OptiPrep™ Reference List RV04

GROUP IV VIRUSES

- **Viruses are listed alphabetically within the Baltimore scheme: Family, Genus and Species. Where necessary, references are further divided according to research topic. Publications are listed alphabetically by first author**
- **Multiple entries from the same first author are listed chronologically.**
- **For a detailed methodology of Group IV viruses see OptiPrep™ Application Sheets V18-V22. V06 is a methodological review of OptiPrep™ technology.**

1. Arteriviridae

Porcine reproductive and respiratory syndrome virus

Chen, W-Y., Schniztlein, W.M., Calzada-Nova, G. and Zuckermann, F.A. (2018) *Genotype 2 strains of porcine reproductive and respiratory syndrome virus dysregulate alveolar macrophage cytokine production via the unfolded protein response* J. Virol., **92**: e01251-17

Delputte, P.L., Meerts, P., Costers, S. and Nauwynck, H.J. (2004) *Effect of virus-specific antibodies on attachment, internalization and infection of porcine reproductive and respiratory syndrome virus in primary macrophages* Vet. Immunol. Immunopathol., **102**, 179-188

Li, J. and Murtaugh, M.P. (2012) *Dissociation of porcine reproductive and respiratory syndrome virus neutralization from antibodies specific to major envelope protein surface epitopes* Virology, **433**, 367–376

Li, J. and Murtaugh, M.P. (2015) *Functional analysis of porcine reproductive and respiratory syndrome virus N-glycans in infection of permissive cells* Virology, **477**, 82–88

Li, J., Tao, S., Orlando, R. and Murtaugh, M.P. (2015) *N-glycosylation profiling of porcine reproductive and respiratory syndrome virus envelope glycoprotein 5* Virology **478**, 86–98

Van Noort, A., Nelsen, A., Pillatzki, A.E., Diel, D.G., Li, F., Nelson, E. and Wang, X. (2017) *Intranasal immunization of pigs with porcine reproductive and respiratory syndrome virus-like particles plus 2', 3'-cGAMP VacciGrade™ adjuvant exacerbates viremia after virus challenge* Virol. J., **14**: 76

2. Caliciviridae

Bertolotti-Ciarlet, A., White, L.J., Chen, R., Prasad, B.V.V. and Estes, M.K. (2002) *Structural requirements for the assembly of Norwalk virus-like particles* J. Virol., **76**, 4044-4055

Crisci, E., Fraile, L., Moreno, N., Blanco, E., Cabezónd, R., Costa, C., Mussá, T., Baratelli, M., Martinez-Orellana, P., Ganges, L., Martínez, J., Bárcenac, J. and Montoya, M. (2012) *Chimeric calicivirus-like particles elicit specific immune responses in pigs* Vaccine **30**, 2427–2439

Teixeira, L., Marques, R.M., Aguas, A.P. and Ferreira, P.G. (2011) *A simple and rapid method for isolation of caliciviruses from liver of infected rabbits* Res. Vet. Sci., **91**, 164–166

Teixeira, L., Marques, R.M., Águas, A.P. and Ferreira, P.G. (2012) *Regulatory T cells are decreased in acute RHDV lethal infection of adult rabbits* Vet. Immunol. Immunopathol., **148**, 343– 347

3. Coronaviridae

3a. Middle East respiratory syndrome virus

De Wit, E., Prescott, J., Baseler, L., Bushmaker, T., Thomas, T., Lackemeyer, M.G., Martellaro, C., Milne-Price, S., Haddock, E., Haagmans, B.L., Feldmann, H. and Munster, V.J. (2013) *The Middle East respiratory syndrome coronavirus (MERS-CoV) does not replicate in Syrian hamsters* PLoS One, **8**: e69127

3b. Human-Coronavirus

Milewska, A., Kaminski, K., Ciejka, J., Kosowicz, K., Zeglen, S., Wojarski, J., Nowakowska, M., Szczubiałka, K. and Pyrc, K. (2016) *HTCC: broad range inhibitor of coronavirus entry* PLoS One, **11**: e0156552

Milewska, A., Nowak, P., Owczarek, K., Szczepanski, A., Zarebski, M., Hoang, A., Berniak, K., Wojarski, J., Zeglen, S. et al (2018) *Entry of human coronavirus NL63 into the cell* J. Virol., 92: e01933-17

Naskalska, A., Dabrowska, A., Szczepanski, A., Milewska, A., Jasik, K.P. and Pyrca, K. (2019) *Membrane protein of human coronavirus NL63 is responsible for interaction with the adhesion receptor* J. Virol., **93**: e00355-19

3c. Nidovirales
Infectious bronchitic virus
Amarasinghe, A., De Silva Senapathi1, U., Abdul-Cader, M.S., Popowich, S., Marshall, F., Cork, S.C., van der Meer, F., Gomis, S. and Abdul-Careem, M.F. (2018) *Comparative features of infections of two Massachusetts (Mass) infectious bronchitis virus (IBV) variants isolated from Western Canadian layer flocks* BMC Vet. Res., **14**: 391

3d. SARS-Coronavirus
Beniac, D.R., deVarennes, S.L., Andonov, A., He, R. and Booth, T.F. (2007) *Conformational reorganization of the SARS Coronavirus spike following receptor binding: implications for membrane fusion* PLoS ONE, **10:e1082**
Berry, J.D., Jones, S., Drebot, M.A., Andonov, A., Sabara, M., Yuan, X.Y., Weingartl, H., Fernando, L. et al (2004) *Development and characterization of neutralizing monoclonal antibody to the SARs-coronavirus* J. Virol. Methods, **120**, 87-96
Gubbins, M. J., Plummer, F.A., Yuan, X.Y., Johnstone, D., Drebot, M., Andonova, M., Andonov, A. and Berry, J.D. (2004) *Molecular characterization of a panel of murine monoclonal antibodies specific for the SARS-coronavirus* Mol. Immunol., **42**, 125-136
Hatakeyama, S., Matsuoka, Y., Ueshiba, H., Komatsu, N., Itoh, K., Shichijo, S., Kanai, T., Fukushi, M., Ishida, I., Kirikae, T., Sasazuki, T. and Miyoshi-Akiyama, T. (2008) *Dissection and identification of regions required to form pseudoparticles by the interaction between the nucleocapsid (N) and membrane (M) proteins of SARS coronavirus* Virology, **380**, 99-108
Huang, Y., Yang, Z-Y., Kong, W-P. and Nabel, G.J. (2004) *Generation of synthetic severe acute respiratory syndrome coronavirus pseudoparticles: implications for assembly and vaccine production* J. Virol., **78**, 12557-12565
Kuo, L., Hurst-Hess, K.R., Koetzner, C.A. and Masters, P.S. (2016) *Analyses of coronavirus assembly interactions with interspecies membrane and nucleocapsid protein chimeras* J. Virol., **90**, 4357-4368
Milewska, A., Zarebski, M., Nowak, P., Stozek, K., Potempa, J. and Pyrca, K. (2014) *Human coronavirus NL63 utilizes heparan sulfate proteoglycans for attachment to target cells* J. Virol., **88**, 13221–13230
Milewska, A., Kaminski, K., Ciejka, J., Kosowicz, K., Zeglen, S., Wojarski, J., Nowakowska, M., Szczubiałka, K. and Pyrc, K. (2016) *HTCC: broad range inhibitor of coronavirus entry* PLoS One, **11**: e0156552
Tseng, Y-T., Wang, S-M., Huang, K-J., Lee, A.I-R., Chiang, C-C. and Wang, C-T. (2010) *Self-assembly of severe acute respiratory syndrome coronavirus membrane protein* J. Biol. Chem., **285**, 12862–12872
Tseng, Y-T., Wang, S-M., Huang, K-J. and Wang, C-T. (2014) *SARS-CoV envelope protein palmitoylation or nucleocapid association is not required for promoting virus-like particle production* J. Biomed. Sci., **21**: 34
Yang, Z-Y., Huang, Y., Ganesh, L., Leung, K., Kong, W-P., Schwartz, O., Subbarao, K. and Nabel, G.J. (2004) *pH-dependent entry of severe acute respiratory syndrome coronavirus is mediated by the spike glycoprotein and enhanced by dendritic cell transfer through DC-sign* J. Virol., 78, 5642-5680

4. Flaviviridae
4a. Bovine diarrhea virus
Fredericksen, F., Delgado, F., Cabrera, C., Yáñez, A., Gonzalo, C., Villalba, M. and Olavarría, V.H. (2015) *The effects of reference genes in qRT-PCR assays for determining the immune response of bovine cells (MDBK) infected with the Bovine Viral Diarrhea Virus 1 (BVDV-1)* Gene, **569**, 95–103
Fredericksen, F., Carrasco, G., Villalba, M. and Olavarría, V.H. (2015) *Cytopathic BVDV-1 strain induces immune marker production in bovine cells through the NF-κB signaling pathway* Mol. Immunol., **68**, 213–222
Maurer, K., Krey, T., Moennig, V., Thiel, H-J. and Rümenapf, T. (2004) *CD46 is a cellular receptor for bovine viral diarrhea virus* J. Virol., **78**, 1792-1799

4b. Dengue virus
Alayli, F. and Scholle, F. (2016) *Dengue virus NS1 enhances viral replication and pro-inflammatory cytokine production in human dendritic cells* Virology, **496**, 227–236
Ayala-Nuñez, N.V., Wilschut, J. and Smit, J.M. (2011) *Monitoring virus entry into living cells using DiD-labeled dengue virus particles* Methods **55**, 137–143
Briggs, C.M., Smith, K.M., Piper, A., Huitt, E., Spears, C.J., Quiles, M., Ribeiro, M., Thomas, M.E., Brown, D.T. and Hernandez, R. (2014) *Live attenuated tetravalent dengue virus host range vaccine is immunogenic in African green monkeys following a single vaccination* J. Virol., **88**, 6729–6742
Hacker, K., White, L. and de Silva, A.M. (2009) *N-Linked glycans on dengue viruses grown in mammalian and insect cells* J. Gen. Virol., **90**, 2097–2106

Hadjilaou, A., Green, A.M., Coloma, J. and Harris, E. (2015) *Single-cell analysis of B cell/antibody cross-reactivity using a novel multicolor FluoroSpot assay* J. Immunol., **195**, 3490–3496
Hallez, C., Li, X., Suspène, R., Thiers, V., Bouzidi, M.S., Dorobantu, C.M., Lucansky, V., Wain-Hobson, S., Gaudin, R. and Vartanian, J-P., (2019) *Hypoxia-induced human deoxyribonuclease I is a cellular restriction factor of hepatitis B virus* Nat. Microbiol., **1196**, 1196–1207
Heaton, N.S., Perera, R., Berger, K.L., Khadka, S., LaCount, D.J., Kuhn, R.J. and Randall, G. (2010) *Dengue virus nonstructural protein 3 redistributes fatty acid synthase to sites of viral replication and increases cellular fatty acid synthesis* Proc. Natl. Acad. Sci. USA, **107**, 17345–17350
Raheel, U., Jamal, M. and Zaidi, N.U.S.S. (2015) *A molecular approach designed to limit the replication of mature DENV2 in host cells* Viral Immunol., **28**, 378–384
Rodenhuis-Zybert, I.A., van der Schaar, H.M., da Silva Voorham, J.M., van der Ende-Metselaar, H., Lei, H-Y., Jan Wilschut, J. and Smit, J.M. (2010) *Immature dengue virus: a veiled pathogen?* PLoS Pathogens, **6**:e1000718
Smith, K.M., Nanda, K., McCarl, V., Spears, C.J., Piper, A., Ribeiro, M., Quiles, M., Briggs, C.M., Thomas, G.S., Thomas, M.E., Brown, D.T. and Hernandez, R. (2012) *Testing of novel dengue virus 2 vaccines in African green monkeys: safety, immunogenicity, and efficacy* Am. J. Trop. Med. Hyg., **87**, 743–753
Vancini, R., Kramer, L.D., Ribeiro, M., Hernandez, R. and Brown, D. (2013) *Flavivirus infection from mosquitoes in vitro reveals cell entry at the plasma membrane* Virology **435**, 406–414
Wahala, W.M.P.B., Kraus, A.A., Haymore, L.B., Accavitti-Loper, M.A. and de Silva, A.M. (2009) *Dengue virus neutralization by human immune sera: Role of envelope protein domain III-reactive antibody* Virology **392**, 103–113
Wahala, W.M.P.B., Donaldson, E.F., de Alwis, R., Accavitti-Loper, M.A., Baric, R.S. and de Silva, A.M. (2010) *Natural strain variation and antibody neutralization of dengue serotype 3 viruses* PLoS Pathogens, **6**: e1000821
White, L.J. Parsons, M.M., Whitmore, A.C., Williams, B.M., de Silva, A. and Johnston, R.E. (2007) *An immunogenic and protective alphavirus replicon particle-based Dengue vaccine overcomes maternal antibody interference in weanling mice* J. Virol., **81**, 10329-10339
Zaitseva, E., Yang, S-T., Melikov, K., Pourmal, S., Chernomordik, L.V. (2010) *Dengue virus ensures its fusion in late endosomes using compartment-specific lipids* PloS Pathogens, **6**: e1001131
Zicari, S., Arakelyan, A., Fitzgerald, W., Zaitseva, E., Chernomordik, L.V., Margolis, L. and Grivel, J-C. (2016) *Evaluation of the maturation of individual Dengue virions with flow virometry* Virology, **488**, 20–27
Zybert, I.A., van der Ende-Metselaar, H., Wilschut, J. and Smit, J.M. (2008) *Functional importance of dengue virus maturation: infectious properties of immature virions* J. Gen. Virol., **89**, 3047–3051

4c. Hepatitis C virus

4c-1. Anti-scavanger receptor (B type)

Vercauteren, K., Van Den Eede, N., Mesalam, A.A., Belouzard, S., Catanese, M.T. et al (2014) *Successful anti-scavenger receptor class B type I (SR-BI) monoclonal antibody therapy in humanized mice after challenge with HCV variants with in vitro resistance to SR-BI-targeting agents* Hepatology, **60,** 1508-1518

4c-2. Assembly and cell release of virus particles

Adair, R., Patel, A.H., Corless, L., Griffin, S., Rowlands, D.J. and McCormick, C.J. (2009) *Expression of hepatitis C virus (HCV) structural proteins in trans facilitates encapsidation and transmission of HCV subgenomic RNA* J. Gen. Virol., **90**, 833–842
Bankwitz, D., Doepke, M., Hueging, K., Weller, R., Bruening, J., Behrendt, P., Lee, J-Y., Vondran, F.W.R. et al (2017) *Maturation of secreted HCV particles by incorporation of secreted ApoE protects from antibodies by enhancing infectivity* J. Hepatol., **67**, 480–489
Bayer, K., Banning, C., Bruss, V., Wiltzer-Bach, L. and Schindler, M. (2016) *Hepatitis C virus is released via a noncanonical secretory* route J. Virol., **90**, 10558-10573
Belouzard, S., Danneels, A., Fénéant, L., Séron, K., Rouillé, Y. and Dubuisson, J. (2017) *Entry and release of hepatitis C virus in polarized human hepatocytes* J. Virol., 91: e00478-17
Benga, W.J.A., Krieger, S.E., Dimitrova, M., Zeisel, M.B., Parnot, M., Lupberger, J., Hildt, E., Luo, G., McLauchlan, J., Baumert, T.F. and Schuster, C. (2010) *Apolipoprotein E interacts with hepatitis C virus nonstructural protein 5A and determines assembly of infectious particles* Hepatology, **51**, 43-53
Bentham, M.J., Foster, T.L., McCormick, C. and Griffin, S. (2013) *Mutations in hepatitis C virus p7 reduce both the egress and infectivity of assembled particles via impaired proton channel function* J. Gen. Virol., **94**, 2236–2248
Counihan, N.A., Rawlinson, S.M. and Lindenbach, B.D. (2011) *Trafficking of hepatitis C virus core protein during virus particle assembly* PLoS Pathog., **7**: e1002302

De la Fuente, C. and Catanese, M.T. (2019) *Production and purification of cell culture hepatitis C virus* In Hepatitis C Virus Protocols, Meth. Mol. Biol., vol. 1911 (ed. Law, M), Springer Science+Business Media LLC New York, pp 105-119

Eyre, N.S., Aloia, A.L., Joyce, M.A., Chulanetra, M., Tyrrell, D.L. and Beard, M.R. (2017) *Sensitive luminescent reporter viruses reveal appreciable release of hepatitis C virus NS5A protein into the extracellular environment* Virology, **507**, 20–31

Fukuhara, T., Tamura, T., Ono, C., Shiokawa, M., Mori, H., Uemura, K., Yamamoto, S., Kurihara, T. et al (2017) *Host-derived apolipoproteins play comparable roles with viral secretory proteins E^{rns} and NS1 in the infectious particle formation of Flaviviridae* PLoS Pathog., **13**: e1006475

Hueging, K., Doepke, M., Vieyres, G., Bankwitz, D., Frentzen, A., Doerrbecker, J., Gumz, F., Haid, S., Wölk, B., Kaderali, L. and Pietschmann, T. (2014) *Apolipoprotein E co-determines tissue tropism of hepatitis C virus and is crucial for viral cell-to-cell transmission by contributing to a post-envelopment step of assembly* J, Virol., **88**, 1433–1446

Icard, V., Diaz, O., Scholtes, C., Perrin-Cocon, L., Ramière, C., Bartenschlager, R., Penin, F., Lotteau, V. and André, P. (2009) *Secretion of hepatitis C virus envelope glycoproteins depends on assembly of apolipoprotein B positive lipoproteins* PLoS One **4**: e4233

Jones, D.M., Atoom, A.M., Zhang, X., Kottilil, S. and Russell, R.S. (2011) *A genetic interaction between the core and NS3 proteins of hepatitis C virus is essential for production of infectious virus* J. Virol., **85**, 12351–12361

Lassen, S., Grüttner, C., Nguyen-Dinh, V. and Herker, E. (2019) *Perilipin-2 is critical for efficient lipoprotein and hepatitis C virus particle production* J. Cell Sci., **132**: jcs217042

Liefhebber, J.M.P., Hague, C.V., Zhang, Q., Wakelam, M.J.O. and McLauchlan, J. (2014) *Modulation of triglyceride and cholesterol ester synthesis impairs assembly of infectious hepatitis C virus* J. Biol. Chem., **289**, 21276-21288

Long, G., Hiet, M-S., Windisch, M.P., Lee, J-Y., Lohmann, V. and Bartenschlager, R. (2011) *Mouse hepatic cells support assembly of infectious hepatitis C virus particles* Gastroenterology **141**, 1057–1066

Ma, Y., Yates, J., Liang, Y., Lemon, S.M. and Yi, MK. (2008) *NS3 helicase domains involved in infectious intracellular hepatitis C virus particle assembly* J. Virol., **82**, 7624-7639

Ndongo, N., Selliah, S., Berthillon, P., Raymond, V-A., Trépo, C., Bilodeau, M. and Petit, M-A. (2011) *Expression of E1E2 on hepatitis C RNA-containing particles released from primary cultured human hepatocytes derived from infected cirrhotic livers* Intervirology, **54**, 1–9

Pène, V., Lemasson, M., Harper, F., Pierron, G. and Rosenberg, A. (2017) *Role of cleavage at the core-E1 junction of hepatitis C virus polyprotein in viral morphogenesis* PLoS One, **12**: e0175810

Puig-Basagoiti, F., Fukuhara, T., Tamura, T., Ono, C., Uemura, K., Kawachi, Y., Yamamoto, S., Mori, H. et al (2016*) Human cathelicidin compensates for the role of apolipoproteins in hepatitis C virus infectious particle formation* J. Virol., **90**, 8464-8477

Salloum, S., Wang, H., Ferguson, C., Parton, R.G. and Tai1, A.W. (2013) *Rab18 binds to hepatitis C virus NS5A and promotes interaction between sites of viral replication and lipid droplets* PLoS Pathog., **9**: e1003513

Shimakami, T., Honda, M., Shirasaki, T., Takabatake, R., Liu, F., Murai, K., Shiomoto, T. et al (2014) *The acyclic retinoid Peretinoin inhibits hepatitis C virus replication and infectious virus release in vitro* Sci. Rep., **4**: 4688

Yi, M., Ma, Y., Yates, J. and Lemon, S.M. (2007) *Compensatory mutations in E1, p7, NS2, and NS3 enhance yields of cell culture-infectious intergenotypic chimeric hepatitis C virus* J. Virol., **81**, 629-638

Yi, M-K., Ma, Y., Yates, J. and Lemon, S.M. (2009) *Trans-complementation of an NS2 defect in a late step in hepatitis C virus (HCV) particle assembly and maturation* PLoS Pathog., **5**:e1000403

Yin, C., Goonawardane, N., Stewart, H. and Harris, M. (2018) *A role for domain I of the hepatitis C virus NS5A protein in virus assembly* PloS Pathog., **14**: e1006834

Zayas, M., Long, G., Madan, V. and Bartenschlager, R. (2016) *Coordination of hepatitis C virus assembly by distinct regulatory regions in nonstructural protein* 5A PLoS Pathog., **12**: e1005376

4c-3. Assembly – lipid droplets

Beilstein, F., Lemasson, M., Pène, V., Rainteau, D., Demignot, S. and Rosenberg, A.R. (2017) *Lysophosphatidylcholine acyltransferase 1 is downregulated by hepatitis C virus: impact on production of lipo-viro-particles* Gut, **66**, 2160–2169

Lee, J-Y., Cortese, M., Haselmann, U., Tabata, K., Romero-Brey, I., Funaya, C., Schieber, N.L., Qiang, Y. et al (2019) *Spatiotemporal coupling of the hepatitis C virus replication cycle by creating a lipid droplet-proximal membranous replication compartment* Cell Rep., **27**, 3602–3617

Rösch, K., Kwiatkowski, M., Hofmann, S., Schöbel, A., Grüttner, C., Wurlitzer, M., Schlüter, H. and Herker, E. (2016) *Quantitative lipid droplet proteome analysis identifies annexin A3 as a cofactor for HCV particle production* Cell Rep., **16**, 3219–3231

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Schweitzer, C.J., Zhang, F., Boyer, A., Valdez, K., Cam, M. and Liang, T.J. (2018) *N-Myc downstream-regulated gene 1 restricts hepatitis C virus propagation by regulating lipid droplet biogenesis and viral assembly* J. Virol., 92: e01166-17

4c-4. Cultured cell infection

Belouzard, S., Danneels, A., Fénéant, L., Séron, K., Rouillé, Y. and Dubuisson, J. (2017) *Entry and release of hepatitis C virus in polarized human hepatocytes* J. Virol., 91: e00478-17

Bridge, S.H., Sheridan, D.A., Felmlee, D.J., Nielsen, S.U., Neely, R.D.G., Toms, G.L. and Bassendine, M.F. (2010) *Insulin resistance correlates with low density hepatitis C virus particles in genotype 1 infection* J. Hepatol., **52**, S319–S457

Buck, M. (2008) *Direct infection and replication of naturally occurring hepatitis C virus genotypes 1, 2, 3 and 4 in normal human hepatocyte cultures* PLoS One, **3:**e2660

Da Costa, D., Turek, M., Felmlee, D.J., Girardi, E., Pfeffer, S., Long, G., Bartenschlager, R., Zeisel, M.B. and Baumert, D.F. (2012) *Reconstitution of the entire hepatitis C virus life cycle in nonhepatic cells* J. Virol., **86**, 11919-11925

Doerrbecker, J., Friesland, M., Riebesehl, N., Ginkel, C., Behrendt, P., Brown, R.J.P., Ciesek, S., Wedemeyer, H., Sarrazin, C., Kaderali, L. et al (2014) *Incorporation of primary patient-derived glycoproteins into authentic infectious hepatitis C virus particles* Hepatology, **60,** 508-520

Haid, S., Windisch, M.P., Bartenschlager, R. and Pietschmann, T. (2010) *Mouse-specific residues of claudin-1 limit hepatitis C virus genotype 2a infection in a human hepatocyte cell line* J. Virol., **84**, 964-975

Helle, F., Brochot, E. Fournier, C., Descamps, V., Izquierdo, L., Hoffmann, T.W., Morel, V. et al (2013) *Permissivity of primary human hepatocytes and different hepatoma cell lines to cell culture adapted hepatitis C virus* PLoS One, **8**: e70809

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Kato, T., Matsumura, T., Heller, T., Saito, S., Sapp, R.K., Murthy, K., Wakita, T. and Liang, T.J. (2007) *Production of infectious hepatitis C virus of various genotypes in cell cultures* J. Virol., **81**, 4405-4411

Lindenbach, B.D., Meuleman, P., Ploss, A., Vanwolleghem, T., Syder, A.L., McKeating, J.A., Lanford, R.E. et al (2006) *Cell culture-grown hepatitis C virus is infectious in vivo and can be recultured in vitro* Proc. Natl. Acad. Sci. USA, **103**, 3805-3809

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Mathiesen, C.K., Jensen, T.B., Prentoe, J., Krarup, H., Nicosia, A., Law, M., Bukh, J. and Gottwein, J.M. (2104) *Production and characterization of high-titer serum-free cell culture grown hepatitis C virus particles of genotype 1* Virology **458-459**, 190–208

Molina-Jimenez, F., Benedicto, I., , Dao Thi, V.L., Gondar, V., Lavillette, D., Marin, J.J., Briz, O. et al (2012) *Matrigel-embedded 3D culture of Huh-7 cells as a hepatocyte-like polarized system to study hepatitis C virus cycle* Virology, **425**, 31–39

Ndongo-Thiam, N., Berthillon, P., Errazuriz, E., Bordes, I., De Sequeira, S., Trépo, C. and Petit, M-A. (2011) *Long-term propagation of serum hepatitis C virus (HCV) with production of enveloped HCV particles in human HepaRG hepatocytes* Hepatology, **54**, 406-417

Pietschmann, T., Zayas, M., Meuleman, P., Long, G., Appel, N., Koutsoudakis, G., Kallis, S., Leroux-Roels, G., Lohmann, V. and Bartenschlager, R. (2009) *Production of infectious genotype 1b virus particles in cell culture and impairment by replication enhancing mutations* PLoS Pathog., **5**:e1000475

Pihl, A.F., Offersgaard, A.F., Mathiesen, C.K., Prentoe, J., Fahnøe, U., Krarup, H., Bukh, J. and Gottwein, J.M. (2018) *High density Huh7.5 cell hollow fiber bioreactor culture for high-yield production of hepatitis C virus and studies of antivirals* Sci. Rep., **8**: 17505

Podevin, P., Carpentier, A., Pène, V., Aoudjehane, L., Carriere, M., Zaïdi, S., Hernanadez, C., Calle, V. et al (2010) *Production of infectious hepatitis C virus in primary cultures of human adult hepatocytes* Gastroenterology, **139**, 1355-1364

Podevin, P., Carpentier, A., Pène, V., Aoudjehane, L., Hernandez, C., Calle, V., Demignot, S., Scatton, O. et al (2010) *Culture of hepatitis C virus (HCV) in primary human adult hepatocytes: a physiological model for the production of authentic infectious particles* J. Hepatol., **52**, S183–S317

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4c-8. Entry/efflux processes – apolipoproteins/lipoproteins/LDL/VLDL

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4c-9. Entry process – glycocalyx/glycoproteins/proteins/proteoglycans

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4c-11. Exosome association

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4c-12. Genome/genome manipulation

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4c-13. Immune responses/antibodies/infectivity

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4c-19. Morphology

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4c-22. Particle heterogeneity

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4c-26. Purification

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4c-27. Replication

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