

**Table S1.** List of primers for intestinal dsDNA viruses in the studied panel NGS panel.

Name of virus	Strain	Primer names	Primer sequences (5'-3')	Length of PCR product	Reference
<b>Bacteriophages</b>					
<i>E.coli</i> X52686.1 Bacteriophage T4 rIIA gene and ORF rIIA.1	T4	T4F	CCATCCATAGAGAAAA-TATCAGAACGA	100	Ninove et al., 2011
		T4R	TAAA-TAATTCCTCTTTTCCCAGCG		
<i>E.coli</i>	MS2	MS2F	CTCTGAGAGCGGCTCTATTGGT	100	Ninove et al., 2011
		MS2R	GTTCCCTACAAC-GAGCCTAAATTC		
<i>Klebsiella pneumonia</i> phage	kpv71 KU666550 (Autographviridae)	71F_NcoI	AGTGCCCATGGCATTAAATT-AGATTAGTAGCTC		Solovieva et al., 2018; Knecht et al, 2019
		71R_XhoI	CATACTCGAGATACAC-CTCCCAGGCTACCTG		
	Kpv74	74F_NcoI	GAATCCATGGCACTAGTAGAT-TTAGTGAGG		Solovieva et al., 2018 A.Latka, 2019
		74R_XhoI	ATTACTCGAGCACATT-GCACAGCAAGTACG		
<i>Salmonella enteric</i> phages	SEN22	F4c5-F	CAACTTGC GACTGCTCTTTG	474	Mikalová et al., 2017
		F4c5-R	CGAAGGAAGCGTTAGACCTG		
	SEN2	F3c7-F	GTTGGGTGGAAGAAGCTGAA	413	Mikalová et al., 2017
		F3c7-R	AGCATCTGGCCCTGTATCTG		
	SEN8	F20c3-F	TTCAGTG GTTGGTTC CATGA	471	Mikalová et al., 2017
		F20c3-R	GCGTTAAGAAGCCAGAAACG		
	SEN8	F20c5-F	TTATTTGCTGCGCTGACATC	494	Mikalová et al., 2017
		F20c5-R	TCAGAAGAAGGCCTGGCTAA		
	SEN23	F6c1-F	GGCCGATCAGTTGCTTAAAA	232	Mikalová et al., 2017
		F6c1-R	CTCATGCCCCAACATTTTCT		
	SEN4	F9c2-F	GCCGTCTGATAACCCAGAAA	456	Mikalová et al., 2017
		F9c2-R	CGTTTTCCAGATCAGCCTGT		
	SEN34	F38c2-F	AAGTGGGGA ACTGCTGAAGA	487	Mikalová et al., 2017
		F38c2-R	AACGCTGCCATAAGCTGACT		
	SEN1	F1c3-F	AAAGGCCG GTTAGGTAGCTC	456	Mikalová et al., 2017
		F1c3-R	ATCGCTCGCATGTTTAACG		
	SEN22	F4c4-F	AATGGATGCAGTCAGGGAAG	421	Mikalová et al., 2017
		F4c4-R	GTCAATCATCGCGTTTTCT		
	SEN5	F10c1-F	TTCGCAAATGAAATCGAGTG	443	Mikalová et al., 2017
		F10c1-R	ATCGGCAACTTACCGTCATC		
	SEN23	F6c4-F	GTTGTT CAGGCC GTTGATTT	284	Mikalová et al., 2017
		F6c4-R	GTACATCGCCTGAAGGGAGA		
	SEN34	F38c1-F	GTTTATGGCGCTGAAAAGGA	457	Mikalová et al., 2017
		F38c1-R	GTTGTT CAGGCC GTTGATTT		
<i>Bacteroides</i>	CrAssphage	CrassPhF	AGACGCGATGAAGAACTGCT	590	Yangpeng Li et al., 2021
		CrassPhR	CCATCGGGAGCAGTAAGACC	500	
		CrPhPolF	CGGCGGGTTAATCAAAA-TAGAA	500	Yangpeng Li et al., 2021
		CrPhPolR	GCGGAGAACCCCATTTATTAA-TAAG		

## Eukaryotic cell viruses

Cytomegalovirus (DNA)	AD169, Toledo, Towne	UL55N_F	GGA TCT GGT GCC TGG TAG TC	250	Grosjean et al., 2009
		UL55N_R	CGA ATA AGA TCC GTA CCC TG		
	AD169, Toledo, Towne	UL55C_F	TGT TCT GGC AAG GTA TCA	250	
		UL55C_R	AGC A GTG AAC TGC AGC TGG GCG TA		
	AD169	UL73_F	TTC GGT CGG TCA ACA TCG	361	
		UL73_R	TAA G GGT GGT TGC AGT AAA GTT CTG GA		
	Toledo	UL75_F	TCC TGG GAT CCT TTC TCT CCT	429	
		UL75_R	TCT ATG GGT CTC CCG TAG GTG TTG		
Varicella Zoster (DNA) Human herpesvirus 3 (VZV, strain Dumas) complete genome - X04370	Dumas, Oka	vzv49f	TGAGCAACTTGATCCGTGTC	347	Jin et al., 2017
		vzv49r	CCTCGCCATAAAGCCACTAC		
		vzv62f	ACAAACACAGGGGTTGTTCG	339	
		vzv62r	GCGTTTTATTACTGTTCGACC		
		vzv52f	CGGTGGACACACAGAAAGAG	360	
		vzv52r	GCCCTGAACCAAGTTCTACCA		
		vzv11f	ACCCACCATCATTGAGTCC	350	
		vzv11r	GCCGTTTGAGACCGATGATA		
Adenovirus	AdV ACF F1	GGT CTG GTG CAA TTC GCC	135	Ebner et al, 2005	
	AdV ACF R1	CAC GGG CAC AAA ACG CA			
	AdV ACF F2	ACC TGG GCC AAA ACC TTC TC	75		
	AdV ACF R2	CGT CCA TGG GAT CCA CCT C			
	AdV ACF F3	CCC GTG TTT GAC AAC GAA GG	112		
	AdV ACF R3	TTA GAG CTA GGC ATA AAT TCT ACA GCA			
	AdV BDE_F	ACA TGC ACA TCG CCG G	143		
	AdV BDE_R	CGG TCS GTG GTC ACA TC			
Adenovirus	Hexon gene	ADHEX2F1	AACACCTACGAC-TACATGAATGG	133-155	Ylihäsilä et al., 2013 Ebner K, et al., 2005
		ADHEX2F2		130-155	
		ADHEX2F3	AAAAACACCTACGAC-TACATGAACGG		
		Adhex1R	AACACCTACGATTA-TATGAACAAGC	133-157	
		Adhex1R	ACATCCTTCCTGAAGTTCCA	385-404	

## Sources:

Ninove L, Nougairède A, Gazin C, Thirion L, Delogu I, Zandotti C, Charrel RN, De Lamballerie X. RNA and DNA bacteriophages as molecular diagnosis controls in clinical virology: a comprehensive study of more than 45,000 routine PCR tests. *PLoS One*. 2011;6(2):e16142. doi: 10.1371/journal.pone.0016142.

Solovieva EV, Myakinina VP, Kislichkina AA, Krasilnikova VM, Verevkin VV, Mochalov VV, Lev AI, Fursova NK, Volozhantsev NV. Comparative genome analysis of novel Podoviruses lytic for hypermucoviscous *Klebsiella pneumoniae* of K1, K2, and K57 capsular types. *Virus Res*. 2018;243:10-18. doi: 10.1016/j.virusres.2017.09.026.

Latka A, Lemire S, Grimon D, Dams D, Maciejewska B, Lu T, Drulis-Kawa Z, Briers Y. Engineering the Modular Receptor-Binding Proteins of *Klebsiella* Phages Switches Their Capsule Serotype Specificity. *mBio*. 2021 May 4;12(3):e00455-21. doi: 10.1128/mBio.00455-21.

Mikalová L, Bosák J, Hříbková H, Dědičová D, Benada O, Šmarda J, Šmajs D. Novel Temperate Phages of *Salmonella enterica* subsp. *salamae* and subsp. *diarizonae* and Their Activity against Pathogenic *S. enterica* subsp. *enterica* Isolates. *PLoS One*. 2017;12(1):e0170734. doi: 10.1371/journal.pone.0170734.

Li Y, Gordon E, Shean RC, Idle A, Deng X, Greninger AL, Delwart E. CrAssphage and its bacterial host in cat feces. *Sci Rep*. 2021;11(1):815. doi: 10.1038/s41598-020-80076-9.

Grosjean J, Hantz S, Cotin S, Baclet MC, Mengelle C, Trapes L, Virey B, Undreiner F, Brosset P, Pasquier C, Denis F, Alain S. Direct genotyping of cytomegalovirus envelope glycoproteins from toddler's saliva samples. *J Clin Virol*. 2009; 46 Suppl 4:S43-8. doi: 10.1016/j.jcv.2009.08.018.

Jin L, Xu S, Maple PAC, Xu W, Brown KE. Differentiation between wild-type and vaccines strains of varicella zoster virus (VZV) based on four single nucleotide polymorphisms. *Epidemiol Infect*. 2017; 145(12):2618-2625. doi: 10.1017/S0950268817001509.

Ebner K, Suda M, Watzinger F, Lion T. Molecular detection and quantitative analysis of the entire spectrum of human adenoviruses by a two-reaction real-time PCR assay. *J Clin Microbiol*. 2005; 43(7):3049-53. doi: 10.1128/JCM.43.7.3049-3053.2005.

Ylihäsälä M, Harju E, Arppe R, Hattara L, Hölsä J, Saviranta P, Soukka T, Waris M. Genotyping of clinically relevant human adenoviruses by array-in-well hybridization assay. *Clin Microbiol Infection*. 2013; 19(6): 551-557. doi: 10.1111/j.1469-0691.2012.03926.x