**REFERENCES**

1. Adams, W. R., and Kraft, L. M. (1963). Epizootic Diarrhea of Infant Mice: Identification of the Etiologic Agent. Science *141*, 359–360.
2. Anderson, E. J., Shippee, D. B., Weinrobe, M. H., Davila, M. D., Katz, B. Z., Reddy, S., Cuyugan, M. G. K. P., Lee, S. Y., Simons, Y. M., Yogev, R., et al. (2013). Indirect Protection of Adults From Rotavirus by Pediatric Rotavirus Vaccination. Clinical Infectious Diseases *56*, 755–760.
3. Araújo, I. T., Heinemann, M. B., Fialho, A. M., and Leite, J. P. G. (2011). Detection and Molecular Characterization of Human Group C Rotavirus in Brazil. Intervirology *54*, 261–267.
4. Benson, D. A., Clark, K., Karsch-Mizrachi, I., Lipman, D. J., Ostell, J., and Sayers, E. W. (2013). GenBank. Nucleic Acids Research Nucl. Acids Res. *42*.
5. Bishop, R. F., Barnes, G. L., Cipriani, E., and Lund, J. S. (1983). Clinical Immunity after Neonatal Rotavirus Infection. New England Journal of Medicine N Engl J Med *309*, 72–76.
6. Bishop, R., Davidson, G., Holmes, I., and Ruck, B. (1973). Virus Particles In Epithelial Cells Of Duodenal Mucosa From Children With Acute Non-Bacterial Gastroenteritis. The Lancet *302*, 1281–1283.
7. Blackhall, J., Fuentes, A., and Magnusson, G. (1996). Genetic Stability of a Porcine Rotavirus RNA Segment during Repeated Plaque Isolation. Virology *225*, 181–190.
8. Boni, M. F., Posada, D., and Feldman, M. W. (2006). An Exact Nonparametric Method for Inferring Mosaic Structure in Sequence Triplets. Genetics *176*, 1035–1047.
9. Burns, J. W., Siadat-Pajouh, M., Krishnaney, A. A., and Greenberg, H. B. (1996). Protective Effect of Rotavirus VP6-Specific IgA Monoclonal Antibodies That Lack Neutralizing Activity. Science *272*, 104–107.
10. Chang, K. O., Nielsen, P. R., Ward, L. A., and Saif, L. J. (1999). Dual Infection of Gnotobiotic Calves with Bovine Strains of Group A and Porcine-Like Group C Rotaviruses Influences Pathogenesis of the Group C Rotavirus. Journal of Virology *73*, 9284–9293.
11. Chen, Z., Lambden, P. R., Lau, J., Caul, E., and Clarke, I. N. (2002). Human group C rotavirus: completion of the genome sequence and gene coding assignments of a non-cultivatable rotavirus. Virus Research *83*, 179–187.
12. Collins, P. J., Martella, V., and O'shea, H. (2008). Detection and Characterization of Group C Rotaviruses in Asymptomatic Piglets in Ireland. Journal of Clinical Microbiology *46*, 2973–2979.
13. Cortese, M. M., Immergluck, L. C., Held, M., Jain, S., Chan, T., Grizas, A. P., Khizer, S., Barrett, C., Quaye, O., Mijatovic-Rustempasic, S., et al. (2013). Effectiveness of Monovalent and Pentavalent Rotavirus Vaccine. Pediatrics *132*.
14. Crawford, S. E., Mukherjee, S. K., Estes, M. K., Lawton, J. A., Shaw, A. L., Ramig, R. F., and Prasad, B. V. V. (2001). Trypsin Cleavage Stabilizes the Rotavirus VP4 Spike. Journal of Virology *75*, 6052–6061.
15. Delport, W., Poon, A. F. Y., Frost, S. D. W., and Pond, S. L. K. (2010). Datamonkey 2010: a suite of phylogenetic analysis tools for evolutionary biology. Bioinformatics *26*, 2455–2457.
16. Desselberger, U. (2014). Rotaviruses. Virus Research *190*, 75–96.
17. Drummond, A. J. (2005). Bayesian Coalescent Inference of Past Population Dynamics from Molecular Sequences. Molecular Biology and Evolution *22*, 1185–1192.
18. Drummond, A. J., Suchard, M. A., Xie, D., and Rambaut, A. (2012). Bayesian Phylogenetics with BEAUti and the BEAST 1.7. Molecular Biology and Evolution *29*, 1969–1973.
19. Drummond, A. J., Ho, S. Y. W., Phillips, M. J., and Rambaut, A. (2006). Relaxed Phylogenetics and Dating with Confidence. PLoS Biology PLoS Biol *4*.
20. Eddy, S. R. (1998). Profile hidden Markov models. Bioinformatics *14*, 755–763.
21. Esposito, D. H., Holman, R. C., Haberling, D. L., Tate, J. E., Podewils, L. J., Glass, R. I., and Parashar, U. (2011). Baseline Estimates of Diarrhea-associated Mortality Among United States Children Before Rotavirus Vaccine Introduction. The Pediatric Infectious Disease Journal *30*, 942–947.
22. Estes, M., and Kapikian, A. (2007). Rotavirus. In Fields' Virology, D. Knipe, P. Howley, D. Griffin, R. Lamb, M. Martin, B. Roizman, and S. Straus, eds. (Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins), pp. 1917–1974.
23. Feng, N., Franco, M. A., and Greenberg, H. B. (1997). Murine Model of Rotavirus Infection. Advances in Experimental Medicine and Biology Mechanisms in the Pathogenesis of Enteric Diseases, 233–240.
24. Fischer, T. K., Viboud, C., Parashar, U., Malek, M., Steiner, C., Glass, R., and Simonsen, L. (2007). Hospitalizations and Deaths from Diarrhea and Rotavirus among Children 195, 1117–1125.
25. Flewett, T., Bryden, A., and Davies, H. (1973). Virus Particles In Gastroenteritis. The Lancet *302*, 1497.
26. Franco, M. A., Angel, J., and Greenberg, H. B. (2006). Immunity and correlates of protection for rotavirus vaccines. Vaccine *24*, 2718–2731.
27. Gentsch, J. R., Laird, A. R., Bielfelt, B., Griffin, D. D., Bányai, K., Ramachandran, M., Jain, V., Cunliffe, N. A., Nakagomi, O., Kirkwood, C. D., et al. (2005). Serotype Diversity and Reassortment between Human and Animal Rotavirus Strains: Implications for Rotavirus Vaccine Programs. The Journal of Infectious Diseases J INFECT DIS *192*.
28. Gibbs, M. J., Armstrong, J. S., and Gibbs, A. J. (2000). Sister-Scanning: a Monte Carlo procedure for assessing signals in recombinant sequences. Bioinformatics *16*, 573–582.
29. Glass, R. I., Parashar, U., Patel, M., Gentsch, J., and Jiang, B. (2014). Rotavirus vaccines: Successes and challenges. Journal of Infection *68*.
30. House, J. A. (1978). Economic impact of rotavirus and other neonatal disease agents of animals. Journal of the American Veterinary Medical Association *173*, 573–576.
31. Iturriza-Gomara, M., Isherwood, B., Desselberger, U., and Gray, J. (2001). Reassortment In Vivo: Driving Force for Diversity of Human Rotavirus Strains Isolated in the United Kingdom between 1995 and 1999. Journal of Virology *75*, 3696–3705.
32. Jalilvand, S., Marashi, S. M., and Shoja, Z. (2015). Rotavirus VP6 preparations as a non-replicating vaccine candidates. Vaccine *33*, 3281–3287.
33. Jiang, B., Gentsch, J. R., and Glass, R. I. (2002). The Role of Serum Antibodies in the Protection against Rotavirus Disease: An Overview. Clinical Infectious Diseases CLIN INFECT DIS *34*, 1351–1361.
34. Jiang, S., Ji, S., Tang, Q., Cui, X., Yang, H., Kan, B., and Gao, S. (2008). Molecular characterization of a novel adult diarrhoea rotavirus strain J19 isolated in China and its significance for the evolution and origin of group B rotaviruses. Journal of General Virology *89*, 2622–2629.
35. Katoh, K., and Standley, D. M. (2013). MAFFT Multiple Sequence Alignment Software Version 7: Improvements in Performance and Usability. Molecular Biology and Evolution *30*, 772–780.
36. Kelkar, S. D., and Zade, J. K. (2004). Group B rotaviruses similar to strain CAL-1, have been circulating in Western India since 1993. Epidemiol. Infect. Epidemiology and Infection *132*, 745–749.
37. Kindler, E., Trojnar, E., Heckel, G., Otto, P. H., and Johne, R. (2013). Analysis of rotavirus species diversity and evolution including the newly determined full-length genome sequences of rotavirus F and G. Infection, Genetics and Evolution *14*, 58–67.
38. Kuzuya, M., Fujii, R., Hamano, M., Nishijima, M., and Ogura, H. (2007). Detection and molecular characterization of human group C rotaviruses in Okayama Prefecture, Japan, between 1986 and 2005. J. Med. Virol. Journal of Medical Virology *79*, 1219–1228.
39. Lopman, B. A., Pitzer, V. E., Sarkar, R., Gladstone, B., Patel, M., Glasser, J., Gambhir, M., Atchison, C., Grenfell, B. T., Edmunds, W. J., et al. (2012). Understanding Reduced Rotavirus Vaccine Efficacy in Low Socio-Economic Settings. PLoS ONE *7*.
40. Malherbe, H., and Harwin, R. (1963). The cytopathic effects of vervet monkey viruses. South African Medical Journal *37*, 407–411.
41. Martella, V., Bányai, K., Matthijnssens, J., Buonavoglia, C., and Ciarlet, M. (2010). Zoonotic aspects of rotaviruses. Veterinary Microbiology *140*, 246–255.
42. Marthaler, D., Rossow, K., Gramer, M., Collins, J., Goyal, S., Tsunemitsu, H., Kuga, K., Suzuki, T., Ciarlet, M., and Matthijnssens, J. (2012). Detection of substantial porcine group B rotavirus genetic diversity in the United States, resulting in a modified classification proposal for G genotypes. Virology *433*, 85–96.
43. Marthaler, D., Rossow, K., Culhane, M., Collins, J., Goyal, S., Ciarlet, M., and Matthijnssens, J. (2013). Identification, phylogenetic analysis and classification of porcine group C rotavirus VP7 sequences from the United States and Canada. Virology *446*, 189–198.
44. Marthaler, D., Rossow, K., Culhane, M., Goyal, S., Collins, J., Matthijnssens, J., Nelson, M., and Ciarlet, M. (2014). Widespread Rotavirus H in Commercially Raised Pigs, United States. Emerg. Infect. Dis. Emerging Infectious Diseases *20*, 1203–1206.
45. Martin, D., and Rybicki, E. (2000). RDP: detection of recombination amongst aligned sequences. Bioinformatics *16*, 562–563.
46. Martin, D. P., Murrell, B., Golden, M., Khoosal, A., and Muhire, B. (2015). RDP4: Detection and analysis of recombination patterns in virus genomes. Virus Evolution *1*.
47. Martin, D., Posada, D., Crandall, K., and Williamson, C. (2005). A Modified Bootscan Algorithm for Automated Identification of Recombinant Sequences and Recombination Breakpoints. AIDS Research and Human Retroviruses *21*, 98–102.
48. Matthijnssens, J., Ciarlet, M., Heiman, E., Arijs, I., Delbeke, T., Mcdonald, S. M., Palombo, E. A., Iturriza-Gomara, M., Maes, P., Patton, J. T., et al. (2008). Full Genome-Based Classification of Rotaviruses Reveals a Common Origin between Human Wa-Like and Porcine Rotavirus Strains and Human DS-1-Like and Bovine Rotavirus Strains. Journal of Virology *82*, 3204–3219.
49. Matthijnssens, J., Ciarlet, M., Mcdonald, S. M., Attoui, H., Bányai, K., Brister, J. R., Buesa, J., Esona, M. D., Estes, M. K., Gentsch, J. R., et al. (2011). Uniformity of rotavirus strain nomenclature proposed by the Rotavirus Classification Working Group (RCWG). Arch Virol Archives of Virology *156*, 1397–1413.
50. Matthijnssens, J., Grazia, S. D., Piessens, J., Heylen, E., Zeller, M., Giammanco, G. M., Bányai, K., Buonavoglia, C., Ciarlet, M., Martella, V., et al. (2011). Multiple reassortment and interspecies transmission events contribute to the diversity of feline, canine and feline/canine-like human group A rotavirus strains. Infection, Genetics and Evolution *11*, 1396–1406.
51. Matthijnssens, J., Otto, P. H., Ciarlet, M., Desselberger, U., Ranst, M. V., and Johne, R. (2012). VP6-sequence-based cutoff values as a criterion for rotavirus species demarcation. Arch Virol Archives of Virology *157*, 1177–1182.
52. Mcdonald, S. M., Matthijnssens, J., Mcallen, J. K., Hine, E., Overton, L., Wang, S., Lemey, P., Zeller, M., Ranst, M. V., Spiro, D. J., et al. (2009). Evolutionary Dynamics of Human Rotaviruses: Balancing Reassortment with Preferred Genome Constellations. PLoS Pathog PLoS Pathogens *5*.
53. Mebus, C. A., Underdahl, N. R., Rhodes, M. B., and Twiehaus, M. J. (1969). Further studies on neonatal calf diarrhea virus. Proceedings, Annual Meeting of the United States Animal Health Association *73*, 97–99.
54. Miller, M. A., Pfeiffer, W., and Schwartz, T. (2010). Creating the CIPRES Science Gateway for inference of large phylogenetic trees. 2010 Gateway Computing Environments Workshop (GCE).
55. Mlera, L., O’Neill, H. G., Jere, K. C., and Dijk, A. A. V. (2012). Whole-genome consensus sequence analysis of a South African rotavirus SA11 sample reveals a mixed infection with two close derivatives of the SA11-H96 strain. Arch Virol Archives of Virology *158*, 1021–1030.
56. Mohan, K. V. K., and Atreya, C. D. (2000). Comparative sequence analysis identified mutations outside the NSP4 cytotoxic domain of tissue culture-adapted ATCC-Wa strain of human rotavirus and a novel inter-species variable domain in its C-terminus. Arch. Virol. Archives of Virology *145*, 1789–1799.
57. Molinari, B. L., Lorenzetti, E., Otonel, R. A., Alfieri, A. F., and Alfieri, A. A. (2014). Species H Rotavirus Detected in Piglets with Diarrhea, Brazil, 2012. Emerg. Infect. Dis. Emerging Infectious Diseases *20*, 1019–1022.
58. Murrell, B., Moola, S., Mabona, A., Weighill, T., Sheward, D., Pond, S. L. K., and Scheffler, K. (2013). FUBAR: A Fast, Unconstrained Bayesian AppRoximation for Inferring Selection. Molecular Biology and Evolution *30*, 1196–1205.
59. Murrell, B., Wertheim, J. O., Moola, S., Weighill, T., Scheffler, K., and Pond, S. L. K. (2012). Detecting Individual Sites Subject to Episodic Diversifying Selection. PLoS Genetics PLoS Genet *8*.
60. Nagashima, S., Kobayashi, N., Ishino, M., Alam, M. M., Ahmed, M. U., Paul, S. K., Ganesh, B., Chawla-Sarkar, M., Krishnan, T., Naik, T. N., et al. (2008). Whole genomic characterization of a human rotavirus strain B219 belonging to a novel group of the genus rotavirus. J. Med. Virol. Journal of Medical Virology *80*, 2023–2033.
61. Offit, P. A. (1994). Rotaviruses: Immunological Determinants of Protection Against Infection and Disease. Advances in Virus Research Advances in Virus Research Volume 44, 161–202.
62. Otto, P. H., Ahmed, M. U., Hotzel, H., Machnowska, P., Reetz, J., Roth, B., Trojnar, E., and Johne, R. (2012). Detection of avian rotaviruses of groups A, D, F and G in diseased chickens and turkeys from Europe and Bangladesh. Veterinary Microbiology *156*, 8–15.
63. Padidam, M., Sawyer, S., and Fauquet, C. M. (1999). Possible Emergence of New Geminiviruses by Frequent Recombination. Virology *265*, 218–225.
64. Paradis, E., Claude, J., and Strimmer, K. (2004). APE: Analyses of Phylogenetics and Evolution in R language. Bioinformatics *20*, 289–290.
65. Parashar, U. D., Burton, A., Lanata, C., Boschi‐Pinto, C., Shibuya, K., Steele, D., Birmingham, M., and Glass, R. I. (2009). Global Mortality Associated with Rotavirus Disease among Children in 2004. The Journal of Infectious Diseases J INFECT DIS *200*.
66. Patel, M. M., and Parashar, U. D. (2009). Assessing the Effectiveness and Public Health Impact of Rotavirus Vaccines after Introduction in Immunization Programs. The Journal of Infectious Diseases J INFECT DIS *200*.
67. Pollard, S. L., Malpica-Llanos, T., Friberg, I. K., Fischer-Walker, C., Ashraf, S., and Walker, N. (2015). Estimating the herd immunity effect of rotavirus vaccine. Vaccine *33*, 3795–3800.
68. Pond, S. L. K., Frost, S. D. W., and Muse, S. V. (2004). HyPhy: hypothesis testing using phylogenies. Bioinformatics *21*, 676–679.
69. Pond, S. L. K., and Frost, S. D. W. (2005). Datamonkey: rapid detection of selective pressure on individual sites of codon alignments. Bioinformatics *21*, 2531–2533.
70. Posada, D., and Crandall, K. A. (2001). Evaluation of methods for detecting recombination from DNA sequences: Computer simulations. Proceedings of the National Academy of Sciences *98*, 13757–13762.
71. Posada, D. (2001). Unveiling the Molecular Clock in the Presence of Recombination. Molecular Biology and Evolution *18*, 1976–1978.
72. Posada, D., and Crandall, K. A. (2002). The Effect of Recombination on the Accuracy of Phylogeny Estimation. J Mol Evol Journal of Molecular Evolution *54*, 396–402.
73. R Core Team (2015). R: A Language and Environment for Statistical Computing. Available at: https://www.r-project.org/.
74. Rambaut, A., Suchard, M. A., Xie, D., and Drummond, A. J. (2014). Tracer v1.6. Tracer v1.6. Available at: http://beast.bio.ed.ac.uk/tracer [Accessed March 13, 2016].
75. Rambaut, A. (2014). FigTree. FigTree. Available at: http://tree.bio.ed.ac.uk/software/figtree/ [Accessed March 13, 2016].
76. Ruiz-Palacios, G. M., Pérez-Schael, I., Velázquez, F. R., Abate, H., Breuer, T., Clemens, S. C., Cheuvart, B., Espinoza, F., Gillard, P., Innis, B. L., et al. (2006). Safety and Efficacy of an Attenuated Vaccine against Severe Rotavirus Gastroenteritis. New England Journal of Medicine N Engl J Med *354*, 11–22.
77. Saiada, F., Rahman, H. N. A., Moni, S., Karim, M. M., Pourkarim, M. R., Azim, T., and Rahman, M. (2010). Clinical presentation and molecular characterization of group B rotaviruses in diarrhoea patients in Bangladesh. Journal of Medical Microbiology *60*, 529–536.
78. Santos, N., and Hoshino, Y. (2004). Global distribution of rotavirus serotypes/genotypes and its implication for the development and implementation of an effective rotavirus vaccine. Rev. Med. Virol. Reviews in Medical Virology *15*, 29–56.
79. Schierup, M. H., and Hein, J. (2000). Consequences of Recombination on Traditional Phylogenetic Analysis. Genetics *156*, 879–891.
80. Schnagl, R. D., Boniface, K., Cardwell, P., Mccarthy, D., Ondracek, C., Coulson, B., Erlich, J., and Morey, F. (2004). Incidence of Group C Human Rotavirus in Central Australia and Sequence Variation of the VP7 and VP4 Genes. Journal of Clinical Microbiology *42*, 2127–2133.
81. Smith, J. (1992). Analyzing the mosaic structure of genes. J Mol Evol Journal of Molecular Evolution *34*.
82. Steyer, A., Poljsak-Prijatelj, M., Barlic-Maganja, D., and Marin, J. (2008). Human, porcine and bovine rotaviruses in Slovenia: evidence of interspecies transmission and genome reassortment. Journal of General Virology *89*, 1690–1698.
83. Steyer, A., Sagadin, M., Kolenc, M., and Poljšak-Prijatelj, M. (2013). Whole genome sequence analysis of bovine G6P[11] rotavirus strain found in a child with gastroenteritis. Infection, Genetics and Evolution *13*, 89–95.
84. Suzuki, Y. (2004). Negative selection on neutralization epitopes of poliovirus surface proteins: implications for prediction of candidate epitopes for immunization. Gene *328*, 127–133.
85. Tao, H., Changan, W., Zhaoying, F., Zinyi, C., Xuejian, C., Xiaoquang, L., Guangmu, C., Henli, Y., Tungxin, C., Weiwe, Y., et al. (1984). Waterborne Outbreak Of Rotavirus Diarrhoea In Adults In China Caused By A Novel Rotavirus. The Lancet *323*, 1139–1142.
86. Tate, J. E., Cortese, M. M., Payne, D. C., Curns, A. T., Yen, C., Esposito, D. H., Cortes, J. E., Lopman, B. A., Patel, M. M., Gentsch, J. R., et al. (2011). Uptake, Impact, and Effectiveness of Rotavirus Vaccination in the United States. The Pediatric Infectious Disease Journal *30*.
87. Tate, J. E., Mutuc, J. D., Panozzo, C. A., Payne, D. C., Cortese, M. M., Cortes, J. E., Yen, C., Esposito, D. H., Lopman, B. A., Patel, M. M., et al. (2011). Sustained Decline in Rotavirus Detections in the United States Following the Introduction of Rotavirus Vaccine in 2006. The Pediatric Infectious Disease Journal *30*.
88. Tate, J. E., Burton, A. H., Boschi-Pinto, C., Steele, A. D., Duque, J., and Parashar, U. D. (2012). 2008 estimate of worldwide rotavirus-associated mortality in children younger than 5 years before the introduction of universal rotavirus vaccination programmes: a systematic review and meta-analysis. The Lancet Infectious Diseases *12*, 136–141.
89. Tavaré, S. (1986). Some Probabilistic and Statistical Problems in the Analysis of DNA Sequences. Lectures Math Life Sci *17*, 57–86.
90. Todd, S., Page, N. A., Steele, A. D., Peenze, I., and Cunliffe, N. A. (2010). Rotavirus Strain Types Circulating in Africa: Review of Studies Published during 1997–2006. The Journal of Infectious Diseases J INFECT DIS *202*.
91. Trojnar, E., Otto, P., and Johne, R. (2009). The first complete genome sequence of a chicken group A rotavirus indicates independent evolution of mammalian and avian strains. Virology *386*, 325–333.
92. Vesikari, T., Matson, D. O., Dennehy, P., Damme, P. V., Santosham, M., Rodriguez, Z., Dallas, M. J., Heyse, J. F., Goveia, M. G., Black, S. B., et al. (2006). Safety and Efficacy of a Pentavalent Human–Bovine (WC3) Reassortant Rotavirus Vaccine. New England Journal of Medicine N Engl J Med *354*, 23–33.
93. Widdowson, M.-A., Meltzer, M. I., Zhang, X., Bresee, J. S., Parashar, U. D., and Glass, R. I. (2007). Cost-effectiveness and Potential Impact of Rotavirus Vaccination in the United States. Pediatrics *119*, 684–697.
94. Yi, J., and Anderson, E. J. (2013). Rotavirus vaccination: short-term indirect herd protection, long-term uncertainty. Expert Review of Vaccines *12*, 585–587.
95. Zeller, M., Donato, C., Trovão, N. S., Cowley, D., Heylen, E., Donker, N. C., Mcallen, J. K., Akopov, A., Kirkness, E. F., Lemey, P., et al. (2015). Genome-Wide Evolutionary Analyses of G1P[8] Strains Isolated Before and After Rotavirus Vaccine Introduction. Genome Biol Evol Genome Biology and Evolution *7*, 2473–2483.