

BIOGRAPHICAL SKETCH

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NAME Barklis, Eric	POSITION TITLE Professor
eRA COMMONS USER NAME barklise	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Massachusetts Institute of Technology	B.S.	1973	Biology
Massachusetts Institute of Technology	Ph.D.	1984	Biochemistry
Massachusetts Institute of Technology	Postdoc	1984-87	Virology

A. Personal Statement: Over the past 25 years, my lab has focused on the analysis of virus structure, assembly and replication, with an emphasis on retroviruses, flaviviruses, and bunyaviruses. Our lab provides training and tools for the biophysical, biochemical and genetic analysis of viruses and their interactions with host cells. I am Director of the Graduate Program in the Department of Molecular Microbiology and Immunology, am a member of the Graduate Curriculum Committee, teach in several courses, and train undergraduates, graduates, post-docs, and research assistants in my lab. Over the years, our lab has collaborated with numerous other OHSU faculty, and has trained faculty members, post-docs and graduate students from other labs on aspects of the structural characterization of viruses and viral proteins.

B1. POSITIONS

1974-75 Graduate study, English Literature, Northeastern University
 1977-78 Research at UT Austin and UTMB Galveston. Advisor: Dr. J. R. Perez-Polo
 1978-84 Graduate Student. MIT. Advisor: Dr. Harvey F. Lodish
 1984-87 Postdoctoral Fellow. MIT. Advisors: Drs. Rudolph Jaenisch and Richard Mulligan
 1987-94 Assistant Professor, Vollum Inst. and Dept. Microbiology, Oregon Health & Science Univ.
 1994-2001 Associate Professor, Vollum Inst. and Dept. Microbiology, Oregon Health & Science Univ.
 1999- Director, Electron Microscope Core Facility, Oregon Health & Science University
 2001- Professor, Vollum Inst. and Dept. Microbiology, Oregon Health & Science University

B2. HONORS and REVIEW PANELS

1974-75 Northeastern University, Department of English Literature, Fellowship
 1977 UTMB Dept. of Physiology, Teaching-Research Assistantship
 1977-80 National Science Foundation Predoctoral Fellow
 1984-87 Syntex Fellow of the Life Sciences Research Foundation
 1988-90 March of Dimes Basil O'Connor Scholar Award
 1992-97 Oregon Health & Science University, Graduate Student Teaching Award
 1992,94,95, 04 Co-Chairman, Virus Assembly Section, Cold Spring Harbor Retroviruses Meetings
 1989 - NIDDK ad hoc Committee on Somatic Cell Gene Therapy; NIH Immunology, Virology and Pathology Study Section; NIH Physiological Sciences ad hoc Study Section; NIH AIDS and Related Research ad hoc Study Section; NIDDK Special SBIR Review Group; NIDDK Review Committee on Cystic Fibrosis Research Centers; NIH Experimental Virology Study Section; NCI Promotion and Tenure Comm; NCI AIDS Vaccine Program Site Review Comm; Wellcome Trust Fellowship Rev. Comm; NIH Bioterrorism/Emerging Infect. Diseases Special Study Section, AIDS and related research special emphasis panel
 1991- Journal Reviewer: Biochemistry, EMBO J., Gene, J.Biol. Chem., J. Cell. Biol. J. Mol. Biol., J. Virol., PNAS, Science, Virology, J. Clin. Microbiology
 2003- Journal of Virology, Editorial Board

B. SELECTED PUBLICATIONS

Tang, C., Leigligier, E., Kinde, I., Kyere, S., Mayo, K., **Barklis, E.**, Sun, Y., Huang, M., Summers, M.F. (2003). Antiviral inhibition of the HIV-1 capsid protein. J. Mol. Biol. 327, 1013-1020. PMID: 12662926
 Scholz, I., Arvidson, B., Huseby, D. and **Barklis, E.** (2005) Virus particle core defects caused by mutations in the human immunodeficiency virus capsid N-terminal domain. J. Virol. 79, 1470-1479. PMCID: PMC544128
 Huseby, E., Barklis, R., Alfadhli, A., and **Barklis, E.** (2005) Assembly of human immunodeficiency virus

Precursor Gag proteins. J. Biol. Chem. 280, 17664-17670. PMID:PMC15734744

Alfadhli, A., Dhenub, T., Still, A., and **Barklis E.** (2005) Analysis of HIV-1 Gag dimerization-induced assembly. J. Virol, 79, 14498-14506. PMCID: PMC1287545

Barklis, E., Still, A., Sabri, M., Hirsch, A., Nikolich-Zugich, J., Brien, J., Dhenub, T., Scholz, I., and Alfadhli, A. (2007). Antimicrobial agents and chemotherapy, 51, 2642-2645. PMCID: PMC1913232

Hung, C.-H., Thomas, L., Ruby, C., Atkins, K., Morris, N., Knight, Z., Scholz, I., **Barklis, E.**, Weinberg, A., Shokat, K., and Thomas, G. (2007). HIV-1 Nef assembles a Src family kinase-ZAP-70/Syk-PI3K cascade to downregulate cell-surface MHC-1. Cell Host & Microbe 1, 121-131. PMID: 18005690

Scholz, I., Still, A., Dhenub, T., Coday, K., Webb, M., and **Barklis, E.** (2008). Analysis of human immunodeficiency virus matrix domain replacements. Virology 371, 322-335. PMCID: PMC2708115

Alfadhli, A., Barklis, R., and **Barklis, E.** (2009). HIV-1 matrix organizes as a hexamer of trimers on membranes containing phosphatidylinositol-(4,5)-bisphosphate. Virology 387, 466-472. PMCID:PMC2786731.

Barklis, E., Alfadhli, A., McQuaw, C., Yalamuri, S., Still, A., Barklis, R., Kukull, B. and López, C. (2009). Characterization of the in vitro HIV-1 capsid assembly pathway. J. Mol. Biol. 387, 376-389. PMCID: PMC2667805

Alfadhli, A., Still, A., and **Barklis, E.** (2009). Analysis of human immunodeficiency virus type 1 matrix binding to membranes and nucleic acids. J. Virol. 83, 12196-12203. PMCID:PMC2786731.

Dikeakos, J., Atkins, K., Thomas, K., Emert-Sediak, L., Byeon, I., Jung, J., Ahn, J., Wortman, M., Kukul, B., Saito, M., Koizumi, H., Williamson, D., Hiyoshi, H., **Barklis, E.**, Takiguchi, M., Suzu, S., Groneborn, A., Smithgall, T., and Thomas, G. (2010) Small molecule inhibition of HIV-1 induced MHC-1 down-regulation identifies a temporally regulated switch in Nef action. Mol. Biol. of the Cell, 21,3279-3292, PMCID:PMC2947465.

Still, A., Huseby, D., and **Barklis, E.** (2011). Analysis of the N-terminal region of the murine leukemia virus Nucleocapsid protein. Virus Research, 155; 181-188. PMCID:PMC3033773

Noviello, C., Lopez, C., Kukull, B., McNett, H., Still, A., Eccles, J., Sloan, R., and **Barklis, E.** (2011). Second Compensatory mutations of HIV-1 capsid mutations. J. Virol. 85, 4730-4738. PMCID:PMC:3126181.

Alfadhli, A., McNett, H., Tsagli, S., Bachinger, H.P., Peyton, D. and **Barklis, E.** (2011). HIV-1 matrix binding to RNA. J. Mol. Biol. 410, 653-666. PMCID:PMC:3139429.

Lopez, C., Eccles, J., Still, A., Sloan, R., Barklis, R., Tsagli, S., and **Barklis, E.** (2011). Determinants of the HIV-1 core assembly pathway. Virology 417, 137-146. PMCID:PMC:3152690.

D. RESEARCH ONGOING

R01 GM101983 Barklis (PI) 09/30/12 - 07/31/16
NIH/NIGMS
Analysis of HIV-1 Core Assembly and Inhibition
This grant supports our efforts to investigate the nucleation, growth and stability of HIV-1 cores. We will employ unique approaches to foster the discovery of antiviral therapeutics against new viral processes.

R01 GM060170 Barklis (PI) 04/01/08 - 04/30/16
NIH/NIGMS
HIV Gag precursor protein interactions
This grant supports our efforts to determine how HIV matrix proteins organize on membranes, associate with RNAs, and bind to envelope proteins.

Completed Research Support

OCSSB (Barklis, PI) 02/01/13 - 01/31/14
Pilot Project Grant: OHSU Center for Spatial Systems Biomedicine
iLEM analysis of Akt signaling in MCF7 breast cancer cells
This pilot project is to characterize Akt signaling architectures in MCF7 breast cancer cells treated with ins and/or the AKTi.

R01 AI071798 Barklis (PI) 07/01/07 - 06/30/12
NIH/NIAID
Development of a high throughput HIV assembly screen
This grant supports efforts to develop a cell culture-based high throughput screen to identify HIV-1 inhibitors. We requested and received a one year no cost extension to complete this work.