

Table 1. Most frequent amino acids at known RAS positions in reference sequences from all known assigned, provisionally assigned or unassigned HCV genotype (GT) subtypes (recovered from never-treated patients). Amino acids conferring reduced susceptibility to the corresponding DAAs were defined according to the “EASL recommendations on treatment of hepatitis C: Final update of the series 2020”. Reference strains were obtained from https://ictv.global/sg_wiki/flaviviridae/hepacivirus/table1. Amino acids conferring reduced susceptibility to the DAAs targeting the corresponding regions are shown in bold red. Polymorphisms not reported to be associated with reduced susceptibility to the corresponding DAAs are shown in bold black. Other amino acids are shown in gray. *For these tentatively assigned subtypes, only partial sequences are available in the databases.

HCV genotype 1 subtypes																																			
HCV subtype reference sequences	NS3 positions															NS5A positions										NS5B positions									
	36	41	43	54	55	56	80	122	155	156	158	166	168	170	175	24	26	28	29	30	31	32	38	58	62	92	93	150	159	206	282	316	320	321	
GT-1a 1a_M62321	V	Q	F	T	V	Y	Q	S	R	A	V	A	D	I	L	K	K	M	P	Q	L	P	S	H	E	A	Y	E	L	Q	S	C	L	V	
GT-1b 1b_M58335	V	Q	F	T	V	Y	Q	S	R	A	V	A	D	I	M	Q	K	L	P	Q	L	P	S	P	Q	A	Y	E	L	N	S	N	L	V	
GT-1c 1d_AY051292	V	Q	F	T	V	Y	Q	N	R	A	V	A	D	V	L	K	K	V	P	Q	L	P	S	P	N	A	Y	E	L	K	S	C	L	V	
GT-1d 1d_KJ439768	V	Q	F	S	V	Y	K	S	R	A	V	A	D	V	M	K	X	L	P	R	M	P	S	P	Q	A	Y	E	L	N	S	C	L	V	
GT-1e 1e_KC248194	L	Q	F	S	V	Y	Q	N	R	A	V	A	D	V	L	K	K	M	P	Q	M	P	S	S	Q	T	Y	E	L	D	S	C	L	V	
GT-1f* 1f_L38371	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	C	L	V
GT-1g 1g_AM910652	V	Q	F	S	V	Y	Q	S	R	A	V	A	D	V	L	S	K	L	P	R	L	P	S	P	Q	A	F	E	L	K	S	C	L	V	
GT-1h 1h_KC248198	V	Q	F	T	V	Y	Q	S	R	A	V	A	D	V	M	Q	K	L	P	R	L	P	S	P	N	A	Y	S	L	K	S	C	L	V	
GT-1i 1i_KJ439772	V	Q	F	T	V	Y	Q	S	R	A	V	A	D	V	M	Q	K	L	P	R	L	P	S	P	Q	A	Y	E	L	N	S	C	L	V	

GT-1j 1j_KJ439773	V	Q	F	T	V	Y	Q	N	R	A	V	A	D	V	L	K	K	M	P	Q	L	P	S	P	E	A	Y	E	L	N	S	C	L	V
GT-1k 1k_KJ439774	V	Q	F	T	V	Y	Q	T	R	A	V	A	D	I	L	K	K	A	P	Q	L	P	S	P	E	A	Y	E	L	N	S	C	L	I
GT-1l 1l_KC248197	V	Q	F	T	V	Y	L	S	R	A	V	A	D	I	L	S	K	M	P	Q	M	P	S	P	Q	A	Y	E	L	K	S	C	L	V
GT-1m 1l_KJ439778	V	Q	F	T	V	Y	Q	S	R	A	V	A	D	I	L	K	K	M	P	Q	M	P	S	P	D	A	C	E	L	N	S	C	L	V
GT-1n 1l_KJ439775	V	Q	F	T	V	F	L	S	R	A	V	A	D	I	L	K	K	M	P	Q	L	P	S	P	D	A	Y	E	L	N	S	C	L	I
GT-1o 1l_KJ439779	V	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	K	K	M	P	Q	M	P	S	P	D	A	Y	E	L	K	S	C	L	V
Unassigned GT-1 1_AJ851228	V	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	M	K	K	L	P	S	V	P	S	P	E	A	H	E	L	Q	S	C	L	V
Unassigned GT-1 1_KC248195	V	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	G	K	A	P	K	I	P	S	P	Q	A	Y	E	L	N	S	C	L	V
Unassigned GT-1 1_HQ537007	M	Q	F	T	V	X	L	G	X	A	V	A	D	I	L	K	K	F	P	Q	M	P	S	P	Q	A	Y	E	L	K	S	C	L	V
Unassigned GT-1 1_KJ439780	V	Q	F	T	V	Y	K	G	R	A	V	A	D	I	L	K	K	L	P	Q	M	P	S	P	D	A	Y	E	L	K	S	C	L	V
Unassigned GT-1 1_KJ439776	V	Q	F	T	V	Y	L	S	R	A	V	A	D	V	L	A	K	M	P	K	M	P	S	P	Q	A	Y	E	L	K	S	C	L	V
Unassigned GT-1 1_KJ439777	V	Q	F	T	V	Y	Q	S	K	A	V	A	D	V	L	K	K	A	P	H	L	P	S	P	E	A	Y	E	L	N	S	N	L	V
Unassigned GT-1 1_KY348757	V	Q	F	T	V	Y	Q	S	R	A	V	A	D	V	M	K	K	L	P	L	V	P	S	S	Q	A	H	E	L	N	S	C	L	V
Unassigned GT-1 1_MH921830	V	Q	F	T	V	Y	Q	T	R	A	V	A	E	V	L	K	K	L	P	Q	L	P	S	P	Q	A	F	E	L	S	S	C	L	V

HCV genotype 2 subtypes																																					
HCV subtype reference sequences	NS3 positions															NS5A positions										NS5B positions											
	36	41	43	54	55	56	80	122	155	156	158	166	168	170	175	24	26	28	29	30	31	32	38	58	62	92	93	150	159	206	282	316	320	321			
GT-2a 2a_AB047639	L	Q	F	T	V	Y	G	K	R	A	V	S	D	I	L	T	K	F	P	K	L	P	S	P	N	C	Y	A	L	K	S	C	L	V			
GT-2b 2b_AB030907	L	Q	F	T	V	Y	G	K	R	A	V	S	D	I	L	S	K	L	P	K	M	P	S	S	N	C	Y	A	L	K	S	C	L	V			
GT-2c 2c_D50409	L	Q	F	T	V	F	G	R	R	A	V	S	D	I	L	S	K	F	P	R	L	P	S	P	N	C	Y	A	L	Q	S	C	L	V			
GT-2d 2d_JF735114	L	Q	F	T	V	F	G	R	R	X	V	S	D	I	L	S	K	L	P	K	L	P	S	P	N	C	Y	I	L	R	S	C	L	V			
GT-2e 2e_JF735120	L	Q	F	A	V	F	G	R	R	A	V	S	D	I	L	S	K	F	P	K	M	P	S	S	N	S	Y	S	L	R	S	C	L	V			
GT-2f 2f_KC844050	L	Q	F	T	V	F	G	R	R	A	V	S	D	I	L	S	K	F	P	K	M	P	S	P	N	C	Y	A	L	R	S	C	L	V			
GT-2g* 2g_X93323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	-	-	-	
GT-2h* 2h_X93327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	-	-	-
GT-2i 2i_DQ155561	L	Q	F	T	V	F	G	R	R	A	V	S	D	I	L	S	K	F	P	K	M	P	S	P	N	C	Y	A	L	R	S	C	L	V			
GT-2j 2j_JF735113	L	Q	F	T	V	F	G	R	R	A	V	S	D	I	L	S	K	F	P	K	M	P	S	P	X	C	Y	A	L	R	S	C	L	V			
GT-2k 2k_AB031663	L	Q	F	T	V	F	G	R	R	A	I	S	D	I	L	S	K	L	P	K	M	P	S	P	V	C	Y	T	L	R	S	C	L	V			
GT-2l 2l_KC197240	L	Q	F	T	V	Y	G	R	R	A	V	A	D	V	L	S	K	L	P	K	L	P	S	P	Y	S	Y	A	L	N	S	C	L	V			

GT-2m 2m_JX227967	L	Q	F	T	V	F	G	R	R	A	V	S	D	I	L	S	K	L	P	K	M	P	S	P	A	S	Y	A	L	Q	S	C	L	V				
GT-2n* 2n_L44602	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	C	L	V		
GT-2o* 2o_L38373	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	C	L	V	
GT-2p* 2p_L44601	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	C	L	V
GT-2q 2q_FN666429	L	Q	F	T	V	F	G	R	R	A	V	S	D	I	L	S	K	L	P	K	M	P	S	P	N	C	Y	A	L	R	S	C	L	V				
GT-2r 2r_JF735115	L	Q	F	T	V	F	G	T	R	A	V	S	D	I	L	S	K	F	P	K	M	P	S	P	N	C	Y	V	L	R	S	C	L	I				
GT-2s* 2s_HM777332	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	C	L	V
GT-2t 2t_KC197238	L	Q	F	T	V	F	G	R	R	A	V	A	D	I	L	S	K	L	P	K	L	P	S	P	T	C	Y	L	L	Q	S	C	L	V				
GT-2u 2u_JF735112	L	Q	F	T	V	Y	G	K	R	A	V	A	D	I	L	S	K	F	P	K	M	P	S	P	N	C	Y	M	L	Q	S	C	L	V				
GT-2v 2v_MW041295	L	Q	F	T	V	F	G	R	R	A	V	S	D	I	L	S	K	L	P	K	M	P	S	P	V	C	Y	A	L	R	S	C	L	V				
Unassigned GT-2 2_JF735119	L	Q	F	T	V	Y	G	X	R	A	V	S	D	I	L	S	K	C	P	K	M	P	S	P	N	C	Y	A	L	Q	S	C	L	V				
Unassigned GT-2 2_JF735110	L	Q	F	T	V	F	G	R	R	A	V	S	D	I	L	S	K	F	P	X	M	P	S	P	N	C	Y	A	L	E	S	C	L	V				
Unassigned GT-2 2_JF735117	L	Q	F	X	V	Y	G	R	R	A	V	S	D	I	L	S	K	L	P	K	M	P	S	P	N	C	Y	A	L	Q	S	C	L	V				
Unassigned GT-2 2_JF735116	L	Q	F	T	V	Y	G	R	R	A	V	A	D	I	L	S	K	L	P	K	L	P	S	P	N	C	Y	A	L	R	S	C	L	V				
Unassigned GT-2 2_JF735118	L	Q	F	T	V	F	G	R	R	A	V	S	D	I	L	S	K	F	P	K	L	P	S	P	N	C	Y	A	L	K	S	C	L	V				

Unassigned GT-2 2_KC197236	L	Q	F	T	V	F	G	R	R	A	V	S	D	I	L	S	K	L	P	K	L	P	S	P	N	C	Y	A	L	N	S	C	L	V
Unassigned GT-2 2_KC197237	L	Q	F	T	V	Y	G	T	R	A	V	S	D	I	L	S	K	F	P	K	M	P	S	P	D	C	Y	A	L	K	S	C	L	V
Unassigned GT-2 2_KC197239	L	Q	F	T	V	F	G	R	R	A	V	S	D	I	L	S	K	F	P	K	L	P	S	P	N	C	Y	A	L	N	S	C	L	V
Unassigned GT-2 2_MW041294	L	Q	F	T	V	F	G	R	R	A	V	S	D	I	L	S	K	L	P	K	L	P	S	P	N	C	Y	A	L	R	S	C	L	V

HCV genotype 3 subtypes																																		
HCV subtype reference sequences	NS3 positions															NS5A positions										NS5B positions								
	36	41	43	54	55	56	80	122	155	156	158	166	168	170	175	24	26	28	29	30	31	32	38	58	62	92	93	150	159	206	282	316	320	321
GT-3a 3a_D28917	L	Q	F	T	V	Y	Q	S	R	A	V	A	Q	I	P	S	K	M	P	A	L	P	S	P	S	E	Y	A	L	K	S	C	L	V
GT-3b 3b_D49374	L	Q	F	T	V	Y	Q	S	R	A	V	A	Q	I	L	S	K	M	P	K	V	P	S	P	D	E	Y	A	L	K	S	C	L	V
GT-3d 3d_KJ470619	L	Q	F	T	V	Y	Q	S	R	A	V	A	Q	I	P	S	K	M	P	K	M	P	S	P	S	E	Y	S	L	E	S	C	L	V
GT-3e 3e_KJ470618	L	Q	F	T	V	Y	Q	S	R	A	V	G	Q	I	L	S	K	M	P	K	L	P	S	P	V	E	Y	S	L	K	S	C	L	V
GT-3g 3g_JF735123	L	Q	F	T	V	Y	Q	S	R	A	V	S	Q	I	L	T	K	M	P	K	M	P	S	P	Y	E	Y	S	L	K	S	C	L	V
GT-3h 3h_JF735121	L	Q	F	T	V	Y	Q	S	R	A	I	S	Q	I	L	S	K	M	P	A	L	P	S	P	M	E	Y	S	L	D	S	C	L	V
GT-3i 3i_JX227955	L	Q	F	T	V	Y	Q	S	R	A	V	A	Q	V	L	S	K	M	P	R	L	P	S	P	M	E	Y	T	L	E	S	C	L	V
GT-3k 3k_JF735122	L	Q	F	T	V	Y	Q	S	R	A	V	A	Q	I	L	G	K	M	P	K	M	P	S	P	L	E	Y	H	L	K	S	C	L	V
Unassigned GT-3 3_JF735124	L	Q	F	S	V	Y	Q	S	R	A	V	S	Q	V	L	S	K	M	P	S	L	P	S	P	T	E	Y	Q	L	A	S	C	L	V

HCV genotype 4 subtypes																																			
HCV subtype reference sequences	NS3 positions															NS5A positions										NS5B positions									
	36	41	43	54	55	56	80	122	155	156	158	166	168	170	175	24	26	28	29	30	31	32	38	58	62	92	93	150	159	206	282	316	320	321	
GT-4a 4a_Y11604	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	K	K	V	P	L	M	P	S	P	D	A	Y	A	L	T	T	C	L	V	
GT-4b 4b_FJ462435	L	Q	F	T	V	X	Q	S	R	A	V	A	D	V	L	K	K	L	P	S	M	P	E	P	T	A	H	E	K	L	S	C	L	V	
GT-4c 4c_FJ462436	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	K	K	L	P	R	M	P	S	P	Q	A	Y	E	L	S	S	C	L	V	
GT-4d 4d_FJ462437	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	K	K	L	P	R	M	P	S	T	E	A	Y	E	L	N	S	C	L	V	
GT-4e* 4e_L29590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	C	L	V
GT-4f 4f_EU392175	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	K	K	L	P	Q	M	P	S	P	Q	A	Y	Q	L	K	S	C	L	V	
GT-4g 4g_FJ462432	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	K	K	L	P	L	M	P	S	P	S	A	H	E	L	K	S	C	X	V	
GT-4h 4h_L29611	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	C	L	V
GT-4i 4i_L36437	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	C	L	V
GT-4j 4j_L36438	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	C	L	V
GT-4k 4k_FJ462438	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	K	K	L	P	R	M	P	S	P	E	A	Y	E	L	K	S	C	L	V	
GT-4l 4l_FJ839870	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	K	K	L	P	R	M	P	S	P	E	A	Y	E	L	T	S	C	L	V	

GT-4m 4m_FJ462433	X	Q	F	T	V	Y	Q	S	R	A	V	A	D	I	L	K	K	L	P	S	M	P	S	P	R	A	Y	E	L	D	S	C	L	V
GT-4n 4n_FJ462441	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	K	K	L	P	R	M	P	S	T	E	A	Y	E	L	S	S	C	L	V
GT-4o 4o_FJ462440	L	Q	F	T	V	Y	X	T	R	Q	V	A	D	V	L	K	K	M	X	T	M	P	S	P	E	A	Y	E	L	A	S	C	L	V
GT-4p 4p_FJ462431	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	K	K	L	P	R	M	P	S	P	E	A	Y	E	L	N	S	C	L	V
GT-4q 4q_FJ462434	L	Q	F	T	V	Y	Q	N	R	A	V	A	D	V	L	K	K	L	P	R	M	P	S	P	E	A	Y	E	L	A	S	C	L	V
GT-4r 4r_FJ462439	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	K	K	I	P	R	L	P	S	P	N	A	Y	E	L	K	S	C	L	V
GT-4s 4s_JF735136	L	Q	F	T	V	Y	Q	N	R	A	V	A	T	V	L	K	K	L	P	R	L	P	S	P	E	A	Y	E	L	D	S	C	L	V
GT-4t 4t_FJ839869	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	K	K	L	P	R	M	P	S	P	E	A	Y	E	L	A	S	C	L	V
GT-4v 4v_JX227959	L	Q	F	T	V	Y	Q	N	R	A	V	A	D	V	L	K	K	L	P	R	M	P	S	P	E	A	Y	E	L	T	S	C	L	V
GT-4w3 4w3_FJ025855	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	K	K	M	P	S	M	P	S	P	E	A	S	E	L	K	S	C	L	V
Unassigned GT-4 4_JX227964	L	Q	F	T	V	Y	Q	T	R	A	V	S	D	V	L	K	K	L	P	R	M	P	S	P	E	A	Y	E	L	K	S	C	L	V
Unassigned GT-4 44_FJ025854	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	K	K	L	P	A	M	P	S	P	D	A	T	E	L	K	S	C	L	V
Unassigned GT-4 44_JF735127	L	Q	F	T	V	F	Q	T	R	A	V	A	D	V	L	K	K	L	P	L	M	P	S	P	D	A	H	E	L	R	S	C	L	V
Unassigned GT-4 44_JF735132	L	Q	F	T	V	Y	Q	S	R	A	V	A	D	I	L	K	K	L	P	R	M	P	S	S	E	A	Y	E	L	N	S	C	L	V
Unassigned GT-4 44_JF735131	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	K	K	V	P	R	M	P	S	P	E	A	Y	E	L	A	S	C	L	V

Unassigned GT-4 44_JF735130	L	Q	F	T	V	Y	Q	N	R	A	I	A	E	V	L	K	K	L	P	R	M	P	S	P	E	A	S	E	L	S	S	C	L	V
Unassigned GT-4 44_JF735129	L	Q	F	T	X	Y	Q	T	R	A	V	A	D	V	L	K	K	M	P	R	L	P	S	P	N	A	Y	E	L	S	S	C	L	V
Unassigned GT-4 44_JF735138	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	K	K	L	P	L	M	P	S	T	E	A	H	E	L	K	S	C	L	V
Unassigned GT-4 44_JF735135	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	K	K	L	P	R	L	P	S	P	E	A	Y	A	L	N	S	C	L	V
Unassigned GT-4 44_JF735134	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	L	K	K	L	P	L	M	P	S	P	D	A	Y	E	L	R	S	C	L	V

HCV genotype 5 subtypes																																		
HCV subtype reference sequences	NS3 positions															NS5A positions										NS5B positions								
	36	41	43	54	55	56	80	122	155	156	158	166	168	170	175	24	26	28	29	30	31	32	38	58	62	92	93	150	159	206	282	316	320	321
GT-5a 5a_AF064490	L	Q	F	T	V	F	K	T	R	A	V	A	D	I	L	Q	K	L	P	Q	L	P	S	P	T	A	T	S	L	K	S	C	L	V
Unassigned GT-5 5_KT595242.1	L	Q	F	T	V	F	K	S	R	A	V	A	E	V	L	Q	K	L	P	Q	L	P	S	P	M	A	T	S	L	R	S	C	L	V

HCV genotype 6 subtypes																																		
HCV subtype reference sequences	NS3 positions															NS5A positions										NS5B positions								
	36	41	43	54	55	56	80	122	155	156	158	166	168	170	175	24	26	28	29	30	31	32	38	58	62	92	93	150	159	206	282	316	320	321
GT-6a 6a_AY859526	V	Q	F	T	V	Y	K	N	R	A	V	S	D	I	M	Q	K	F	P	R	L	P	S	T	V	A	T	S	L	K	S	C	L	V
GT-6b 6b_D84262	V	Q	F	T	V	Y	Q	T	R	A	V	A	D	I	M	K	K	T	P	R	I	P	S	S	Q	A	T	S	L	K	S	C	L	V
GT-6c 6c_EF424629	V	Q	F	T	V	Y	Q	S	R	A	V	A	D	V	M	K	K	V	P	A	L	P	S	G	N	P	T	Q	L	K	S	C	L	V
GT-6d 6d_D84263	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	M	R	K	V	P	T	L	P	S	S	N	A	I	Q	L	K	S	C	L	V
GT-6e 6e_DQ314805	V	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	M	K	K	V	P	S	L	P	S	P	A	A	T	R	L	R	S	C	L	V
GT-6f 6f_DQ835760	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	M	K	K	A	P	S	L	P	S	S	A	A	T	Q	L	Q	S	C	L	V
GT-6g 6g_D63822	L	Q	F	T	V	Y	Q	N	R	A	V	A	D	V	M	K	K	M	P	S	L	P	S	P	S	A	T	S	L	K	S	C	L	V
GT-6h 6h_D84265	V	Q	F	T	V	Y	Q	N	R	A	V	S	D	A	M	K	K	V	P	A	L	P	S	P	E	A	T	S	L	K	S	C	L	V
GT-6i 6i_DQ835770	V	Q	F	T	V	Y	Q	S	R	A	X	S	D	V	M	K	K	X	R	A	L	P	S	P	D	A	T	S	L	T	S	C	L	V
GT-6j 6j_DQ835769	V	Q	F	T	V	Y	Q	N	R	A	V	S	D	V	M	K	K	V	X	A	L	P	S	P	D	A	X	S	L	K	S	C	L	V
GT-6k 6k_D84264	V	Q	F	T	V	Y	Q	T	R	A	V	S	D	V	M	K	K	V	P	A	L	P	S	P	D	A	T	S	L	K	S	C	L	V
GT-6l 6l_EF424628	V	Q	F	T	V	Y	Q	S	R	A	V	S	D	V	M	K	K	V	P	A	L	P	S	P	D	A	T	S	L	S	S	C	L	V

GT-6m 6m_DQ835767	V	Q	F	T	V	Y	Q	T	R	A	V	S	D	I	M	K	K	V	P	S	L	P	S	T	V	A	S	S	L	E	S	C	L	V
GT-6n 6n_DQ835768	V	Q	F	T	V	Y	Q	N	R	A	V	S	D	V	M	K	K	V	P	S	L	P	S	T	M	A	S	S	L	K	S	C	L	V
GT-6o 6o_EF424627	I	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	M	K	K	L	P	A	L	P	S	A	S	A	S	K	L	K	S	C	L	V
GT-6p 6p_EF424626	V	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	M	K	K	V	P	S	L	P	S	P	M	A	T	Q	L	K	S	C	L	V
GT-6q 6q_EF424625	I	Q	F	X	V	Y	Q	T	R	A	V	D	D	V	M	K	K	V	P	S	L	P	S	P	N	A	T	X	X	K	S	C	L	V
GT-6r 6r_EU408328	V	Q	F	T	V	F	Q	T	R	A	V	A	D	V	M	K	K	G	P	A	L	P	S	P	A	A	T	Q	L	S	S	C	L	V
GT-6s 6s_EU408329	L	Q	F	T	V	F	Q	T	R	A	V	A	D	V	M	K	R	L	P	S	L	P	S	P	E	A	T	S	L	K	S	C	L	V
GT-6t 6t_EU246939	L	Q	F	T	V	F	Q	T	R	A	V	A	D	V	M	K	K	V	P	S	L	T	S	G	N	A	T	R	L	G	S	C	L	V
GT-6u 6u_EU246940	V	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	M	K	K	V	P	S	L	T	S	P	H	S	T	R	L	Q	S	C	L	V
GT-6v 6v_EU798760	V	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	M	K	R	V	P	S	L	P	X	P	Q	A	S	S	L	K	S	C	L	V
GT-6w 6w_EU643834	L	Q	F	T	V	Y	Q	S	R	A	V	A	D	V	M	K	K	F	P	A	L	P	S	P	D	A	T	S	L	K	S	C	L	V
GT-6xa 6xa5_EU408332	V	Q	F	T	V	F	Q	T	R	A	V	A	D	V	M	K	K	V	P	S	L	P	S	P	N	A	T	S	L	K	S	C	L	V
GT-6xb 6xb_KJ567645	V	Q	F	T	V	Y	Q	T	R	A	V	S	D	V	M	K	K	V	P	A	L	P	S	P	D	A	T	S	L	K	S	C	L	V
GT-6xc 6xc_KJ567651	V	Q	F	T	V	Y	Q	T	R	D	V	A	D	V	M	K	K	V	P	A	L	P	S	P	Q	A	T	Q	L	R	S	C	L	V
GT-6xd 6xd_KM252790	L	Q	F	T	V	Y	Q	S	R	A	V	A	D	V	M	K	K	F	P	R	L	P	S	P	Q	A	T	S	L	K	S	C	L	V

GT-6xe 6xe_KM252792	V	Q	F	T	V	Y	Q	T	R	A	V	S	D	V	M	K	K	V	P	S	L	P	S	T	Q	A	S	S	L	G	S	C	L	V
GT-6xf 6xf_KJ567646	L	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	M	K	K	V	P	V	L	P	S	P	A	A	T	Q	L	K	S	C	L	V
GT-6xg 6xg_MH492361	V	Q	F	T	V	Y	Q	T	R	A	X	S	D	V	M	K	K	V	P	S	L	P	S	P	E	A	T	S	L	S	S	C	L	V
GT-6xh 6xh_MG879000	V	Q	F	T	V	Y	Q	N	R	A	V	T	D	V	M	K	R	V	P	A	M	P	S	P	E	A	T	S	L	K	S	C	L	V
GT-6xi 6xi_MZ504973	V	Q	F	T	V	Y	Q	T	R	A	V	S	D	V	M	K	K	V	P	A	L	P	S	P	D	A	T	S	L	K	S	C	L	V
GT-6xj 6xj_MZ171127	V	Q	F	T	V	Y	Q	T	R	A	V	S	D	V	M	K	K	V	P	A	L	P	S	P	D	A	T	S	L	R	S	C	L	V
Unassigned GT-6 6_JX183550	V	Q	F	T	V	Y	Q	T	R	A	V	S	D	V	M	K	K	V	P	A	L	P	S	P	E	A	T	S	L	K	S	C	L	V
Unassigned GT-6 6_JX183551	V	Q	F	T	V	Y	Q	T	R	A	V	S	D	V	M	K	K	V	P	A	L	P	S	P	D	A	T	S	L	K	S	C	L	V
Unassigned GT-6 6_JX183553	V	Q	F	T	V	Y	Q	S	R	A	V	S	D	V	M	K	K	V	P	A	L	P	S	P	D	A	T	A	L	K	S	C	L	V
Unassigned GT-6 6_JX183554	V	Q	F	T	V	Y	Q	T	R	A	V	S	D	V	M	K	K	V	P	A	L	P	S	P	D	A	T	S	L	E	S	C	L	V
Unassigned GT-6 6_JX183558	V	Q	F	T	V	Y	Q	N	R	A	V	S	D	V	M	K	K	V	P	A	L	P	S	P	D	A	T	S	L	K	S	C	L	V
Unassigned GT-6 6_KJ470620	I	Q	F	T	V	Y	Q	N	R	A	L	A	D	I	M	K	K	L	P	H	L	P	S	S	D	A	T	S	L	K	S	C	L	V
Unassigned GT-6 6_KJ470621	L	Q	F	T	V	Y	Q	N	R	A	V	A	E	I	M	K	K	L	P	S	L	P	S	P	D	P	S	S	F	K	S	C	L	V
Unassigned GT-6 6_KJ470622	L	Q	F	T	V	Y	Q	N	R	A	V	A	E	V	M	K	K	L	P	A	L	P	S	P	D	A	S	S	F	K	S	C	L	V
Unassigned GT-6 6_KJ470623	M	Q	F	T	V	Y	Q	N	R	A	V	A	D	V	M	K	K	I	P	A	L	P	S	P	A	A	T	S	L	K	S	C	L	V

Unassigned GT-6 6_KJ470624	I	Q	F	T	V	Y	Q	N	R	A	V	A	E	I	M	K	K	L	P	R	L	P	S	P	Q	A	T	S	L	R	S	C	L	V
Unassigned GT-6 6_KJ470625	I	Q	F	T	V	Y	Q	S	R	A	V	A	D	I	M	K	K	V	P	A	L	P	S	P	I	A	T	S	L	K	S	C	L	V
Unassigned GT-6 6_KC844039	L	Q	F	X	X	Y	Q	T	R	A	V	A	D	V	M	K	K	M	P	A	L	P	S	T	Q	A	S	S	L	K	S	C	L	V
Unassigned GT-6 6_KC844040	V	Q	F	T	V	F	N	T	R	A	V	S	D	I	M	K	K	L	P	T	L	X	S	S	Q	A	S	S	L	K	S	C	L	V
Unassigned GT-6 6_KJ567652	V	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	M	K	K	V	P	S	L	P	S	P	Q	A	T	Q	L	K	S	C	L	V
Unassigned GT-6 6_KJ567648	I	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	M	K	K	V	P	A	L	P	S	S	A	A	T	Q	L	K	S	C	L	V
Unassigned GT-6 6_KJ567650	V	Q	F	T	V	Y	Q	T	R	A	V	A	D	I	M	K	K	V	P	A	L	P	S	P	Q	A	T	Q	L	K	S	C	L	V
Unassigned GT-6 6_MG878999	V	Q	F	T	V	Y	Q	S	R	A	V	A	D	V	M	K	K	F	P	S	L	P	S	S	Q	A	S	S	L	K	S	C	X	V
Unassigned GT-6 6_MN240359	V	Q	F	T	V	Y	Q	T	R	A	V	A	D	V	M	K	K	M	P	A	L	P	S	T	Q	A	S	S	L	K	S	C	L	V

HCV genotype 7 subtypes																																		F	T	V
HCV subtype reference sequences	NS3 positions															NS5A positions										NS5B positions										
	36	41	43	54	55	56	80	122	155	156	158	166	168	170	175	24	26	28	29	30	31	32	38	58	62	92	93	150	159	206	282	316	320	321		
GT-7a 7a_EF108306	L	Q	F	G	P	Y	D	G	R	A	V	A	Q	V	M	K	K	L	P	S	L	P	S	P	L	S	H	A	L	K	S	C	L	V		
GT-7b 7b_KX092342	L	Q	F	S	V	Y	E	K	R	A	V	A	Q	X	L	K	K	L	P	S	L	P	S	P	N	A	H	S	L	K	S	C	L	V		

HCV genotype 8 subtype																																		
HCV subtype reference sequences	NS3 positions															NS5A positions										NS5B positions								
	36	41	43	54	55	56	80	122	155	156	158	166	168	170	175	24	26	28	29	30	31	32	38	58	62	92	93	150	159	206	282	316	320	321
GT-8a 8a_MH590698	L	Q	F	T	V	Y	K	T	R	A	V	A	D	I	L	K	R	L	P	S	L	P	S	P	V	S	S	A	L	K	S	C	L	V