

The Breadth of Viruses in Human Semen

Technical Appendix

Technical Appendix Table. Viruses that are capable of causing viremia and found in human semen*

Viruses	Family	Detection in semen, maximum detection time, d	Isolation from semen maximum detection time, d	Evidence for sexual transmission within same cohort
Adenoviruses	Adenoviridae	AD (1)	RCC	Unknown
Transfusion transmitted virus	Anelloviridae	NAA (2)	No data found	Unknown
Lassa fever virus†	Arenaviridae	NAA, 103 (3)	RCC, 20 (3)	Unknown
Rift Valley fever virus†	Bunyaviridae	NAA, 117 (4)	No data found	Unknown
Ebola virus	Filoviridae	NAA, 531 (5)	RCC, 82 (6)	Epi + mol + sem (7)
Marburg virus†	Filoviridae	AD, 83 (8)	RAS, 83 (8)	Epi + sem (9)
GB virus C	Flaviviridae	NAA (10)	No data found	Epi + mol (11)
Hepatitis C virus	Flaviviridae	NAA (12); AD (13)	No data found	Epi + mol (14)
Zika virus	Flaviviridae	NAA, 188 (15)	RCC, 7 (16)	Epi + mol + sem (17)
Hepatitis B virus	Hepadnaviridae	NAA (18); AD (19)	RAS (20)	Epi + mol (21)
Cytomegalovirus	Herpesviridae	NAA (22)	RCC (23)	Epi + mol + sem (24)
Epstein Barr virus	Herpesviridae	NAA (22)	No data found	Epi and semen (25)
Human herpes virus 8	Herpesviridae	NAA (26)	RCC (27)	Epi + mol (28)
Human herpes virus 7	Herpesviridae	NAA (29)	No data found	Unknown
Human herpes virus 6	Herpesviridae	NAA (22)	No data found	Unknown
Human simplex viruses 1 and 2	Herpesviridae	NAA (22); AD (1)	RCC (1)	Epi + mol + sem (30)
Varicella zoster virus	Herpesviridae	NAA (22)	No data found	Unknown
Mumps virus†	Paramyxoviridae	NAA, 40 (31)	RCC, 14 (31)	Unknown
Adeno-associated virus	Parvoviridae	NAA (32)	RCC (33)	Unknown
BK virus	Polyomaviridae	NAA (34)	No data found	Unknown
JC virus	Polyomaviridae	NAA (34)	No data found	Unknown
Simian virus 40	Polyomaviridae	NAA (35)	No data found	Unknown
HIV	Retroviridae	NAA (36), AD (37)	RCC (38)	Epi + mol + sem (39)
Human T-cell lymphoma virus 1†	Retroviridae	No data found	RAS (40)	Epi + mol (41)
Simian foamy virus	Retroviridae	NAA (42)	No data found	Unknown
Chikungunya virus†	Togaviridae	NAA, 30 (43)	No data found	Unknown

*Presence of nucleic acid or antigen in semen does not represent the presence of replication-competent or infection-competent virus, which can generally only be demonstrated by isolation and culture of virus. Maximum detection time refers to time from symptom onset (only in viruses that cause acute only, not chronic, infection). AD, antigen detection; Epi, Epidemiological evidence of sexual transmission; mol, molecular/phylogenetic evidence of sexual transmission; NAA, nucleic acid amplification or detection; RAS, replication in animal system; RCC, replication in cell culture; sem, isolation from semen. †Data found only in the context of case reports, and not case series, case control, or cohort studies.

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