improves HIV-1 Replication and Reporter Gene Expression for Dual Imaging in Humanized Mice." *Journal of Virology*, 7 July 2021, doi:10.1128/jvi.00449-21.

Saulle, Irma,; Ibba, Salomè Valentina,; Vittori, Cecilia; Fenizia, Claudio; Mercurio, Vincenzo; Vichi, Francesca; Caputo, Sergio Lo; Trabattoni, Daria; Clerici, Mario; Biasin, Mara Sterol metabolism modulates susceptibility to HIV-1 Infection, *AIDS*: September 1, 2020 - Volume 34 - Issue 11 - p 1593-1602

Singh, Gatikrushna, et al. "HIV-1 Hypermethylated Guanosine Cap Licenses Specialized Translation Unaffected by Mtor." *Proceedings of the National Academy of Sciences*, vol. 119, no. 1, 2021, <https://doi.org/10.1073/pnas.2105153118>. Accessed 4 Jan. 2022.

Skipper, Kristian Alsbjerg et al. "Time-Restricted PiggyBac DNA Transposition by Transposase Protein Delivery Using Lentivirus-Derived Nanoparticles." *Molecular Therapy. Nucleic Acids* 11 (2018): 253–262. *PMC*. Web. 29 Aug. 2018.

Spillings, B. L., Day, C. J., Garcia-Minambres, A., Aggarwal, A., Condon, N. D., Haselhorst, T., Purcell, D. F. J., Turville, S. G., Stow, J. L., Jennings, M. P., & Mak, J. (2022). Host glycoalyx captures HIV proximal to the cell surface via oligomannose-glcnac glycan-glycan interactions to support viral entry. *Cell Reports*, 38(5), 110296. <https://doi.org/10.1016/j.celrep.2022.110296>

Sugden, Scott M., Tram N. Q. Pham, and Éric A. Cohen. "HIV-1 Vpu Downmodulates ICAM-1 Expression, Resulting in Decreased Killing of Infected CD4<sup>+</sup>T Cells by NK Cells." Ed. Wesley I. Sundquist. *Journal of Virology* 91.8 (2017): e02442–16. *PMC*. Web. 29 Aug. 2018.

Terry, Sandra N., et al. "Expression of HERV-K108 Envelope Interferes with HIV-1 Production." *Virology*, vol. 509, Sept. 2017, pp. 52–59., doi:10.1016/j.virol.2017.06.004.

Terzieva, Velislava I., et al. "IFN- $\gamma$  Attenuates Spontaneous Lymphocyte Proliferation by Fuelling Regulatory T Cells in HIV-1-Infected Patients." *Viral Immunology*, vol. 30, no. 3, 1 Apr. 2017, pp. 157–166., doi:10.1089/vim.2016.0075.

Upadhyay, Chitra, et al. "Alterations of HIV-1 envelope phenotype and antibody-mediated neutralization by signal peptide mutations" *PLOS Pathogens* 14:1 (2018) e1006812. *PubMed Central*, doi: 10.1371/journal.ppat.1006812.

Vernekar, Vandana et al. "Evaluation of cystatin C activities against HIV." *The Indian journal of medical research* vol. 141,4 (2015): 423-30. doi:10.4103/0971-5916.159282

Vogiatzis, S.; Celestino, M.; Trevisan, M.; Magro, G.; Del Vecchio, C.; Erdengiz, D.; Palù, G.; Parolin, C.; Maguire-Zeiss, K.; Calistri, A. Lentiviral Vectors Expressing Chimeric NEDD4 Ubiquitin Ligases: An Innovative Approach for Interfering with Alpha-Synuclein Accumulation. *Cells* 2021, 10, 3256. <https://doi.org/10.3390/cells10113256>

Wang, Tong, et al. "Establishment and evaluation of a general dissociation technique for antibodies in circulating immune complexes" *Clinical and Experimental Medicine* (2019): 65-75. *PubMed Central*, doi: 10.1007/s10238-018-0523-4.

Wei, Wei, et al. "Accumulation of MxB/Mx2-Resistant HIV-1 Capsid Variants During Expansion of the HIV-1 Epidemic in Human Populations." *EBioMedicine*, vol. 8, June 2016, pp. 230–236., doi:10.1016/j.ebiom.2016.04.020.

Wholey, Wei-Yun, et al. "Site-Specific and Stable Conjugation of the SARS-COV-2 Receptor-Binding Domain to Liposomes in the Absence of Any Other Adjuvants Elicits Potent Neutralizing Antibodies in BALB/C Mice." *Bioconjugate Chemistry*, 14 Nov. 2021, <https://doi.org/10.1021/acs.bioconjchem.1c00463>. Accessed 19 Nov. 2021.

Young, George R. et al. "HIV-1 Infection of Primary CD4+ T Cells Regulates the Expression of Specific Human Endogenous Retrovirus HERV-K (HML-2) Elements." Ed. Frank Kirchhoff. *Journal of Virology* 92.1 (2018): e01507–17. *PMC*. Web. 29 Aug. 2018.

Zhang, Y., Ozono, S., Yao, W. *et al.* CRISPR-mediated activation of endogenous BST-2/tetherin expression inhibits wild-type HIV-1 production. *Sci Rep* 9, 3134 (2019). <https://doi.org/10.1038/s41598-019-40003-z>

Ziegler, Samantha J. et al. "Insights into DNA Substrate Selection by APOBEC3G from Structural, Biochemical, and Functional Studies." Ed. Kefei Yu. *PLoS ONE* 13.3 (2018): e0195048. *PMC*. Web. 29 Aug. 2018.

## HIV-1 Integrase Kit (EZ-1700)

Chen, Huan, et al. "Anti-HIV Activities and Mechanism of 12-O-Tricosanoylphorbol-20-acetate, a Novel Phorbol Ester from *Ostodes katharinae*" *Molecules* 22:9 (2017):1498.

Kim, Byung Soo et al. "Identification of a novel type of small molecule inhibitor against HIV-1." *BMB reports* vol. 48,2 (2015): 121-6. doi:10.5483/bmbrep.2015.48.2.239

Nutan et al. "Ellagic acid & gallic acid from *Lagerstroemia speciosa* L. inhibit HIV-1 infection through inhibition of HIV-1 protease & reverse transcriptase activity." *The Indian journal of medical research* vol. 137,3 (2013): 540-8.

Park, K.H., Kim, M., Bae, S.E. *et al.* Study on suitable analysis method for HIV-1 non-catalytic integrase inhibitor. *Virology* 18, 17 (2021). <https://doi.org/10.1186/s12985-020-01476-x>

Rotich, W.; Mas-Claret, E.; Sadgrove, N.; Guantai, A.; Padilla-González, G.F.; Langat, M.K. HIV-1 Integrase Inhibitory Effects of Major Compounds Present in CareVid™: An Anti-HIV Multi-Herbal Remedy. *Life* 2022, 12, 417. <https://doi.org/10.3390/life12030417>

Samarasimhareddy, Mamidi et al. "A Rapid and Efficient Building Block Approach for Click Cyclization of Peptoids." *Frontiers in chemistry* vol. 8 405. 19 May. 2020, doi:10.3389/fchem.2020.00405

Shin, Y., Park, C.M., Kim, H.G. et al. Identification of Aristolactam Derivatives That Act as Inhibitors of Human Immunodeficiency Virus Type 1 Infection and Replication by Targeting Tat-Mediated Viral Transcription. *Viol. Sin.* (2020). <https://doi.org/10.1007/s12250-020-00274-7>

Wadhwa, Pankaj, et al. "Design, Synthesis and In Vitro Evaluation of 4-Oxo-6-Substituted Phenyl- 2-Thioxo1,2,3,4-Tetrahydropyrimidine-5-Carbonitrile Derivatives as HIV Integrase Strand Transfer Inhibitors." *Letters in Drug Design & Discovery*, vol. 18, no. 4, 2021, pp. 387–395., doi:10.2174/1570180817999201022193325.

### **HIV-1 Integrase Antibody (AB-INT100)**

Takahata, Tatsuro et al. "Critical Contribution of Tyr15 in the HIV-1 Integrase (IN) in Facilitating IN Assembly and Nonenzymatic Function through the IN Precursor Form with Reverse Transcriptase." Ed. Karen L. Beemon. *Journal of Virology* 91.1 (2017): e02003–16. *PMC*. Web. 29 Aug. 2018.

### **AB-PEDF**

Daubriac, Julien, et al. "Hormonal and Growth Regulation of Epithelial and Stromal Cells From the Normal and Malignant Endometrium by Pigment Epithelium-Derived Factor." *Endocrinology*, vol. 158, no. 9, 21 June 2017, pp. 2754–2773., doi:10.1210/en.2017-00028.

Gnerlich, J.L., Yao, K.A., Fitchev, P.S. et al. *Ann Surg Oncol* (2013) 20(Suppl 3): 731. <https://doi.org/10.1245/s10434-013-3274-1>

Hazim, Roni A., et al. "Rapid Differentiation of the Human RPE Cell Line, ARPE-19, Induced by Nicotinamide." *Experimental Eye Research*, vol. 179, 15 Oct. 2018, pp. 18–24., doi:10.1016/j.exer.2018.10.009.

Johnen, Sandra, et al. "Antiangiogenic and Neurogenic Activities Of Sleeping Beauty-Mediated PEDF-Transfected RPE Cells In Vitro and In Vivo." *BioMed Research International*, vol. 2015, 1 Dec. 2015, pp. 1–14., doi:10.1155/2015/863845.

Julian, Guilherme Silva, et al. "Chronic Intermittent Hypoxia Increases Encoding Pigment Epithelium-Derived Factor Gene Expression, Although Not That of the Protein Itself, in the Temporal Cortex of Rats." *Jornal Brasileiro De Pneumologia*, vol. 41, no. 1, 2015, pp. 39–47., doi:10.1590/s1806-37132015000100006.

Kanemura, Hoshimi, et al. "Pigment Epithelium-Derived Factor Secreted from Retinal Pigment Epithelium Facilitates Apoptotic Cell Death of iPSC." *Scientific Reports*, vol. 3, no. 1, 1 Aug. 2013, doi:10.1038/srep02334.

Lattier, J.M., Yang, H., Crawford, S. et al. *Clin Exp Metastasis* (2013) 30: 969. <https://doi.org/10.1007/s10585-013-9596-3>

Loegl, Jelena, et al. "Pigment Epithelium-Derived Factor (PEDF): a Novel Trophoblast-Derived Factor Limiting Feto-Placental Angiogenesis in Late Pregnancy." *Angiogenesis*, vol. 19, no. 3, 2016, pp. 373–388., doi:10.1007/s10456-016-9513-x. Accessed 7 June 2021.

Roher, Alex E et al. "Subjects harboring presenilin familial Alzheimer's disease mutations exhibit diverse white matter biochemistry alterations." *American journal of neurodegenerative disease* vol. 2,3 187-207. 18 Sep. 2013

Subramanian, P., et al. "Identification of Pigment Epithelium-Derived Factor Protein Forms with Distinct Activities on Tumor Cell Lines." *Journal of Biomedicine and Biotechnology*, vol. 2012, 4 June 2012, pp. 1–12., doi:10.1155/2012/425907.

Wietecha, Mateusz S., et al. "Pigment Epithelium-Derived Factor as a Multifunctional Regulator of Wound Healing." *American Journal of Physiology-Heart and Circulatory Physiology*, vol. 309, no. 5, 1 Sept. 2015, doi:10.1152/ajpheart.00153.2015.

## **PED613-HUMAN**

Ablonczy, Zsolt, et al. "Human Retinal Pigment Epithelium Cells as Functional Models for the RPE In Vivo." *Investigative Ophthalmology & Visual Science*, vol. 52, no. 12, 3 Nov. 2011, p. 8614., doi:10.1167/iovs.11-8021.

Belinsky, Glenn S., et al. "Pigment Epithelium-Derived Factor Restoration Increases Bone Mass and Improves Bone Plasticity in a Model of Osteogenesis Imperfecta Type VI via Wnt3a Blockade." *The FASEB Journal*, vol. 30, no. 8, 28 Apr. 2016, pp. 2837–2848., doi:10.1096/fj.201500027r.

Bullock, Jeanee, et al. "Expression and Production of Pigment Epithelium-Derived Factor (PEDF) and PEDF Receptor Variants from Mammalian and Bacterial Cells." *Protein Expression and Purification*, vol. 194, 2022, p. 106072. *ScienceDirect*, Elsevier, <https://doi.org/10.1016/j.pep.2022.106072>. Accessed 23 Feb. 2022.

Chen, Y., et al., Pigment epithelium-derived factor (PEDF) regulates metabolism and insulin secretion from acclonal rat pancreatic beta cell line BRIN-BD11 and mouse islets, *Molecular and Cellular Endocrinology* (2016), <http://dx.doi.org/10.1016/j.mce.2016.02.004>

Cruz, P.R.S., et al. "Increased Circulating PEDF and Low SICAM-1 Are Associated with Sickle Cell Retinopathy." *Blood Cells, Molecules, and Diseases*, vol. 54, no. 1, Jan. 2015, pp. 33–37., doi:10.1016/j.bcmd.2014.08.003.

Flores-Bellver, M., Mighty, J., Aparicio-Domingo, S., Li, K., Shi, C., Zhou, J., Cobb, H., McGrath, P., Michelis, G., Lenhart, P., Bilousova, G., Heissel, S., Rudy, M. J., Coughlan, C., Goodspeed, A. E., Becerra, S. P., Redenti, S., & Canto-Soler, M. V. (2021). Extracellular vesicles released by human retinal pigment epithelium mediate increased polarised secretion of drusen proteins in response to AMD stressors. *Journal of Extracellular Vesicles*, e12165. <https://doi.org/10.1002/jev2.12165>

Gvritshvili, Anzor G., et al. "Codon Preference Optimization Increases Heterologous PEDF Expression." *PLoS ONE*, vol. 5, no. 11, 2010, doi:10.1371/journal.pone.0015056.

Ibáñez, Lourdes, et al. "Oral Contraception vs Insulin Sensitization for 18 Months in Nonobese Adolescents With Androgen Excess: Posttreatment Differences in C-Reactive Protein, Intima-Media Thickness, Visceral Adiposity, Insulin Sensitivity, and Menstrual Regularity." *The Journal of Clinical Endocrinology & Metabolism*, vol. 98, no. 5, 1 May 2013, doi:10.1210/jc.2013-1041.

Kuerten, D., Johnen, S., Harmening, N. et al. Transplantation of PEDF-transfected pigment epithelial cells inhibits corneal neovascularization in a rabbit model. *Graefes Arch Clin Exp Ophthalmol* **253**, 1061–1069 (2015). <https://doi.org/10.1007/s00417-015-2954-x>

Lang, Veronika, et al. "Alzheimer's Disease: Elevated Pigment Epithelium-Derived Factor in the Cerebrospinal Fluid Is Mostly of Systemic Origin." *Journal of the Neurological Sciences*, vol. 375, 15 Apr. 2017, pp. 123–128., doi:10.1016/j.jns.2017.01.051.

Leach, Lyndsay L., et al. "Induced Pluripotent Stem Cell-Derived Retinal Pigmented Epithelium: A Comparative Study Between Cell Lines and Differentiation Methods." *Journal of Ocular Pharmacology and Therapeutics*, vol. 32, no. 5, 9 June 2016, pp. 317–330., doi:10.1089/jop.2016.0022.

McHugh, Kevin J., et al. "Porous Poly( $\epsilon$ -Caprolactone) Scaffolds for Retinal Pigment Epithelium Transplantation." *Investigative Ophthalmology & Visual Science*, vol. 55, no. 3, 25 Mar. 2014, p. 1754., doi:10.1167/iovs.13-12833.

Nagineni, Chandrasekharam N, et al. "Resveratrol Suppresses Expression of VEGF by Human Retinal Pigment Epithelial Cells: Potential Nutraceutical for Age-Related Macular Degeneration." *Aging and Disease*, vol. 5, no. 2, 1 Apr. 2014, pp. 88–100., doi:10.14336/ad.2014.050088.

Orgaz, J., Ladhani, O., Hoek, K. *et al.* 'Loss of pigment epithelium-derived factor enables migration, invasion and metastatic spread of human melanoma'. *Oncogene* **28**, 4147–4161 (2009). <https://doi.org/10.1038/onc.2009.284>

Pennington, Britney O., et al. "Defined Culture of Human Embryonic Stem Cells and Xeno-Free Derivation of Retinal Pigmented Epithelial Cells on a Novel, Synthetic Substrate." *STEM CELLS Translational Medicine*, vol. 4, no. 2, 15 Jan. 2015, pp. 165–177., doi:10.5966/sctm.2014-0179.

Pennington, B.O., Bailey, J.K., Faynus, M.A. *et al.* Xeno-free cryopreservation of adherent retinal pigmented epithelium yields viable and functional cells in vitro and in vivo. *Sci Rep* **11**, 6286 (2021). <https://doi.org/10.1038/s41598-021-85631-6>

Ribaux, Pascale, et al. "Malignant Ascites: a Source of Therapeutic Protein against Ovarian Cancer?" *Oncotarget*, vol. 10, no. 57, 15 Oct. 2019, pp. 5894–5905., doi:10.18632/oncotarget.27185.

Roher, Alex E., et al. "Proteomics-Derived Cerebrospinal Fluid Markers of Autopsy-Confirmed Alzheimer's Disease." *Biomarkers*, vol. 14, no. 7, 28 Oct. 2009, pp. 493–501., doi:10.3109/13547500903108423.

Tabur, Suzan, et al. "The Effects of Calcium Channel Blockers on Nephropathy and Pigment Epithelium-Derived Factor in the Treatment of Hypertensive Patients with Type 2 Diabetes Mellitus." *Clinical and Experimental Hypertension*, vol. 37, no. 3, 22 July 2014, pp. 177–183., doi:10.3109/10641963.2014.933964.

Thumann, Gabriele, et al. "Engineering of PEDF-Expressing Primary Pigment Epithelial Cells by the SB Transposon System Delivered by pFAR4 Plasmids." *Molecular Therapy - Nucleic Acids*, vol. 6, 17 Mar. 2017, pp. 302–314., doi:10.1016/j.omtn.2017.02.002.

### **Human PTX-3 ELISA Kit (XPEH0263)**

Tonial, A. F., Nisihara, R., Nassif, P. A., Munhoz, S. I., Cortina, A. G., Gobetti, J. S., Skare, T. "Bariatric surgery results in restoration of physiological plasma levels of pentraxine-3". *Biomedical Reports* **12.2** (2020): 68-72.

## Human Pentosidine ELISA Kit (XPEH3673)

Nisihara, Renato, et al. "Serum Pentosidine Levels in Systemic Lupus Erythematosus." *Practical Laboratory Medicine*, vol. 23, Jan. 2021, <https://doi.org/10.1016/j.plabm.2020.e00197>. Accessed 18 Jan. 2022.

## Human Aromatase ELISA Kits

Bose HS, Whittal RM, Lanier CE, Marshall B, Rajapaksha M, Wheeler BW, Carbo ND, Hahn EM, Perry EW, Hall NM, Melomed MM, Perkins EL, Burak WE. 2021. Regulation of estradiol synthesis by aromatase interacting partner in breast (AIPB). *Mol Cell Biol* 41:e00357-21. <https://doi.org/10.1128/MCB.00357-21>.

## Human NKp30 ELISA Kit (XPEH 4294)

Sato, K., Kumazawa, Y., & Kimura, T. (2022). Effects of acute aerobic exercise and menstrual cycle on immune responses in young women. *Gynecological and Reproductive Endocrinology and Metabolism*, 3(1), 27–21. Retrieved April 1, 2022, from [https://www.researchgate.net/profile/Koji-Sato-7/publication/359414045\\_Effects\\_of\\_acute\\_aerobic\\_exercise\\_and\\_menstrual\\_cycle\\_on\\_immune\\_responses\\_in\\_young\\_women/links/623c00c63818892e0a6c9848/Effects-of-acute-aerobic-exercise-and-menstrual-cycle-on-immune-responses-in-young-women.pdf](https://www.researchgate.net/profile/Koji-Sato-7/publication/359414045_Effects_of_acute_aerobic_exercise_and_menstrual_cycle_on_immune_responses_in_young_women/links/623c00c63818892e0a6c9848/Effects-of-acute-aerobic-exercise-and-menstrual-cycle-on-immune-responses-in-young-women.pdf).

## Human TCF21 ELISA Kit (XPEH 1455)

Zhang X, Huang J, Li J, Lu Q, Huang Y, Lu D, Tang Y, Zhu J, Zhuang J. Association Between TCF21 Gene Polymorphism with the Incidence of Paroxysmal Atrial Fibrillation and the Efficacy of Radiofrequency Ablation for Patients with Paroxysmal Atrial Fibrillation. *Int J Gen Med*. 2022;15:4975-4983  
<https://doi.org/10.2147/IJGM.S366956>

## Human Interleukin ELISA Kits

Liu, YaYun, et al. "Regulatory B Cells Dysregulated T Cell Function in an IL-35-Dependent Way in Patients With Chronic Hepatitis B." *Frontiers in Immunology*, vol. 12, 12 Apr. 2021, doi:10.3389/fimmu.2021.653198.

Zajkowska, Agata, et al. "Evaluation of Chosen Cytokine Levels among Patients with Herpes Zoster as Ability to Provide Immune Response." *PLOS ONE*, vol. 11, no. 3, 2016, doi:10.1371/journal.pone.0150301. Accessed 7 May 2021.

## HDV-IgG

Coller, Kelly E. et al. "Development and Performance of Prototype Serologic and Molecular Tests for Hepatitis Delta Infection." *Scientific Reports* 8 (2018): 2095. *PMC*. Web. 29 Aug. 2018.

## HEV-Ag

Fonti, N.; Pacini, M.I.; Forzan, M.; Parisi, F.; Periccioli, M.; Mazzei, M.; Poli, A. Molecular and Pathological Detection of Hepatitis E Virus in Roe Deer (*Capreolus capreolus*) and Fallow Deer (*Dama dama*) in Central Italy. *Vet. Sci.* 2022, 9, 100. <https://doi.org/10.3390/vetsci9030100>

## Simian Zika Virus (SP856C)

Buechler, Connor R. et al. "Seroprevalence of Zika Virus in Wild African Green Monkeys and Baboons." Ed. John Schoggins. *mSphere* 2.2 (2017): e00392–16. *PMC*. Web. 29 Aug. 2018.

Carroll, Timothy et al. "Zika Virus Preferentially Replicates in the Female Reproductive Tract after Vaginal Inoculation of Rhesus Macaques." Ed. Ted C. Pierson. *PLoS Pathogens* 13.7 (2017): e1006537. *PMC*. Web. 29 Aug. 2018.

Coffey, Lark L., et al. "Intraamniotic Zika virus inoculation of pregnant rhesus macaques produces fetal neurologic disease" *Nature Communications* 9:2414 (2018). *Pub Med Central*, doi: 10.1038/s41467-018-04777-6.

Gurung, Sunam, et al. "Zika Virus Infection at Mid-Gestation Results in Fetal Cerebral Cortical Injury and Death in the Olive Baboon" *BioRxiv* (2018). Web. Doi: 10.1101/331108.

Gurung, S., Reuter, D., Norris, A., Dubois, M., Maxted, M., Singleton, K., Castillo-Castrejon, M., Papin, J. F., & Myers, D. A. (2022). Early and mid-gestation Zika virus (ZIKV) infection in the olive baboon (*papio anubis*) leads to fetal CNS pathology by term gestation. <https://doi.org/10.1101/2022.02.23.481575>

Peregrine, Jamie, et al. "Zika Virus Infection, Reproductive Organ Targeting, and Semen Transmission in the Male Olive Baboon." *Journal of Virology*, vol. 94, no. 1, 12 Dec. 2019, doi:10.1128/jvi.01434-19.

Rayner, Jonathan O., et al. "Comparative Pathogenesis of Asian and African-Lineage Zika Virus in Indian Rhesus Macaque's and Development of a Non-Human Primate Model Suitable for the Evaluation of New Drugs and Vaccines" *Viruses* 10:5 (2018) 229. *PubMed Central*, doi: 10.3390/v10050229.

## Simian WNV (SP807C)

Beckman, Danielle, et al. "Neuroanatomical Abnormalities in a Nonhuman Primate Model of Congenital Zika Virus Infection." *ELife*, vol. 11, 9 Mar. 2022, <https://doi.org/10.7554/elife.64734>.

Coffey, Lark L. et al. "Zika Virus Tissue and Blood Compartmentalization in Acute Infection of Rhesus Macaques." Ed. Karol Sestak. *PLoS ONE* 12.1 (2017): e0171148. *PMC*. Web. 29 Aug. 2018.

Peregrine J, Gurung S, Lindgren MC, Husain S, Zavy MT, Myers DA, Papin JF. 2020. Zika virus infection, reproductive organ targeting, and semen transmission in the male olive baboon. *J Virol* 94:e01434-19. <https://doi.org/10.1128/JVI.01434-19>

Robbiani, Davide F., et al. "Risk of Zika Microcephaly Correlates with Features of Maternal Antibodies." *Journal of Experimental Medicine*, vol. 216, no. 10, 2019, pp. 2302–2315., doi:10.1084/jem.20191061.

### **SIV p27 (SK845)**

Castro, Edison, et al. "Characterization of New CationicN,N-Dimethyl[70]Fulleropyrrolidinium Iodide Derivatives as Potent HIV-1 Maturation Inhibitors." *Journal of Medicinal Chemistry*, vol. 59, no. 24, 17 Nov. 2016, pp. 10963–10973., doi:10.1021/acs.jmedchem.6b00994.

Couturier, J., Agarwal, N., Nehete, P.N. *et al.* Infectious SIV resides in adipose tissue and induces metabolic defects in chronically infected rhesus macaques. *Retrovirology* **13**, 30 (2016). <https://doi.org/10.1186/s12977-016-0260-2>

Liu, J B et al. "Epigallocatechin-3-gallate local pre-exposure application prevents SHIV rectal infection of macaques." *Mucosal immunology* vol. 11,4 (2018): 1230-1238. doi:10.1038/s41385-018-0025-4

### **SARS-CoV-2 Spike Microplate (SP864C)**

Yee, JL, Van Rompay, KKA, Carpenter, AB, et al. SARS-CoV-2 surveillance for a non-human primate breeding research facility. *J Med Primatol*. 2020; 49: 322– 331. <https://doi.org/10.1111/jmp.12483>

### **Misc. Simian ELISA**

Gupta G, et al., Physicochemical characterization and immunological properties of Pichia pastoris based HPV16L1 and 18L1 virus like particles, *Biologicals* (2016), <http://dx.doi.org/10.1016/j.biologicals.2016.12.002>

Nicole Marzan-Rivera, Crisanta Serrano-Collazo, Lorna Cruz et al. Infection order outweighs the role of CD4+ T cells in tertiary flavivirus infection, 20 January 2022, PREPRINT (Version 1) available at Research Square [<https://doi.org/10.21203/rs.3.rs-1220220/v1>]

## **Mouse CD4 (XPEM 0912)**

Kumar, Vasantha H.S., et al. "Adaptive immune responses are altered in adult mice following neonatal hyperoxia" *Physiology Reports* 6:2 (2018) e13577. *PubMed Central*, doi: 10.14814/phy2.13577.

## **Mouse Anti- Tetanus Toxoid (IM-202)**

Kihl P, Krych L, Deng L, Hansen LH, Buschard K, et al. (2022) Effect of gluten-free diet and antibiotics on murine gut microbiota and immune response to tetanus vaccination. *PLOS ONE* 17(4): e0266719. <https://doi.org/10.1371/journal.pone.0266719>

Mitchell, Duane A. et al. "Tetanus Toxoid and CCL3 Improve DC Vaccines in Mice and Glioblastoma Patients." *Nature* 519.7543 (2015): 366–369. *PMC*. Web. 29 Aug. 2018.

## **Mouse Hanta (595-460C)**

Hamdan, Nur Elfieyra Syazana et al. "Rodent Species Distribution and Hantavirus Seroprevalence in Residential and Forested Areas of Sarawak, Malaysia." *Tropical Life Sciences Research* 28.1 (2017): 151–159. *PMC*. Web. 29 Aug. 2018.

## **Mouse TMEV (595-430C)**

Modica, Claire M. et al. "Effect of Teriflunomide on Cortex-Basal Ganglia-Thalamus (CxBGTh) Circuit Glutamatergic Dysregulation in the Theiler's Murine Encephalomyelitis Virus Mouse Model of Multiple Sclerosis." Ed. Ralf A. Linker. *PloS ONE* 12.8 (2017): e0182729. *PMC*. Web. 29 Aug. 2018.

Pol, Suyog, et al. "Teriflunomide's Effect on Glia in Experimental Demyelinating Disease: A Neuroimaging and Histologic Study." *Journal of Neuroimaging*, vol. 29, no. 1, 19 Sept. 2018, pp. 52–61., doi:10.1111/jon.12561.

Wang, T., Zhang, M., Zhou, H. et al. Establishment and evaluation of a general dissociation technique for antibodies in circulating immune complexes. *Clin Exp Med* **19**, 65–75 (2019). <https://doi.org/10.1007/s10238-018-0523-4>

Yuan, Wen et al. "Development of a duplex real-time RT-PCR for the simultaneous detection and differentiation of Theiler's murine encephalomyelitis virus and rat theilovirus." *Journal of virological methods* vol. 236 (2016): 139-146. doi:10.1016/j.jviromet.2016.07.004

## **Mouse Bordetella Hinzii (595-470C)**

Darrah, R et al. "Cystic Fibrosis Mice Develop Spontaneous Chronic *Bordetella* Airway Infections." *Journal of infectious pulmonary diseases* vol. 3,2 (2017): 10.16966/2470-3176.128. doi:10.16966/2470-3176.128

Litman, P.M., Day, A., Kelley, T.J. et al. Serum inflammatory profiles in cystic fibrosis mice with and without *Bordetella pseudohinzii* infection. *Sci Rep* **11**, 17535 (2021). <https://doi.org/10.1038/s41598-021-97033-9>

## **Mouse Motilin, Mouse Somatostatin**

Piao, Xuehua, et al. "1-Deoxynojirimycin (DNJ) Ameliorates Indomethacin-Induced Gastric Ulcer in Mice by Affecting NF-kappaB Signaling Pathway" *Frontiers in Pharmacology* 9 (2018): 372. *PubMed Central*, doi: 10.3389/fphar.2018.00372.

## **Mouse Reovirus Type 3 (595-434C)**

Fingas, Felix, et al. "Detection of mammalian orthoreovirus type-3 (Reo-3) infections in mice based on serotype-specific hemagglutination protein sigma-1" *Virology Journal* 15:114 (2018). *PubMed Central*, doi: 10.1186/s12985-018-1021-8.

## **Mouse IFN-Gamma**

Carvalho, M.F.M.S.d., Cavalieri, D., Do Nascimento, S. et al. Cytokines Levels and Salivary Microbiome Play A Potential Role in Oral Lichen Planus Diagnosis. *Sci Rep* **9**, 18137 (2019). <https://doi.org/10.1038/s41598-019-54615-y>

## **Mouse LCMV Kit (IM-698)**

Fornůsková A, Hladlovská Z, Macholán M, Piálek J, Goüy de Bellocq J. New perspective on the geographic distribution and evolution of lymphocytic choriomeningitis virus, central Europe. *Emerg Infect Dis.* 2021 Oct [date cited]. <https://doi.org/10.3201/eid2710.210224>

## **Various Mouse and Rat Pathogens**

Hongyan, Song, et al. "Detection of ECTV, MHV and SV in Clean-grade Mice and Rats in East China" *Animal Husbandry and Feed Science* 9:1 (2017) 41-43. Print.

Srinivasan, M.R., et al. "Non-Invasive Fecal Based PCR Assays for Detection of Mouse Parvo Virus and Minute Virus of Mice in Laboratory Mice." *Indian Journal of Animal Research*, 4 Apr. 2020, <https://doi.org/10.18805/ijar.b-4253>.

### **Total Bilirubin**

Amin MM, Ahmed RF, Saleh DO. Methionine and Choline Deficient Diet-induced Non-Alcoholic Steatohepatitis in Rats: Role of Melatonin on Brain Derived Neurotrophic Factor. *J App Pharm Sci*, 2017; 7 (09): 012-019.

### **Guinea Pig CMV (595-161C)**

Bierle, Craig J. et al. "Assessing Zika Virus Replication and the Development of Zika-Specific Antibodies after a Mid-Gestation Viral Challenge in Guinea Pigs." Ed. Pierre Roques. *PloS ONE* 12.11 (2017): e0187720. *PMC*. Web. 29 Aug. 2018.

Coleman, Stewart, et al. "Viral Glycoprotein Complex Formation, Essential Function and Immunogenicity in the Guinea Pig Model for Cytomegalovirus." *PLOS ONE*, vol. 10, no. 8, 12 Aug. 2015, doi:10.1371/journal.pone.0135567.

### **Nexttec Fish Tissue Kit**

Brett Bowersox, Thea Wickersham, Laura Redfield & Michael W. Ackerman (2016) The Genetic Relationship between Anadromous and Resident *Oncorhynchus mykiss* at a Putative Barrier with Implications for Habitat Improvement, *Transactions of the American Fisheries Society*, 145:2, 305-318, DOI: 10.1080/00028487.2015.1115429

Delomas, T.A., Gomelsky, B., Vu, N., Campbell, M.R. and Novelo, N.D. (2019), Single-Nucleotide Polymorphism Discovery and Genetic Variation in YY-Male and Mixed-Sex Strains of Nile Tilapia Available in the United States. *North Am J Aquaculture*, 81: 183-188. <https://doi.org/10.1002/naaq.10085>

John Hargrove, Jesse McCane, Curtis Roth, et al. Mating systems and predictors of relative reproductive success in a cutthroat trout subspecies of conservation concern. *Authorea*. December 09, 2020.

Kendra R. Eaton & Kurt A. Tardy (2022) Anadromy efficacy of native kokanee in Alturas Lake, Idaho, Lake and Reservoir Management, DOI: [10.1080/10402381.2022.2026541](https://doi.org/10.1080/10402381.2022.2026541)

Matala, Andrew P., et al. "Relative Contributions of Neutral and Non-Neutral Genetic Differentiation to Inform Conservation of Steelhead Trout across Highly Variable Landscapes." *Evolutionary Applications*, vol. 7, no. 6, 27 June 2014, pp. 682–701., doi:10.1111/eva.12174.

Mussmann, Steven M., et al. "Rapid Molecular Determination of Sex for Western North American Chub ( *Gila Spp.*)." *North American Journal of Fisheries Management*, 2021, <https://doi.org/10.1002/nafm.10717>. Accessed 19 Nov. 2021.

Steele, Craig A. et al. "Single-parentage assignments reveal negative-assortative mating in an endangered salmonid." *Ecology and Evolution* vol. 12,4 e8846. 25 Apr. 2022, doi:10.1002/ece3.8846

Vu, N.V., Eardley, D.L., Delomas, T.A. *et al.* Identification of sex-specific SNPS in burbot *Lota lota* using RAD sequencing: conservation and management applications. *Fish Aquatic Sci* **22**, 18 (2019). <https://doi.org/10.1186/s41240-019-0133-4>

Whitlock, Steven L., et al. "Using Genetic and Phenotypic Comparisons to Evaluate Apparent Segregation among Kokanee Spawning Groups." *Transactions of the American Fisheries Society*, vol. 147, no. 1, 2018, pp. 43–60., doi:10.1002/tafs.10017.

### **Rabbit E. Cuniculi ELISA Plate (595-521C)**

Ozkan, Ozcan, et al. "First Molecular Evidence of Ocular Transmission of Encephalitozoonosis during the Intrauterine Period in Rabbits." *Parasitology International*, vol. 71, Aug. 2019, pp. 1–4., doi:10.1016/j.parint.2019.03.006.

### **Cholesterol and Triglyceride Assays**

Aborehab, Nora M., et al. "Resistin Mediates Tomato and Broccoli Extract Effects on Glucose Homeostasis in High Fat Diet-Induced Obesity in Rats." *BMC Complementary and Alternative Medicine*, vol. 16, no. 1, 18 July 2016, doi:10.1186/s12906-016-1203-0.

Choi, Ho Joong, et al. "Efficacy and Safety of a Novel Topical Agent for Gallstone Dissolution: 2-Methoxy-6-Methylpyridine." *Journal of Translational Medicine*, vol. 17, no. 1, 10 June 2019, doi:10.1186/s12967-019-1943-y.

Ichim, Thomas E., et al. "Experimental Support for the Effects of a Probiotic/Digestive Enzyme Supplement on Serum Cholesterol Concentrations and the Intestinal Microbiome." *Journal of Translational Medicine*, vol. 14, no. 1, 22 June 2016, doi:10.1186/s12967-016-0945-2.

McElroy, Anita K., et al. "Macrophage Activation Marker Soluble CD163 Associated with Fatal and Severe Ebola Virus Disease in Humans<sup>1</sup>." *Emerging Infectious Diseases*, vol. 25, no. 2, 16 Jan. 2019, pp. 290–298., doi:10.3201/eid2502.181326.



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### **Viral Nucleic Acid Release Kit**

Chen, Vicky et al. "Herpesviruses in abscesses and cellulitis of endodontic origin." *Journal of endodontics* vol. 35,2 (2009): 182-8. doi:10.1016/j.joen.2008.11.018

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