CURRICULUM VITAE

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Employment

2021-present: Associate professor in Neurovirology, Laboratory of Virology, Faculty of Veterinary Medicine, Ghent University, Belgium.

2020-2021: Senior Postdoctoral Researcher FWO Project, Laboratory of Virology (Nauwynck lab), Faculty of Veterinary Medicine, Ghent University, Belgium.

2016-2020: Postdoctoral Researcher and Lecturer, Department of Molecular Biology (Enquist lab), Princeton University, Princeton, USA.

Education

2011-2015: PhD in Veterinary Science, Faculty of Veterinary Medicine, Laboratory of Virology, University of Ghent, Belgium. Promoter: Prof. Hans Nauwynck. PhD title: Equine CD172a^{+} monocytic cells, "the Trojan horse" for equine herpesvirus type 1 (EHV-1) dissemination in the horse.

2010: Master 2 Fundamental Virology, Pasteur Institute, Paris, France.
01/2011 – 08/2011: Master thesis at the Imperial College, London, UK. Promoter: Prof. Geoffrey Smith. Thesis title: Characterization of vaccinia virus entry and spread mechanisms.

2009: **Master 1 Virology/Immunology**, University Paris Diderot/Pasteur Institute, Paris, France.
01/2010 – 08/2010: Semester Project at the ETH Zurich, Switzerland. Promoter: Prof. Ari Helenius. Thesis title: Role of the pH in the Uukuniemi virus fusion mediated by the glycoproteins Gn and Gc.

2007-2009: Bachelor of Science in Biology, University of Tours, France. Specialty Biochemistry and Virology.
06/2008 – 07/2008: Internship in Immunology at Bretonneau Hospital, Tours, France. Promoter: Prof. Velge-Roussel: Dendritic cells and transplants. Assisted a Ph.D. of Immunology with collecting data on transplants.

University teaching

2019-2020: Teaching **Molecular Virology** for graduate and undergraduate students, Princeton University, Princeton, USA. Course code MOL559, responsible Prof. Lynn Enquist.

2018-2019: Teaching **Molecular and Cellular Immunology** for graduate and undergraduate students, Princeton University, Princeton, USA. Course code MOL340, responsible Prof. Alexander Ploss.

2016-2017: Teaching **Molecular Biology** for graduate and undergraduate students, Princeton University, Princeton, USA. Course code MOLJIW, responsible Prof. Thomas Silhavy.

2011-2015: Teaching **Diagnosis of Equine Viruses** at the Faculty of Veterinary Medicine, Ghent University,

Belgium. Responsible Prof. Hans Nauwynck.

Evaluation committees

2022: PhD defense jury member of Dr. Jonas Delva for his PhD thesis: Unraveling the interactions between pseudorabies virus and plasmacytoid dendritic cells. Faculty of Veterinary Medicine, Ghent University, Belgium.

2019: PhD defense jury member of Dr. Katrien Poelaert for her PhD thesis: Immune-metabolic factors mediate the pathogenesis of equine herpesvirus 1: an evolutionary pas-de-deux. Faculty of Veterinary Medicine, Ghent University, Belgium.

2018: PhD defense jury member of Dr. Jolien Van Cleemput for her PhD thesis: The horse's respiratory mucosa, airborne pathogens and respirable hazards: the archetypical trifecta of co-evolution. Faculty of Veterinary Medicine, Ghent University, Belgium.

Other professional activities

- *Ad Hoc reviewer for:*

2016-present: Scientific Reports, Journal of Equine Veterinary Science, Archives of Virology.
2019-present: Viruses, Pathogens, Virology, Cell Host and Microbe.
2023-present: Current Alzheimer Research, Frontiers Immunology.
2024-present: Journal of Virology.

- *Editor for:*

2022-present: Review editor on the editorial board of Frontiers in Immunology.
2021-present: Guest editor of Pathogens for the special issue entitled "Host-virus interactions in the nervous system".

Supervision of students

2024-2025: Promoter of **Celeste Hilhorst** for her master thesis: "Characterization of Canine Distemper Virus (CDV) infection in monocytes of its natural host, the domestic dog (*Canis Familiaris*)". Faculty of Veterinary Medicine, Ghent University, Belgium.

2024-present: Promoter of **Camille Kaviani** for her PhD thesis: "Characterization of Canine Distemper Virus (CDV) neuropathogenesis and its zoonotic potential". Faculty of Veterinary Medicine, Ghent University, Belgium.

2024-present: Promoter of **Febe Lippens** for her PhD thesis: "HSV1-induced neuronal hyperexcitability: a trigger for neurodegeneration?". Faculty of Veterinary Medicine, Ghent University, Belgium.

2023-2024: Promoter of **Febe Lippens** for her master's thesis: "Characterization of protein aggregates in neuronal cells following HSV1 infection". Faculty of Medicine and Health Sciences, Ghent University, Belgium.

2023-2024: Promoter of **Camille Kaviani** for her master's thesis: "Characterization of the neuropathogenesis of Porcine Hemagglutinating Encephalomyelitis Virus (PHEV)". Faculty of Veterinary Medicine, Ghent University, Belgium. Camille was awarded the award for the best research master's thesis at the faculty.

2023-present: Promoter of **Sofía González Hernández** for her PhD thesis: "Characterization of neuroinflammatory and neurodegenerative gene expression profiles after HSV1 infection". Faculty of Veterinary Medicine, Ghent University, Belgium.

2023-present: Promoter of **Joren Portaels** for his PhD thesis: “Impact of Porcine Hemagglutinating Encephalomyelitis Virus (PHEV) peripheral infection on the swine brain”. Faculty of Veterinary Medicine, Ghent University, Belgium.

2022-2023: Promoter of **Laetitia Desmars** for her master’s thesis: “Characterization of Canine Distemper Virus (CDV) neuropathogenesis in mice”. Faculty of Veterinary Medicine, Ghent University, Belgium.

2022-present: Promoter of **Xixi Kang** for her PhD thesis: “Characterization of microglial cell activation upon peripheral viral infections”. Faculty of Veterinary Medicine, Ghent University, Belgium.

2022-present: Promoter of **Waqar Zaib** for his PhD thesis: “Characterization of porcine hemagglutinating encephalomyelitis virus (PHEV) neuropathogenesis in mice”. Faculty of Veterinary Medicine, Ghent University, Belgium.

2022-present: Promoter of **Ahmad Mahmoudi Kouhi** for his PhD thesis: “Herpesvirus-induced neuroinflammation in the peripheral nervous system (PNS) as a ‘distant’ trigger of Alzheimer’s disease”. Faculty of Veterinary Medicine, Ghent University, Belgium.

2021-present: Promoter of **Ya Gao** for her PhD thesis: “Role of peripheral HSV1 infection and neuroinflammation in the initiation of Alzheimer’s disease”. Faculty of Veterinary Medicine, Ghent University, Belgium.

2021-present: Co-promoter of **Eslam Ahmed Elhanafy Mohamed** for his PhD thesis: “Development of a new intranasal vaccine against respiratory and reproductive problems caused by equine herpesvirus 1”. Faculty of Veterinary Medicine, Ghent University, Belgium. Co-promoter: Prof. Dr. Hans Nauwynck.

2021-present: Co-promoter of **Eline van Crombrugge** for her PhD thesis: “The protease-driven invasion of alphaherpesviruses through the respiratory and genital mucosae”. Faculty of Veterinary Medicine, Ghent University, Belgium. Co-promoter: Prof. Dr. Hans Nauwynck.

2019-2020: Promoter of **Ashley Salimbangon** for her senior thesis: “Investigating the regulation of the innate immune responses of PRV infection in neurons *in vitro*”. Princeton University, Princeton, USA. Currently working as research scientist at the Mount Sinai Hospital of New York, USA.

2018-2019: Promoter of **Jonah Vernejoul** for his senior thesis: “Characterization of the neuroinflammatory responses during PRV infection in mice”. Princeton University, Princeton, USA. Currently working as research scientist at the Tisch MS Center of New York, USA.

2017-2018: Promoter of **Kristen Albrecht** for her senior thesis: “Investigating the role of interleukin-6 in pruritus and death in PRV-Becker infected mice”. Princeton University, Princeton, USA. Currently working as graduate student in Yale University, USA.

2014-2015: Co-promoter of **Ivy Brown** for her master thesis: “Characterization of equine herpesvirus type 1 (EHV-1) neurovirulent strain replication kinetics and entry into CD172a^{+} monocytic cells”. Faculty of Veterinary Medicine, Ghent University, Belgium. Currently working as senior lab manager at the National Jewish Health Institute, Denver, USA.

2013-2014: Co-promoter of **Shana Dujardin** for her master thesis: “Impact of Equine herpes virus infection on the migration of mucosal dendritic cells”(In Dutch; ugent catalog rug01: 002165572). Faculty of Veterinary Medicine, Ghent University, Belgium. Currently working as veterinarian in Belgium.

2013-2014: Co-promoter of **Jolien Van Cleemput** for her master thesis: “Characteristics of equine herpesvirus type 1 (EHV-1) entry in monocytic cells” (In English; ugent catalog rug01: 002165479). Faculty of Veterinary

Medicine, Ghent University, Belgium. This thesis won the prize of the best thesis of last year veterinarians in specialty horse. Currently working as postdoctoral researcher at Princeton University, USA.

2013-2014: Co-promoter of **Katrien Poelaert** for her master thesis: "Transmission of equine herpesvirus type 1 (EHV-1) from monocytic cells to endothelial cells" (In English; ugent catalog rug01*:* 002165489). Faculty of Veterinary Medicine, Ghent University, Belgium. Currently working as postdoctoral researcher at Fox Chase Cancer Center, Philadelphia, USA.

2011-2012: Supervisor of **Manon Kestens** for her master thesis: "Hijacking of monocytes by equine viruses in order to reach the fetus" (In Dutch; ugent catalog rug01:001893684). Faculty of Veterinary Medicine, Ghent University, Belgium. Currently working as veterinarian in Belgium.

2011-2012: Supervisor of **Ann Verwulgen** for her master thesis: "Control options for the control of equine herpesvirus 1-related problems in horses" (In Dutch; ugent catalog rug01: 001893661). Faculty of Veterinary Medicine, Ghent University, Belgium. Currently working as veterinarian in Belgium.

Fellowship and awards

2022: Stichting Alzheimer Onderzoek award: Starting grant of 3 years to carry research on the role of HSV1 in the pathogenesis of Alzheimer's disease.
2017: Travel grant award: Spinal cord injury techniques training from the state of New Jersey commission on spinal cord research.
2017: Certificate of achievement Spinal cord injury techniques training. Training provided by Prof. Young, Founding Director, W. M. Keck Center for Collaborative Neuroscience, Rutgers University, USA.

Professional membership

2023-present: Scientific expert of the Fund of Scientific Research (FNRS).

Grants

Grant applications

- **2016:** Application for postdoctoral fellowship from the **National Multiple Sclerosis Society**. Project title: Novel model of viral infection to study neuropathic itch associated with MS. This is a 3-year awards grant with a total budget of $170,000.

- **2016:** Application for postdoctoral fellowship from the **Life Sciences Research Foundation**. Project title: Pseudorabies virus-induced neuropathic itch as a new animal model to study the pathogenesis of Varicella-Zoster virus (VZV) infection. This is a 3-year awards grant with a total budget of $ 180,000.

- **2016:** Application for postdoctoral fellowship from the **New Jersey Commission on Spinal Cord research**. Project title: Pseudorabies virus-induced neuropathic itch as a new model to study neuropathies. This is a 3-year awards grant with a total budget of $ 200,000.

- **2019:** Application for **European Council Research (ERC) starting grant 2020**. Project title: Herpesvirus-induced neuroinflammation in the peripheral nervous system (PNS) as a 'distant' trigger of Alzheimer's disease. This is a 5-year awards grant with a total budget of € 1,905,000.

- **2020:** Application for **the Fonds Wetenschappelijk Onderzoek (FWO) Odysseus type II grant 2021.** Project title: Herpesvirus-induced neuroinflammation in the peripheral nervous system (PNS) as a 'distant' trigger of Alzheimer's disease. This is a 5-year awards grant with a total budget of € 837,000.

- **2020:** Application for a **BOF starting grant at Ghent University**. Project title: Role of Herpesvirus type 1 and neuroinflammation in the pathogenesis of Alzheimer's disease. This is a 6-year awards grant with a total budget of € 210,000.

- **2021:** Application for **prize for scientific research on viral infections, FWO Joséphine-Charlotte.** This award amounts to € 12,500 and aims to encourage scientific research in the field of virology.

- **2021:** Application for **the Stichting Alzheimer Onderzoek starting grant.** Project title: Herpesvirus-induced neuroinflammation in the peripheral nervous system (PNS) as a 'distant' trigger of Alzheimer's disease. This is a 3-year award grant with a total budget of € 250,000.

- **2021:** Application for **the Fonds Wetenschappelijk Onderzoek (FWO) junior project.** Project title: Herpesvirus-induced neuroinflammation in the peripheral nervous system (PNS) as a 'distant' trigger of Alzheimer's disease. This is a 4-year awards grant with a total budget of € 520,000.

- **2021:** Application for **the Baillet-Latour Biomedical award-2022.** Project title: Herpesvirus infections and inflammation of the nervous system outside the brain:a new approach to study Alzheimer's disease. This is a 5-year awards grant with a total budget of € 1,000,000.

- **2022:** Application for **the Fonds Wetenschappelijk Onderzoek (FWO) junior project.** Project title: Peripheral HSV1 infection and neuroinflammation as potential trigger mechanisms of Alzheimer's disease. This is a 4-year awards grant with a total budget of € 520,000.

- **2022:** Application for **the Fonds Wetenschappelijk Onderzoek (FWO) junior project.** Project title: Role of Canine Distemper Virus in the early pathogenesis of Multiple Sclerosis. This is a 4-year awards grant with a total budget of € 520,000.

- **2022:** Application for **the Geconcerteerde Onderzoek Actie (GOA) project.** Project title: Impact of peripheral viral infection on the central nervous system. This is a 6-year awards grant with a total budget of € 1,800,000.

- **2023:** Application for **the Fonds Wetenschappelijk Onderzoek (FWO) junior project.** Project title: Characterization of Canine Distemper Virus (CDV) neuropathogenesis and its zoonotic potential. This is a 4-year awards grant with a total budget of € 600,000.

Concluded and on-going grants

- **2016-2019:** Grant from the **USA National Institute of Neurological Disorders and Stroke (NINDS**) (R01NS060699). Project title: Neuronal Spread of Herpesvirus Infection. This is a 4-year awards grant with a total budget of $ 804,964. Involved in the writing process together with Prof. Enquist, Princeton University, USA.

- **2017-2021:** Grant from the **USA National Institute of Neurological Disorders and Stroke (NINDS**) (5R37NS033506). Project title: Genetic Analysis of Herpesvirus Tropism and Virulence. This is a 4-year awards grant with a total budget of $ 1,595,964. Involved in the writing process together with Prof. Enquist, Princeton University, USA.

- **2021-2027:** BOF starting grant from **Ghent University**. Project title: Role of Herpesvirus type 1 and neuroinflammation in the pathogenesis of Alzheimer's disease. This is a 6-year awards grant with a total budget of € 210,000.

- **2022-2025:** Award grant from the **Stichting Alzheimer Onderzoek (SAO).** Project title: Herpesvirus-induced neuroinflammation in the peripheral nervous system (PNS) as a 'distant' trigger of Alzheimer's disease. This is a 3-year awards grant with a total budget of € 250,000.

- **2023-2027: Fonds Wetenschappelijk Onderzoek (FWO) junior project.** Project title: Herpesvirus-induced neuroinflammation in the peripheral nervous system (PNS) as a 'distant' trigger of Alzheimer's disease. This is a 4-year awards grant with a total budget of € 520,000.

- **2023-2029: Gent University Geconcerteerde Onderzoek Actie (GOA) project.** Project title: Impact of peripheral viral infection on the central nervous system. This is a 6-year awards grant with a total budget of € 1,800,000.

- **2024-2028: Fonds Wetenschappelijk Onderzoek (FWO) junior project.** Project title: Characterization of Canine Distemper Virus (CDV) neuropathogenesis and its zoonotic potential. This is a 4-year awards grant with a total budget of € 630,000.

Publications

1. Cronin SJF, Tejada MA, Song R, **Laval K**, Cikes D, Ji M, Brai A, Stadlmann J, Novatchikova M, Perlot T, Ali OH, Botta L, Decker T, Lazovic J, Hagelkruys A, Enquist L, Rao S, Koyuncu OO, Penninger JM. **(2023).** Pseudorabies virus hijacks DDX3X, initiating an addictive "mad itch" and immune suppression, to facilitate viral spread. *Cell*. bioRxiv [Preprint]. 2023 May 9:2023.05.09.539956. doi: 10.1101/2023.05.09.539956.
2. Mohamed, E., Zarak, I., Vereecke, N., Theuns, S. **Laval, K.** & Nauwynck, H **(2025**). Genomic analysis and replication kinetics of the closely related EHV-1 neuropathogenic 21P40 and abortigenic 97P70 strains. Vet Res 56, 12.https://doi.org/10.1186/s13567-024-01434-3.

Studies completed as a senior authorship

1. Van Crombrugge, E.; Vanbeylen, E.; Van Cleemput, J.; Van den Broeck, W.; Nauwynck, H., **Laval, K**. **(2022).** Bacterial Toxins from *Staphylococcus aureus* and *Bordetella bronchiseptica* Predispose the Horse's Respiratory Tract to Equine Herpesvirus Type 1 Infection. *Viruses*. *14*, 149 (IF 5.8).
2. Van Crombrugge, E., Ren, X., Glorieux, S., Zarak, I., Van den Broeck, W., Bachert, C., Zhang, N., Van Zele, T., Kim, D., Smith, G.A., Nauwynck, H., **Laval, K (2024)**. The alphaherpesvirus gE/gI glycoprotein complex and proteases jointly orchestrate invasion across the host's upper respiratory epithelial barrier. *mBio*. Nov 13;15(11):e0187324.
3. Portaels, J., Van Crombrugge, E., Van Den Broeck, W., Lagrou, K., Nauwynck, H., **Laval, K (2024).** Aspergillus Fumigatus Spore Proteases Alter the Respiratory Mucosa Architecture and Facilitate Equine Herpesvirus 1 Infection. *Viruses.* Jul 27;16(8):1208. doi: 10.3390/v16081208. PMID: 39205182; PMCID: PMC11358968.

Studies completed during the postdoctoral period

1. **Laval, K.,** Vernejoul, J.B., Van Cleemput, J., Koyuncu, O.O., Enquist, L.W. **(2018)**. Virulent Pseudorabies virus infection induces a specific and lethal inflammatory response in mice. *J Virol.* 92 doi: 10.1128/JVI.01614-18. (IF 6.2; 40 citations).
2. **Laval, K.,** Van Cleemput, J., Vernejoul, J.B., Enquist, L.W. **(2019)**. Alphaherpesvirus infection primes DRG neurons to an inflammatory state regulated by TLR2 and IFN type I signaling. *PLoS Pathog.* 15 (11) e1008087. (IF 7.4; 22 citations).
3. **Laval, K.,** Maturana, C., Enquist, L.W. **(2020)**. Mouse footpad inoculation model for the study of viral-induced

neuroinflammatory responses. *J. Vis. Exp.* (160), e61121.

4. **Laval, K.** & Enquist L.W. **(2020)**. The neuropathic itch caused by Pseudorabies virus infection. *Pathogens*. 9(4):254. (IF 4.5; 32 citations).
5. Van Cleemput, J., Koyuncu, O.O., **Laval, K**., Engel, E.A., and Enquist, L.W. **(2021)**. CRISPR/Cas9-constructed pseudorabies virus mutants reveal the importance of UL13 in alphaherpesvirus escape from genome silencing. *J Virol*. 95(6):e02286-20.(IF 6.2, 8 citations).
6. **Laval, K.,** Poelaert, K.C.K., Van Cleemput, J., Zhao, J., Vandekerckhove, A.P., Gryspeerdt, A.C., Garré, B., van der Meulen, K., Baghi, H.B., Dubale, H.D., Zarak, I., Van Crombrugge, E., Nauwynck, H.J. **(2021).** The pathogenesis and immune evasive mechanisms of Equine Herpesvirus type 1. *Front Microbiol*. 12:662686. (IF 5.6, 12 citations).
7. **Laval, K.,** Enquist, L.W. **(2021).** The potential role of herpes simplex virus type 1 (HSV-1) and neuroinflammation in the pathogenesis of Alzheimer's disease. *Front Neurol.* 12 (458). (IF 4.0, 11 citations).

(Pre-)doctoral research period

8. Doceul, V., Hollinshead, M., Breiman, A., **Laval, K.**, Smith, G.L. (**2012**). Protein B5 is required on extracellular enveloped vaccinia virus for repulsion of superinfecting virions. *J Gen Virol* 93, 1876-86. (IF 5.1; 24 citations).
9. Bannazadeh Baghi, H., **Laval, K**., Favoreel, H.W., Nauwynck, H.J. (**2014**). Isolation and characterization of equine nasal mucosal CD172a$^+$ cells. *Vet Immunol Immunopathol* 15, 155-63. (IF 2.0; 14 citations).
10. Grauwet, K., Vitale, M., De Pelsmaeker, S., Jacob, T., **Laval, K**., Moretta, L., Parodi, M., Parolini, S., Cantoni, C. & Favoreel, H.W. (**2015**). Pseudorabies virus US3 protein kinase protects infected cells from NK cell-mediated lysis via increased binding of the inhibitory NK cell receptor CD300a. *J Virol* 90,1522-33. (IF 6.2; 18 citations).
11. **Laval, K**., Favoreel, H.W., Nauwynck, H.J. (**2015**). Equine herpesvirus type 1 (EHV1) replication is delayed in CD172a$^+$ cells and controlled by histone deacetylases. *J Gen Virol* 96, 118-30. (IF 5.1; 25 citations).
12. **Laval, K**., Favoreel, H.W., Poelaert, K.C.K., Van Cleemput, J., Nauwynck, H.J. (**2015**). Equine herpesvirus type 1 (EHV-1) enhances viral replication in CD172a$^+$ monocytic cells upon adhesion to endothelial cells. *J Virol* 89, 10912-10923. (IF 6.2; 29 citations).
13. **Laval, K**., Favoreel, H.W., Van Cleemput, J., Poelaert, K.C.K., Brown, I.K., Nauwynck, H.J. **(2015**). Entry of equine herpesvirus type 1 (EHV-1) into CD172a$^+$ cells. *J Gen Virol* 97, 733-746. (IF 5.1; 7 citations).
14. Zhao, J., Negussie, H., **Laval, K.**, Poelaert, K.C., Nauwynck, H.J. (**2016**). Dual infections of equine herpesvirus 1 and equine arteritis virus in equine respiratory mucosa explants. *Virus Res* 220, 104-111. (IF 2.7; 6 citations).
15. **Laval, K.,** Brown, I.K, Nauwynck, H.J. (**2017**). Replication of neurovirulent EHV-1 in CD172a$^+$ monocytic cells. *Comp Immunol Microbiol Infect Dis.* 50, 58-62. (IF 1.6; 7 citations).
16. Van Cleemput, J., Poelaert, K.C.K., **Laval, K.,** Maes, R.K., Hussey, G.S., Vandenbroeck, W., Nauwynck, H.J (**2017**). Access to a main alphaherpesvirus receptor, located basolaterally in the respiratory epithelium, is masked by intercellular junctions. *Sci. Rep.* 7(1):16656. (IF 5.0; 18 citations).
17. Poelaert, K.C.K., Van Cleemput, J., **Laval, K.,** Favoreel, H.W., Hussey, G.S., Maes, R.K., Nauwynck, H.J (**2018**). Abortigenic but not neurotropic equine herpes virus type 1 modulates the interferon antiviral defense. *Front Cell Infect Microbiol* 8, 312 doi: 10.3389/fcimb.2018.00312. (IF 5.8; 13 citations).
18. Poelaert, K.C.K., Van Cleemput, J., **Laval, K**., Xie, J., Favoreel, H.W., and Nauwynck, H.J. **(2019).** Equine herpesvirus 1 infection orchestrates the expression of chemokines in equine respiratory epithelial cells. *J Gen Virol* 100(11)**,** 1567-1579. doi: 10.1099/jgv.0.001317. (IF 5.1; 7 citations).
19. Poelaert, K.C.K., Van Cleemput, J., **Laval, K.,** Favoreel, H.W., Couck, L., Van den Broeck, W., Azab, W., Nauwynck, H.J. **(2019)**. Equine herpesvirus 1 bridles T-lymphocytes to reach its target organs. *J Virol* 93 (7) doi: 10.1128/JVI.02098-18. (IF 6.2; 17 citations).
20. Van Cleemput, J., Poelaert, K.C.K., **Laval, K.,** Nauwynck, H.J. (**2019**). Unravelling the first key steps in equine herpesvirus type 5 (EHV5) pathogenesis using ex vivo and in vitro equine models. *Vet Res* 50(1):13. doi: 10.1186/s13567-019-0630-6. (IF 3.6; 9 citations).
21. Van Cleemput, J., Poelaert, K.C.K., **Laval, K.,** Impens, F., Van den Broeck, W., Gevaert, K., Nauwynck, H.J. (**2019**). Pollens destroy respiratory epithelial cell anchors and drive alphaherpesvirus infection. *Sci Rep* 9 (1):4787 doi:10.1038/s41598-019-41305-y. (IF 5.0; 20 citations).
22. Poelaert, K.C.K., Van Cleemput, J., **Laval, K.,** Descamps, S., Favoreel, H.W., Nauwynck, H.J. (**2019**). Beyond gut instinct: metabolic short-chain fatty acids moderate the pathogenesis of alphaherpesviruses.

Front Microbiol 10:273. Doi:10.3389/fmicb.2019.00723. (IF 5.6; 9 citations).

23. Van Cleemput, J., Poelaert, K.C.K., **Laval, K.,** Van den Broeck, W., Nauwynck, H.J. **(2019)**. Deoxynivalenol, but not fumonisin B1, aflatoxin B1 or diesel exhaust particles disrupt integrity of the horse's respiratory epithelium and predispose it for equine herpesvirus type 1 infection. *Vet Microbiol* 234: 17-24. (IF 3.3; 5 citations).
24. Van Cleemput, J., Poelaert, K.C.K., **Laval, K.,** Vanderheijden, N., Dhaenens, M., Daled, S., Boyen, F., Pasmans, F., Nauwynck, H.J. **(2020)**. An alphaherpesvirus exploits antimicrobial defensins to initiate respiratory tract infection. *J Virol*, JVI.01676-19. (IF 6.2; 9 citations).

Oral presentations

1. **Laval, K**., Favoreel, H.W., Nauwynck, H.J. Equine herpesvirus type 1 (EHV-1) replication is delayed in CD172a$^+$ cells and controlled by histone deacetylases. Proceedings of 39th Annual International Herpesvirus Workshop, July 19th- 23th, Kobe, Japan (**2014**).
2. **Laval, K**., Favoreel, H.W., Poelaert, K.C.K., Van Cleemput, J., Nauwynck, H.J. Equine herpesvirus type 1 (EHV-1) enhances viral replication in CD172a$^+$ monocytic cells upon adhesion to endothelial cells. Proceedings of 40th Annual International Herpesvirus Workshop, July 25th- 29th, Boise, Idaho, USA (**2015**).
3. **Laval, K**., Favoreel, H.W., Poelaert, K.C.K., Van Cleemput, J., Nauwynck, H.J. Equine herpesvirus type 1 (EHV-1) enhances viral replication in CD172a$^+$ monocytic cells upon adhesion to endothelial cells. Proceedings of 10th International Congress ESVV for Veterinary Virology, August 31st – September 3rd, Montpellier, France (**2015**).
4. Poelaert, K.C.K., Van Cleemput, J., **Laval, K**., Favoreel, H.W., Nauwynck, H.J. Type I interferon, crucial in host defence against EHV-1? Proceedings of 4th annual meeting of the Belgian Society for Virology, December 8th, Brussels, Belgium (**2016**).
5. Van Cleemput, J., Poelaert, K.C.K., **Laval, K**., Nauwynck, H.J. Intercellular bridges in the equine respiratory mucosa: a crucial innate barrier against EHV-1 infection. Proceedings of 4th annual meeting of the Belgian Society for Virology, December 8th, Brussels, Belgium (**2016**).
6. Poelaert, K.C.K., Van Cleemput, J., **Laval, K.,** Favoreel, H.W., Hussey, G.S., Maes, R.K., Nauwynck, H.J. Type I interferon is crucial in host defence against equine herpesvirus type 1. Proceedings of 5th international ESVV Herpesvirus satellite symposium, July 29th- August 2nd, Ghent, Belgium (**2017**).
7. Van Cleemput, J., Poelaert, K.C.K., **Laval, K.,** Maes, R.K., Hussey, G.S., Vandenbroeck, W., Nauwynck, H.J. Respiratory cell intercellular junctions are an innate barrier against equine herpesvirus type 1 infection in horses. Proceedings of 5th international ESVV Herpesvirus satellite symposium, July 29th- August 2nd, Ghent, Belgium (**2017**).
8. Poelaert, K.C.K., Van Cleemput, J., **Laval, K.,** Favoreel, H.W., Hussey, G.S., Maes, R.K., Nauwynck, H.J. Type I interferon is crucial in host defence against equine herpesvirus type 1. Proceedings of 42th Annual International Herpesvirus Workshop, July 29th- August 2nd, Ghent, Belgium (**2017**).
9. Van Cleemput, J., Poelaert, K.C.K., **Laval, K.,** Maes, R.K., Hussey, G.S., Vandenbroeck, W., Nauwynck, H.J. Respiratory cell intercellular junctions are an innate barrier against equine herpesvirus type 1 infection in horses. Proceedings of 42th Annual International Herpesvirus Workshop, July 29th- August 2nd, Ghent, Belgium (**2017**).
10. Poelaert, K.C.K., Van Cleemput, J., **Laval, K.,** Favoreel, H.W., Nauwynck, H.J. Equine herpesvirus 1 bridles T-lymphocytes to reach its target organs. Proceedings of 43th Annual International Herpesvirus Workshop, July 29- 25th, Vancouver, British Columbia, Canada (**2018**).
11. Van Cleemput, J., Poelaert, K.C.K., **Laval, K.,** Maes, R.K., Hussey, G.S., Vandenbroeck, W., Nauwynck, H.J. Access to a main alphaherpesvirus receptor, located basolaterally in the respiratory epithelium, is masked by intercellular junctions. Proceedings of 43th Annual International Herpesvirus Workshop, July 29-25th, Vancouver, British Columbia, Canada (**2018**).
12. Poelaert, K.C.K., Van Cleemput, J., **Laval, K.,** Favoreel, H.W., Hussey, G.S., Maes, R.K., Nauwynck, H.J. Abortigenic but not neurotropic equine herpes virus type 1 modulates the interferon antiviral defense. Proceedings of 11th international congress ESVV for veterinary virology, Vienna, Austria (**2018).**

13. Poelaert, K.C.K., Van Cleemput, J., **Laval, K.,** Favoreel, H.W., Couck, L., Van den Broeck, W., Azab, W., Nauwynck, H.J. Equine herpesvirus 1 bridles T-lymphocytes to reach its target organs. Proceedings of 11th international congress ESVV for veterinary virology, Vienna, Austria (**2018).**
14. Van Cleemput, J., Poelaert, K.C.K., **Laval, K.,** Vanderheijden, N., Dhaenens, M., Hans Nauwynck. The interplay between equine β-defensins and local viral pathogens in the horse's respiratory tract Proceedings of 11th international congress ESVV for veterinary virology, Vienna, Austria (**2018).**
15. Van Cleemput, J., Poelaert, K.C.K., **Laval, K.,** Maes, R.K., Hussey, G.S., Vandenbroeck, W., Nauwynck, H.J. Access to a main EHV1 receptor, located basolaterally in the respiratory epithelium is masked by intercellular junctions and revealed by pollen proteases. Proceedings of 11th international congress ESVV for veterinary virology, Vienna, Austria (**2018).**
16. Van Cleemput, J., Poelaert, K.C.K., **Laval, K.,** Hussey, G., Maes, R., Van den Broeck, W., Nauwynck, H.J. Aerogenic factors facilitating respiratory EHV1 infection. British Equine Veterinary Association (BEVA) congress, Birmingham, UK **(2018**).
17. **Laval, K.,** Vernejoul, J.B., Van Cleemput, J., Koyuncu, O.O., Enquist, L.W. Virulent Pseudorabies virus infection induces a specific and lethal inflammatory response in mice. Proceedings of 34th annual departmental retreat at Princeton University. October 5th-October 6th, Princeton, NJ, USA (**2018**).
18. Van Cleemput, J., Poelaert, K.C.K., **Laval, K.,** Vanderheijden, N., Dhaenens, M., Daled, S., Boyen, F., Pasmans, F., Nauwynck, H.J. Herpesviruses exploit antimicrobial defences to initiate respiratory tract infection. Proceedings of 44th Annual International Herpesvirus Workshop, July 20th- 24th, Knoxville, Tennessee, USA (**2019**).
19. **Laval, K.,** Vernejoul, J.B., Van Cleemput, J., Koyuncu, O.O., Enquist, L.W. Virulent Pseudorabies virus infection induces a specific and lethal inflammatory response in mice. Proceedings of the 9th annual Belvir meeting, December 13th, online **(2021)**.

Selected poster presentations

1. **Laval, K**., Favoreel, H.W., Nauwynck, H.J. (2015). Equine herpesvirus type 1 (EHV-1) replication is delayed in CD172a$^+$ cells and controlled by histone deacetylases. Proceedings of 39th Annual International Herpesvirus Workshop, July 19th- 23th, Kobe, Japan (**2014**).
2. **Laval, K**., Favoreel, H.W., Poelaert, K.C.K., Van Cleemput, J., Nauwynck, H.J. (2015). Equine herpesvirus type 1 (EHV-1) enhances viral replication in CD172a$^+$ monocytic cells upon adhesion to endothelial cells. Proceedings of 40th Annual International Herpesvirus Workshop, July 25th- 29th, Boise, Idaho, USA (**2015**).
3. Poelaert, K.C.K., Van Cleemput, J., **Laval, K.,** Favoreel, H.W., Hussey, G.S., Maes, R.K., Nauwynck, H.J. Type I interferon is crucial in host defence against equine herpesvirus type 1. Proceedings of 42th Annual International Herpesvirus Workshop, July 29th- August 2nd, Ghent, Belgium (**2017**).
4. Van Cleemput, J., Poelaert, K.C.K., **Laval, K.,** Maes, R.K., Hussey, G.S., Vandenbroeck, W., Nauwynck, H.J. Respiratory cell intercellular junctions are an innate barrier against equine herpesvirus type 1 infection in horses. Proceedings of 42th Annual International Herpesvirus Workshop, July 29th- August 2nd, Ghent, Belgium (**2017**).
5. Poelaert, K.C.K., Van Cleemput, J., **Laval, K.,** Favoreel, H.W., Nauwynck, H.J. Equine herpesvirus 1 bridles T-lymphocytes to reach its target organs. Proceedings of 43th Annual International Herpesvirus Workshop, July 29- 25th, Vancouver, British Columbia, Canada (**2018**).
6. Van Cleemput, J., Poelaert, K.C.K., **Laval, K.,** Vanderheijden, N., Dhaenens, M., Nauwynck, H.J. Exploiting the host's epithelial β-defensins in multiple ways: a new immune evasive alphaherpesvirus strategy. Proceedings of 43th Annual International Herpesvirus Workshop, July 21st- 25th, Vancouver, British Columbia, Canada (**2018**).
7. **Laval, K.,** Vernejoul, J.B., Van Cleemput, J., Koyuncu, O.O., Enquist, L.W. Virulent Pseudorabies virus infection induces a specific and lethal inflammatory response in mice. Proceedings of 43th Annual International Herpesvirus Workshop, July 21st- 25th, Vancouver, British Columbia, Canada (**2018**).
8. **Laval, K.,** Van Cleemput, J., Vernejoul, J.B., Enquist, L.W. IFN type I controls the early events of alphaherpesvirus-induced neuroinflammation in mice. Neural environnement in disease and neurodegenerative diseases, June 16th-20th, Keystone, Colorado, USA (**2019**).
9. Van Cleemput, J., Poelaert, K.C.K., **Laval, K.**, Nauwynck, H.J. Unravelling the first key steps in equine herpesvirus type 5 (EHV5) pathogenesis using ex vivo and in vitro equine models. Proceedings of 44th

Annual International Herpesvirus Workshop, July 20th- 24th, Knoxville, Tennessee, USA (**2019**).

10. **Laval, K.**, Van Cleemput, J., Vernejoul, J.B., Enquist, L.W. Characterization of the early events of Pseudorabies virus (PRV)-induced neuroinflammation in mice. Proceedings of 44th Annual International Herpesvirus Workshop, July 20th- 24th, Knoxville, Tennessee, USA (**2019**).
11. Gao Y., Mahmoudikouhi, A., **Laval, K.** HSV1 infection triggers the production of Amyloid-beta (Aβ) protein in both mouse and human neuronal cells. Proceedings of 18th International Conference on Alzheimer's & Parkinson's Diseases, March 5th-9th, Lisbon, Portugal (**2024**).
12. Mahmoudikouhi, A., Gao,Y., Lippens, F., **Laval, K**. Herpes simplex virus type 1 triggers the production of α-synuclein in both human and mouse CNS neurons *in vitro.* Proceedings of 18th International Conference on Alzheimer's & Parkinson's Diseases, March 5th-9th, Lisbon, Portugal **(2024).**