

Table 2 : HCV cellular system for therapeutic research

HCV system	drug/reagent name (IC₅₀ in cellular systems)	HCV target	references
Huh-7 SubRep1b	carbamate-tripeptides (< 1 µM)	NS3	(Llinas-Brunet et al., 2004)
Huh-7 SubRep1b	tripept P2 triazoles (70-100 nM)	NS3	(Naud et al., 2008)
Huh-7 SubRep1b	macrocyclic P2 derivatives (9 nM)	NS3	(Back et al., 2007)
Huh-7 SubRep 1b	peptide aptamers ^a	NS3	(Trahtenherts et al., 2008)
Huh-7 SubRep1b	SCH446211 (ketoamide NS3 peptide) (40 nM)	NS3	(Liu et al., 2007)
Huh-7 SubRep1b	P3 aza-macrocyclic peptides (3-30 µM)	NS3/4	(Randolph et al., 2008)
Huh-7 SubRep1b	ITMN-191 (NS3 peptide) (1.8 nM)	NS3/4A	(Seiwert et al., 2008)
Huh-7 SubRep1a,1b	TMC435350, TMC380765 macrocyclic derivatives (1a: 4.6-52 nM; 1b: 0.27-7.2 nM)	NS3/4A	(Liang et al., 2008)
Huh-7 SubRep1b	acridone-4-carboxylic acid derivatives (9-10 µM)	NS3 helicase	(Stankiewicz-Drogon et al., 2008)

Huh-7 SubRep1b	p14 (NS3 peptide) (82 μ M)	NS3 Helicase	(Gozdek et al., 2008)
Huh-7 SubRep1b	moracin P, moracin O (35 μ M, 80 μ M)	NS3 Helicase	(Lee et al., 2007)
Huh-7 SubRep 1b	ACH-806 (acylthiourea derivative) (10 nM)	NS3-NS4A interaction	(Yang et al., 2008)
BM4-5 SubRep1b	ACH-806 (acylthiourea derivative) (14 nM)	NS4A antagonist	(Wyles, Kaihara, & Schooley, 2008)
Huh-7 SubRep1a	gem-dialkyl naphthalenones (8-184 nM)	NS5B	(Bosse et al., 2008)
Huh-7 Con1b	adenosine phosphonates (25-200 μ M)	NS5B	(Koh et al., 2005)
Huh-7 1b	4'-Azidocytidine 3 (R1479) (0.17 μ M)	NS5B	(Smith et al., 2009)
Huh-7 SubRep 1b	pyrrolo[1,2-b]pyridazin-2-one (12 nM)	NS5B	(Ruebsam, Webber et al., 2008)
Huh-7 SubRep 1b	benzothiadiazine-derivatives (12-200 nM)	NS5B	(Ruebsam, Sun et al., 2008)
Huh-7 SubRep 1a,1b	PSI-6130 (methycytidine derivative) (0.3-0.6 μ M)	NS5B	(Ali et al., 2008)
PHH-HCVser	methyl cytidine	NS5B	(Buck, 2008)

Huh-7 Bicistronic replicon 1b	RO-9187 (4'-azidocytidine) RO-0622 (4-azidocytidine) (171 and 24 nM)	NS5B	(Klumpff et al., 2008)
Huh-7 SubRep 1b	5-Hydroxy-3(2H)-pyridazinone (5 nM)	NS5B	(Li et al., 2008)
Huh-7 SubRep 1b	1,5-benzodiazepines (1-10 μ M)	NS5B	(Nyanguile et al., 2008)
BM4-5(Huh7) SubRep1b	IFN/GEA007.1 (22 pg/ml) IFN/GEA013.1 (95 pg/ml) IFNa2b (154 pg/ml)	ISGs	(Escuret et al., 2006)
Huh-7 SubRep	consensus IFN	ISGs	(Erickson, Seiwert, & Gale, 2008)
Huh-7 SubRep1a, 1b, 2a	R706 ^b ; R803 ^b (90 nM ; 30 nM)	unknown ^c	(Huang et al., 2008)
Huh-7/HCVpp and Huh-7.5/JFH1 HCVcc	cyanovirin-N (1.6 nM)	E2-CD81 interaction	(Helle et al., 2006)
Huh-7/HCVpp	Arbidol (2-11 μ M)	HCV entry and replication	(Pecher et al., 2007)
PH5CH8/VSV-HCVpp	(C-s-3-33) ₂ (lactoferrin) (0.5 mg/ml)	HCV entry	(Abe et al., 2007)
Huh-7/HCVpp and Huh-7.5/JFH1 HCVcc	Serum amyloid A (2 μ g/ml)	HCV entry	(Lavie et al., 2006) (Cai et al., 2007)

PHH-HCVser	h-rsLDLR (< 6 nM)	HCV entry	(Molina et al., 2007)
PHH-HCVser	25-OH cholesterol (< 10 μ M)	HCV entry	(Molina et al., 2007)
Huh-7/HCVpp and Huh-7.5/JFH1 HCVcc	deoxynojirimycin iminosugars (6-50 μ M)	E1/E2 misfolding	(Chapel et al., 2007)
Huh-7 SubRep1b	acetyl salicylic acid (mM range)	inhibition of COX-2	(Trujillo-Murillo et al., 2008)
Huh-7.5/JFH1 HCVcc	naringenin	virion secretion MTTP activity	(Nahmias et al., 2008)
Huh-7 SubRep 1b	DNAzymes	HCV IRES	(Roy et al., 2008)
Huh-7 SubRep 1b	shRNAs	IRES, NS5B and CD81	(Henry et al., 2006)
PHH-HCVser	CD81 siRNA	HCV entry	(Molina et al., 2008)
Huh-7 SubRep 1b	DNAzymes 858-4-Ome	Core-E1	(Trepanier, Tanner, & Alfieri, 2008)
NN/1b/FL	core-shRNA452	Core	(Suzuki, Tamai, Habu, Chang, & Takaku, 2008)
Huh-7 SubRep 1b	siRNAs	HCV-5'/3'UTR, NS3/4/5B	(Korf et al., 2007)
PHH (<i>in vivo</i> infected)	RNAzymes 1-6	NS3-NS4	(Lieber et al., 1996)

Huh-7 SubRep1b	DNAzymes 9543 ^d	HCV-3'UTR	(Jarczak, Korf, Beger, Manns, & Kruger, 2005)
Huh7/Rep-Feo 1b	trequinsin ; MY-5445 (1 μ M ; 10 μ M)	Phosphodiesterase	(Kim et al., 2007)
Huh7/Rep-Feo 1b	SB 203580 (>10 μ M)	P38 MAPK	(Kim et al., 2007)
Huh7/Rep-Feo 1b	atorvastatin, simvastatin, fluvastatin (1-10 μ M)	HMG-CoA reductase	(Kim et al., 2007)
Huh-7(Ava5)/Rep 1b	PUFAs (4 μ M)	unknown	(Leu, Lin, & Hsu, 2004)
Huh-7(SfiI)/Rep HCV 1b	TOFA	acetyl-CoA carboxylase	(Kapadia & Chisari, 2005)
Huh-7(SfiI)/Rep HCV 1b	PUPAs	unknown	(Kapadia & Chisari, 2005)
Huh-7/Rep Con1	NA255 ; myriocin (2nM ; 4 nM)	serine palmitoyltransferase	(Sakamoto et al., 2005)
Huh-7/Rep Con1	fumonicin B1 (10 μ M)	dihydroceramide synthase	(Sakamoto et al., 2005)
Huh-7/Rep Con1	PPMP (1.2 μ M)	glycosphingolipid synthesis	(Sakamoto et al., 2005)
Huh-7 SubRep 1b	MPA	inosine monophosphate dehydrogenase	(Henry et al., 2006)

Huh-7/HCV-O 1b	mizoribine	inosine monophosphate dehydrogenase	(Naka, Ikeda, Abe, Dansako, & Kato, 2005)
Huh-7 SubRep 1b	ribavirin ; MPA ; VX-497	inosine monophosphate dehydrogenase	(Zhou, Liu, Baroudy, Malcolm, & Reyes, 2003)

See text for further comments

a : introduced by transient transfection

b : diphenyl heterocyclic derivative

c : in vitro experiments with various systems including IRES, NS2/NS3, NS3, NS3/NS4, NS5A, NS5B were negative. Inhibition of replication in cells refractory to IFN.

d : Rz9543 directed against a target sequence flanking a GUC-site within the HCV 3'-UTR.

MPA, mycophenolic acid ; PPMP, 1-phenyl-2-hexadecanoylamino-3-morpholino-1-propanol ; PUFAs, polyunsaturated fatty acids ; TOFA, 5 (Tetradecyloxy)-2-furoic acid.