

## **HIV-1 p24 ELISA Kit (XB-1000) Citations**

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

Alvarez N, Gonzalez SM, Hernandez JC, Rugeles MT, Aguilar-Jimenez W (2022) Calcitriol decreases HIV-1 transfer *in vitro* from monocyte-derived dendritic cells to CD4 + T cells, and downregulates the expression of DC-SIGN and SIGLEC-1. *PLoS ONE* 17(7): e0269932. <https://doi.org/10.1371/journal.pone.0269932>

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>

Bruder MR, Aucoin MG. Evaluation of Virus-Free Manufacture of Recombinant Proteins Using CRISPR-Mediated Gene Disruption in Baculovirus-Infected Insect Cells. *Vaccines*. 2023; 11(2):225. <https://doi.org/10.3390/vaccines11020225>

- Cabral-Piccin MP, Papagno L, Lahaye X, Perdomo-Celis F, Volant S, White E, Monceaux V, Llewellyn-Lacey S, Fromentin R, Price DA, Chomont N, Manel N, Saez-Cirion A, Appay V. Primary role of type I interferons for the induction of functionally optimal antigen-specific CD8+ T cells in HIV infection. *EBioMedicine*. 2023 Apr 12;91:104557. doi: 10.1016/j.ebiom.2023.104557. Epub ahead of print. PMID: 37058769.
- 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.
- Clark KM, Kim JG, Wang Q, Gao H, Presti RM, Shan L. Chemical inhibition of DPP9 sensitizes the CARD8 inflammasome in HIV-1-infected cells. *Nat Chem Biol*. 2022 Nov 10. doi: 10.1038/s41589-022-01182-5. Epub ahead of print. PMID: 36357533.
- 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>

Lai KK, Munro JB, Shi G, Majdoul S, Compton AA, Rein A. Restriction of Influenza A Virus by SERINC5. *mBio*. 2022 Nov 21:e0292322. doi: 10.1128/mbio.02923-22. Epub ahead of print. PMID: 36409124.

Lan, Jie, et al. "Cell-to-cell transmission of HIV-1 from provirus-activated cells to resting naïve and memory human primary CD4 T cells is highly efficient and requires CD4 and F-actin but not chemokine receptors" *Virology*, <https://onlinelibrary.wiley.com/doi/pdf/10.1002/jmv.28005>

[Legrand, Alexander, et al. The inflammatory and tumor suppressor SAMD9L acts through a Schlafen-like box to restrict HIV and inhibit cell translation in SAAD/ATXPC. bioRxiv. 19 January 2023. https://doi.org/10.1101/2023.01.19.524725.](https://doi.org/10.1101/2023.01.19.524725)

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. *Virology* **6**, 154 (2009). <https://doi.org/10.1186/1743-422X-6-154>

[Mortazavi, M., et al. "SARS-CoV-2 pseudotyped virus persists on the surface of multiple produce but can be inactivated with gaseous ozone." \*Heliyon\* Volume 8, Issue 8, August 2022, e10280. https://doi.org/10.1016/j.heliyon.2022.e10280](https://doi.org/10.1016/j.heliyon.2022.e10280)

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>.

Olety B, P. Peters, Y. Wu, Y. Usami, H. Göttlinger, HIV-1 propagation is highly dependent on basal levels of the restriction factor BST2. *Sci. Adv.* 7, eabj7398 (2021).

Olety B, Usami Y, Wu Y, Peters P, Göttlinger H. AP-2 Adaptor Complex-Dependent Enhancement of HIV-1 Replication by Nef in the Absence of the Nef/AP-2 Targets SERINC5 and CD4. *mBio*. 2023 Jan 9:e0338222. doi: 10.1128/mbio.03382-22. Epub ahead of print. PMID: 36622146.

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. *Virology* **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.

Peres C, Sellitto C, Nardin C, Putti S, Orsini T, Di Pietro C, Marazziti D, Vitiello A, Calistri A, Rigamonti M, Scavizzi F, Raspa M, Zonta F, Yang G, White TW, Mammano F. Antibody gene transfer treatment drastically improves epidermal pathology in a keratitis ichthyosis deafness syndrome model using male mice. *EBioMedicine*. 2023 Feb 1;89:104453. doi: 10.1016/j.ebiom.2023.104453. Epub ahead of print. PMID: 36736132.

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. "Adaptation of HIV-1/HIV-2 Chimeras with Defects in Genome Packaging and Viral Replication" *mBio*, 29 August 2022, <https://doi.org/10.1128/mbio.02220-22>

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.

Taus, E. A. (2022). Defining Antiviral T Cell Responses Elicited by Vaccines versus Infection in HIV-1 and in SARS-CoV-2. *UCLA*. ProQuest ID: Taus\_ucla\_0031D\_21172. Merritt ID: ark:/13030/m5gn5gg7. Retrieved from <https://escholarship.org/uc/item/4cz5w8ns>

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.

Thomsen EA, Skipper KA, Andersen S, Haslund D, Skov TW, Mikkelsen JG, CRISPR/Cas9-directed gene tagging using a single integrase-defective lentiviral vector carrying a transposase-based Cas9 off switch, *Molecular Therapy: Nucleic Acid* (2022), doi: <https://doi.org/10.1016/j.omtn.2022.08.005>

Tietjen I, Schonhofer C, Sciorillo A, Naidu ME, Haq Z, Kannan T, Kossenkov AV, Rivera-Ortiz J, Mounzer K, Hart C, Gyampoh K, Yuan Z, Beattie KD, Rali T, Shuda McGuire K, Davis RA, Montaner LJ. The Natural Stilbenoid (-)-Hopeaphenol Inhibits HIV Transcription by Targeting Both PKC and NF- $\kappa$ B Signaling and Cyclin-Dependent Kinase 9. *Antimicrob Agents Chemother*. 2023 Mar 28:e0160022. doi: 10.1128/aac.01600-22. Epub ahead of print. PMID: 36975214.

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. "Mechanisms of neutralizing antibody response probed using synthetic virus-like structures" *bioRxiv* 2023.02.20.529089; doi: <https://doi.org/10.1101/2023.02.20.529089>





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. *Virology*. (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.

