

23. O'Neill G, Adams JE, Bowman RA, Riley TV. A molecular characterization of *Clostridium difficile* isolates from humans, animals and their environments. *Epidemiol Infect.* 1993;111:257–64.
24. Lefebvre SL, Arroyo LG, Weese JS. Epidemic *Clostridium difficile* strain in hospital visitation dog. *Emerg Infect Dis.* 2006;12:1036–7.
25. Kutty PK, Benoit SR, Woods CW, Sena AC, Naggie S, Frederick J, et al. Assessment of *Clostridium difficile*-associated disease surveillance definitions, North Carolina, 2005. *Infect Control Hosp Epidemiol.* 2008;29:197–202. DOI: 10.1086/528813
26. Noren T, Akerlund T, Back E, Sjoberg L, Persson I, Alriksson I, et al. Molecular epidemiology of hospital-associated and community-acquired *Clostridium difficile* infection in a Swedish county. *J Clin Microbiol.* 2004;42:3635–43. DOI: 10.1128/JCM.42.8.3635-3643.2004
27. MacCannell DR, Louie TJ, Gregson DB, Laverdiere M, Labbe AC, Laing F, et al. Molecular analysis of *Clostridium difficile* PCR ribotype 027 isolates from Eastern and Western Canada. *J Clin Microbiol.* 2006;44:2147–52. DOI: 10.1128/JCM.02563-05
28. Limbago B, Long CM, Thompson AD, Killgore GE, Hannett G, Havill N, et al. Isolation and characterization of *Clostridium difficile* responsible for community-associated disease. *International Meeting of the American Society for Microbiology*; 2007 May 21–25; Toronto, Ontario, Canada.
29. Barbut F, Gariazzo B, Bonne L, Lalande V, Burghoffer B, Luiuz R, et al. Clinical features of *Clostridium difficile*-associated infections and molecular characterization of strains: results of a retrospective study, 2000–2004. *Infect Control Hosp Epidemiol.* 2007;28:131–9. DOI: 10.1086/511794
30. Geric B, Rupnik M, Gerding DN, Grabnar M, Johnson S. Distribution of *Clostridium difficile* variant toxinotypes and strains with binary toxin genes among clinical isolates in an American hospital. *J Med Microbiol.* 2004;53:887–94. DOI: 10.1099/jmm.0.45610-0
31. Rupnik M, Kato N, Grabnar M, Kato H. New types of toxin A-negative, toxin B-positive strains among *Clostridium difficile* isolates from Asia. *J Clin Microbiol.* 2003;41:1118–25. DOI: 10.1128/JCM.41.3.1118-1125.2003
32. Stubbs S, Rupnik M, Gibert M, Brazier J, Duerden B, Popoff M. Production of actin-specific ADP-ribosyltransferase (binary toxin) by strains of *Clostridium difficile*. *FEMS Microbiol Lett.* 2000;186:307–12. DOI: 10.1111/j.1574-6968.2000.tb09122.x
33. Pituch H, Kreft D, Obuch-Woszczatynski P, Wultanska D, Meisel-Mikolajczyk F, Luczak M, et al. Clonal spread of a *Clostridium difficile* strain with a complete set of toxin A, toxin B, and binary toxin genes among Polish patients with *Clostridium difficile*-associated diarrhea. *J Clin Microbiol.* 2005;43:472–5. DOI: 10.1128/JCM.43.1.472-475.2005
34. Buttrini M, Spigaglia P, Somenzi P, Zerbini L, Dettori G, Chezzi C, et al. Epidemiology of *Clostridium difficile* strains with binary-toxin genes among clinical isolates in an Italian hospital. *2nd International Clostridium difficile Symposium*; 2007 June 6–9; Maribor, Slovenia.
35. Pirs T, Avbersek J, Ocepek M, Rupnik M. Isolation of *Clostridium difficile* from food animals in Slovenia. *2nd International Clostridium difficile Symposium*; 2007 June 6–9; Maribor, Slovenia.
36. Curry SR, Marsh JW, Muto CA, O'Leary MM, Pasculle AW, Harrison LH. *tcdC* genotypes associated with severe TcdC truncation in an epidemic clone and other strains of *Clostridium difficile*. *J Clin Microbiol.* 2007;45:215–21. DOI: 10.1128/JCM.01599-06
37. McFarland LV, Beneda HW, Clarridge JE, Raugi GJ. Implications of the changing face of *Clostridium difficile* disease for health care practitioners. *Am J Infect Control.* 2007;35:237–53. DOI: 10.1016/j.ajic.2006.06.004
38. Arroyo LG, Kruth SA, Willey BM, Staempfli HR, Low DE, Weese JS. PCR ribotyping of *Clostridium difficile* isolates originating from human and animal sources. *J Med Microbiol.* 2005;54:163–6. DOI: 10.1099/jmm.0.45805-0

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etymologia

Sapovirus

[Sap' o-vi'' rəs]

Sapovirus, formerly Sapporo-like virus after Sapporo, Japan, where first recognized during an outbreak in an orphanage in 1977. A genus of viruses of the family Caliciviridae, they cause self-limited, acute foodborne gastroenteritis. Morphologically similar viruses were detected in a subsequent series of outbreaks in the same institution between 1977 and 1982. Sapoviruses play an important role in outbreaks of gastroenteritis in infants and have recently been found to infect adults.

Source: Dorland's illustrated medical dictionary, 31st ed. Philadelphia: Saunders/Elsevier; 2007; Chiba S, Nakata S, Numata-Kinoshita K, Honma S. Sapporo virus: history and recent findings. *J Infect Dis.* 2000;181(Suppl 2):S303–8.