

Prof. Dr. med. Andreas Geier

I Originalarbeiten

1. **A. Geier**, D. Bergemann, L. von Meyer, Evaluation of a solid-phase extraction procedure for the simultaneous determination of morphine, 6-monoacetylmorphine, codeine and dihydrocodeine in plasma and whole blood by GC/MS. *International Journal of Legal Medicine* **109**, 80-83 (1996).
2. D. Bergemann, **A. Geier**, L. von Meyer, Determination of lysergic acid diethylamide in body fluids by high-performance liquid chromatography and fluorescence detection--a more sensitive method suitable for routine use. *Journal of Forensic Sciences* **44**, 372-374 (1999).
3. T. M. Berghaus, A. Baron, **A. Geier**, R. Lamerz, G. Paumgartner, Hepatotoxicity following desflurane anesthesia. *Hepatology* **29**, 613-614 (1999).
4. T. Gerloff, **A. Geier**, B. Stieger, B. Hagenbuch, P. J. Meier, S. Matern, C. Garton, Differential expression of basolateral and canalicular organic anion transporters during regeneration of rat liver. *Gastroenterology* **117**, 1408-1415 (1999).
5. **A. Geier**, C. G. Dietrich, F. Lammert, T. Orth, W. J. Mayet, S. Matern, C. Garton, Regulation of organic anion transporters in a new rat model of acute and chronic cholangitis resembling human primary sclerosing cholangitis. *Journal of Hepatology* **36**, 718-724 (2002).
6. **A. Geier**, S. K. Kim, T. Gerloff, C. G. Dietrich, F. Lammert, S. J. Karpen, B. Stieger, P. J. Meier, S. Matern, C. Garton, Hepatobiliary organic anion transporters are differentially regulated in acute toxic liver injury induced by carbon tetrachloride. *Journal of Hepatology* **37**, 198-205 (2002).
7. T. Gerloff, **A. Geier**, I. Roots, P. J. Meier, C. Garton, Functional analysis of the rat bile salt export pump gene promoter. *European Journal of Biochemistry / FEBS* **269**, 3495-3503 (2002).
8. E. Purucker, H. U. Marschall, **A. Geier**, C. Garton, S. Matern, Increase in renal glutathione in cholestatic liver disease is due to a direct effect of bile acids. *American Journal of Physiology. Renal Physiology* **283**, F1281-1289 (2002).
9. **A. Geier**, C. G. Dietrich, T. Gerloff, J. Haendly, G. A. Kullak-Ublick, B. Stieger, P. J. Meier, S. Matern, C. Garton, Regulation of basolateral organic anion transporters in ethinylestradiol-induced cholestasis in the rat. *Biochimica et Biophysica Acta* **1609**, 87-94 (2003).
10. **A. Geier**, C. G. Dietrich, S. Voigt, S. K. Kim, T. Gerloff, G. A. Kullak-Ublick, J. Lorenzen, S. Matern, C. Garton, Effects of proinflammatory cytokines on rat organic anion transporters during toxic liver injury and cholestasis. *Hepatology* **38**, 345-354 (2003).
11. **A. Geier**, C. Garton, C. G. Dietrich, H. E. Wasmuth, P. Reinartz, S. Matern, Side effects of budesonide in liver cirrhosis due to chronic autoimmune hepatitis: influence of hepatic metabolism versus portosystemic shunts on a patient complicated with HCC. *World Journal of Gastroenterology* **9**, 2681-2685 (2003).
12. **A. Geier**, P. R. Mertens, T. Gerloff, C. G. Dietrich, A. En-Nia, G. A. Kullak-Ublick, S. J. Karpen, S. Matern, C. Garton, Constitutive rat multidrug-resistance protein 2 gene transcription is down-regulated by Y-box protein 1. *Biochemical and Biophysical Research Communications* **309**, 612-618 (2003).

13. E. Roeb, E. Purucker, C. Gartung, **A. Geier**, B. Jansen, R. Winograd, S. Matern, Effect of glutathione depletion and hydrophilic bile acids on hepatic acute phase reaction in rats with extrahepatic cholestasis. *Scandinavian Journal of Gastroenterology* **38**, 878-885 (2003).
14. R. Schiffer, M. Neis, D. Holler, F. Rodriguez, **A. Geier**, C. Gartung, F. Lammert, A. Dreuw, G. Zwadlo-Klarwasser, H. Merk, F. Jugert, J. M. Baron, Active influx transport is mediated by members of the organic anion transporting polypeptide family in human epidermal keratinocytes. *The Journal of Investigative Dermatology* **120**, 285-291 (2003).
15. C. G. Dietrich*, **A. Geier***, N. Salein, F. Lammert, E. Roeb, R. P. Oude Elferink, S. Matern, C. Gartung, Consequences of bile duct obstruction on intestinal expression and function of multidrug resistance-associated protein 2. *Gastroenterology* **126**, 1044-1053 (2004).
16. C. G. Dietrich, **A. Geier**, H. E. Wasmuth, S. Matern, C. Gartung, D. R. de Waart, R. P. Elferink, Influence of biliary cirrhosis on the detoxification and elimination of a food derived carcinogen. *Gut* **53**, 1850-1855 (2004).
17. **A. Geier**, M. Reugels, R. Weiskirchen, H. E. Wasmuth, C. G. Dietrich, E. Siewert, C. Gartung, J. Lorenzen, A. K. Bosserhoff, M. Brugmann, A. M. Gressner, S. Matern, F. Lammert, Common heterozygous hemochromatosis gene mutations are risk factors for inflammation and fibrosis in chronic hepatitis C. *Liver International* **24**, 285-294 (2004).
18. F. Lammert, D. Q. Wang, S. Hillebrandt, **A. Geier**, P. Fickert, M. Trauner, S. Matern, B. Paigen, M. C. Carey, Spontaneous cholecysto- and hepatolithiasis in Mdr2^{-/-} mice: a model for low phospholipid-associated cholelithiasis. *Hepatology* **39**, 117-128 (2004).
19. E. Siewert, C. G. Dietrich, F. Lammert, P. C. Heinrich, S. Matern, C. Gartung, **A. Geier**, Interleukin-6 regulates hepatic transporters during acute-phase response. *Biochemical and Biophysical Research Communications* **322**, 232-238 (2004)
20. H. E. Wasmuth, C. Stolte, **A. Geier**, C. G. Dietrich, C. Gartung, J. Lorenzen, S. Matern, F. Lammert, The presence of non-organ-specific autoantibodies is associated with a negative response to combination therapy with interferon and ribavirin for chronic hepatitis C. *BMC Infectious Diseases* **4**, 4 (2004)
21. H. E. Wasmuth, A. Werth, T. Mueller, T. Berg, C. G. Dietrich, **A. Geier**, C. Gartung, J. Lorenzen, S. Matern, F. Lammert, Haplotype-tagging RANTES gene variants influence response to antiviral therapy in chronic hepatitis C. *Hepatology* **40**, 327-334 (2004).
22. H. E. Wasmuth, A. Werth, T. Mueller, T. Berg, C. G. Dietrich, **A. Geier**, R. Schirin-Sokhan, C. Gartung, J. Lorenzen, S. Matern, F. Lammert, CC chemokine receptor 5 delta32 polymorphism in two independent cohorts of hepatitis C virus infected patients without hemophilia. *Journal of Molecular Medicine* **82**, 64-69 (2004).
23. **A. Geier**, C. G. Dietrich, T. Grote, U. Beuers, T. Prufer, P. Fraunberger, S. Matern, C. Gartung, A. L. Gerbes, M. Bilzer, Characterization of organic anion transporter regulation, glutathione metabolism and bile formation in the obese Zucker rat. *Journal of Hepatology* **43**, 1021-1030 (2005).

24. **A. Geier**, C. G. Dietrich, S. Voigt, M. Ananthanarayanan, F. Lammert, A. Schmitz, M. Trauner, H. E. Wasmuth, D. Boraschi, N. Balasubramaniyan, F. J. Suchy, S. Matern, C. Garton, Cytokine-dependent regulation of hepatic organic anion transporter gene transactivators in mouse liver. *American Journal of Physiology. Gastrointestinal and Liver Physiology* **289**, G831-841 (2005).
25. **A. Geier**, C. Garton, I. Theurl, G. Weiss, F. Lammert, C. G. Dietrich, R. Weiskirchen, H. Zoller, B. Hermanns, S. Matern, Occult celiac disease prevents penetrance of hemochromatosis. *World Journal of Gastroenterology* **11**, 3323-3326 (2005).
26. **A. Geier**, G. Zollner, C. G. Dietrich, M. Wagner, P. Fickert, H. Denk, N. van Rooijen, S. Matern, C. Garton, M. Trauner, Cytokine-independent repression of rodent Ntcp in obstructive cholestasis. *Hepatology* **41**, 470-477 (2005).
27. S. Hillebrandt, H. E. Wasmuth, R. Weiskirchen, C. Hellerbrand, H. Keppeler, A. Werth, R. Schirin-Sokhan, G. Wilkens, **A. Geier**, J. Lorenzen, J. Kohl, A. M. Gressner, S. Matern, F. Lammert, Complement factor 5 is a quantitative trait gene that modifies liver fibrogenesis in mice and humans. *Nature Genetics* **37**, 835-843 (2005).
28. . E. Wasmuth, D. Kunz, E. Yagmur, A. Timmer-Stranghoner, D. Vidacek, E. Siewert, J. Bach, **A. Geier**, E. A. Purucker, A. M. Gressner, S. Matern, F. Lammert, Patients with acute on chronic liver failure display „sepsis-like“ immune paralysis. *Journal of Hepatology* **42**, 195-201 (2005).
29. G. Zollner, M. Wagner, P. Fickert, **A. Geier**, A. Fuchsbichler, D. Silbert, J. Gumhold, K. Zatloukal, A. Kaser, H. Tilg, H. Denk, M. Trauner, Role of nuclear receptors and hepatocyte-enriched transcription factors for Ntcp repression in biliary obstruction in mouse liver. *American Journal of Physiology. Gastrointestinal and Liver Physiology* **289**, G798-805 (2005).
30. T. Rath, M. Roderfeld, J. Graf, S. Wagner, A. K. Vehr, C. Dietrich, **A. Geier**, E. Roeb, Enhanced expression of MMP-7 and MMP-13 in inflammatory bowel disease: a precancerous potential? *Inflammatory Bowel Diseases* **12**, 1025-1035 (2006).
31. M. Roderfeld, **A. Geier**, C. G. Dietrich, E. Siewert, B. Jansen, C. Garton, E. Roeb, Cytokine blockade inhibits hepatic tissue inhibitor of metalloproteinase-1 expression and up-regulates matrix metalloproteinase-9 in toxic liver injury. *Liver International* **26**, 579-586 (2006).
32. C. G. Dietrich, I. V. Martin, A. C. Porn, S. Voigt, C. Garton, C. Trautwein, **A. Geier**, Fasting induces basolateral uptake transporters of the SLC family in the liver via HNF4alpha and PGC1alpha. *American Journal of Physiology. Gastrointestinal and Liver Physiology* **293**, G585-590 (2007).
33. **A. Geier**, C. G. Dietrich, M. Trauner, C. Garton, Extrahepatic cholestasis downregulates Oatp1 by TNF-alpha signalling without affecting Oatp2 and Oatp4 expression and sodium-independent bile salt uptake in rat liver. *Liver International* **27**, 1056-1065 (2007).
34. C. G. Dietrich, S. Laupichler, S. Stanzel, R. Winograd, O. Al-Taie, C. Garton, **A. Geier**, Origin of and therapeutic approach to cardiac syndrome X: results of the proton pump inhibitor therapy for angina-like lingering pain trial (PITFALL trial). *World Journal of Gastroenterology* **14**, 6506-6512 (2008).

35. S. Dooley, J. Hamzavi, L. Ciuculan, P. Godoy, I. Ilkavets, S. Ehnert, E. Ueberham, R. Gebhardt, S. Kanzler, **A. Geier**, K. Breitkopf, H. Weng, P. R. Mertens, Hepatocyte-specific Smad7 expression attenuates TGF-beta-mediated fibrogenesis and protects against liver damage. *Gastroenterology* **135**, 642-659 (2008).
36. **A. Geier**, I. V. Martin, C. G. Dietrich, N. Balasubramanian, S. Strauch, F. J. Suchy, C. Gartung, C. Trautwein, M. Ananthanarayanan, Hepatocyte nuclear factor-4alpha is a central transactivator of the mouse Ntcp gene. *American Journal of Physiology. Gastrointestinal and Liver Physiology* **295**, G226-233 (2008).
37. J. J. Tischendorf, K. Wopp, K. L. Streetz, J. Bach, M. Meyer, S. Tischendorf, N. Gassler, A. Koch, **A. Geier**, H. E. Wasmuth, C. Trautwein, R. Winograd, [The value of duodenal biopsy within routine upper endoscopy: a prospective study in 1000 patients]. *Zeitschrift fur Gastroenterologie* **46**, 771-775 (2008).
38. I. V. Martin, J. Schmitt, A. Minkenbergh, J. C. Mertens, B. Stieger, B. Mullhaupt, **A. Geier**, Bile acid retention and activation of endogenous hepatic farnesoid-X-receptor in the pathogenesis of fatty liver disease in ob/ob-mice. *Biological Chemistry* **391**, 1441-1449 (2010).
39. R. Stienstra, F. Saudale, C. Duval, **A. Geier**, S. Keshtkar, J.E.M. Groener, N. van Rooijen, B. Staels, S. Kersten, M. Muller. Kupffer cells promote hepatic steatosis via interleukin-1 β -dependent suppression of peroxisome proliferator-activated receptor α activity. *Hepatology* **51**(2), 511-522 (2010) [Correction *Hepatology* **53**(4), 1415 (2011)].
40. C. G. Dietrich, A. K. Vehr, I. V. Martin, N. Gassler, T. Rath, E. Roeb, J. Schmitt, C. Trautwein, **A. Geier**, Downregulation of breast cancer resistance protein in colon adenomas reduces cellular xenobiotic resistance and leads to accumulation of a food-derived carcinogen. *International journal of cancer. International Journal of Cancer* **129**, 546-552 (2011).
41. R. Iwata, K. Baur, B. Stieger, J. C. Mertens, A. K. Daly, P. Frei, J. Braun, A. Vergopoulos, F. Stickel, K. Sabrane, I. V. Martin, J. Schmitt, O. Goetze, C. P. Day, B. Mullhaupt, **A. Geier**, C. C. S. G. Swiss Hepatitis, A common polymorphism in the ABCB11 gene is associated with advanced fibrosis in hepatitis C but not in non-alcoholic fatty liver disease. *Clinical Science* **120**, 287-296 (2011).
42. R. Iwata, B. Stieger, J. C. Mertens, T. Muller, K. Baur, P. Frei, J. Braun, A. Vergopoulos, I. V. Martin, J. Schmitt, O. Goetze, S. Bibert, P. Y. Bochud, B. Mullhaupt, T. Berg, **A. Geier**, C. C. S. G. Swiss Hepatitis, The role of bile acid retention and a common polymorphism in the ABCB11 gene as host factors affecting antiviral treatment response in chronic hepatitis C. *Journal of Viral Hepatitis* **18**, 768-778 (2011).
43. K. Baur, J. C. Mertens, J. Schmitt, R. Iwata, B. Stieger, J. J. Eloranta, P. Frei, F. Stickel, M. T. Dill, B. Seifert, H. A. Ferrari, A. von Eckardstein, P. Y. Bochud, B. Mullhaupt, **A. Geier**, C. C. S. G. Swiss Hepatitis, Combined effect of 25-OH vitamin D plasma levels and genetic vitamin D receptor (NR 111) variants on fibrosis progression rate in HCV patients. *Liver International* **32**, 635-643 (2012).
44. K. Baur, J. C. Mertens, J. Schmitt, R. Iwata, B. Stieger, P. Frei, B. Seifert, H. A. Bischoff Ferrari, A. von Eckardstein, B. Mullhaupt, **A. Geier**, C. C. S. G. Swiss Hepatitis, The vitamin D receptor gene bAt (CCA) haplotype impairs the response to pegylated-interferon/ribavirin-based therapy in chronic hepatitis C patients. *Antiviral Therapy* **17**, 541-547 (2012).

45. C. M. Frei-Lanter, S. R. Vavricka, T. H. Kruger, R. Tutuian, **A. Geier**, P. Bauerfeind, T. Krones, M. Fried, P. Frei, Endoscopy for repeatedly ingested sharp foreign bodies in patients with borderline personality disorder: an international survey. *European Journal of Gastroenterology & Hepatology* **24**, 793-797 (2012).
46. C. M. Lange, S. Bibert, Z. Kutalik, P. Burgisser, A. Cerny, J. F. Dufour, **A. Geier**, T. J. Gerlach, M. H. Heim, R. Malinverni, F. Negro, S. Regenass, K. Badenhoop, J. Bojunga, C. Sarrazin, S. Zeuzem, T. Muller, T. Berg, P. Y. Bochud, D. Moradpour, C. C. S. G. Swiss Hepatitis, A genetic validation study reveals a role of vitamin D metabolism in the response to interferon-alfa-based therapy of chronic hepatitis C. *PLoS one* **7**, e40159 (2012).
47. N. Many, F. Stickel, J. Schmitt, B. Stieger, M. Soyka, P. Frei, O. Gotze, B. Mullhaupt, **A. Geier**, Genetic variations in bile acid homeostasis are not overrepresented in alcoholic cirrhosis compared to patients with heavy alcohol abuse and absent liver disease. *Mutagenesis* **27**, 567-572 (2012).
48. J. C. Mertens, I. V. Martin, J. Schmitt, P. Frei, P. Bruners, C. Herweg, A. H. Mahnken, B. Mullhaupt, **A. Geier**, Multikinase inhibitor sorafenib transiently promotes necrosis after radiofrequency ablation in rat liver but activates growth signals. *European Journal of Radiology* **81**, 1601-1606 (2012).
49. P. R. Mertens, I. V. Martin, B. C. Frye, T. Rauen, S. Strauch, M. Pabst, **A. Geier**, Rat Mrp2 gene expression is regulated by an interleukin-1beta-stimulated biphasic response with enhanced transcription and subcellular shuttling of YB-1. *European Journal of Cell Biology* **91**, 533-541 (2012).
50. J. Schmitt, M. Roderfeld, K. Sabrane, P. Zhang, Y. Tian, J. C. Mertens, P. Frei, B. Stieger, A. Weber, B. Mullhaupt, E. Roeb, **A. Geier**, Complement factor C5 deficiency significantly delays the progression of biliary fibrosis in bile duct-ligated mice. *Biochemical and Biophysical Research Communications* **418**, 445-450 (2012).
51. L. P. Bechmann, P. Kocabayoglu, J. P. Sowa, S. Sydor, J. Best, M. Schlattjan, A. Beilfuss, J. Schmitt, R. A. Hannivoort, A. Kilicarslan, C. Rust, F. Berr, O. Tschopp, G. Gerken, S. L. Friedman, **A. Geier***, A. Canbay*, Free fatty acids repress small heterodimer partner (SHP) activation and adiponectin counteracts bile acid-induced liver injury in superobese patients with nonalcoholic steatohepatitis. *Hepatology* **57**, 1394-1406 (2013).
52. A. Biason-Lauber, M. Boni-Schnetzler, B. P. Hubbard, K. Bouzakri, A. Brunner, C. Cavelti-Weder, C. Keller, M. Meyer-Boni, D. T. Meier, C. Brorsson, K. Timper, G. Leibowitz, A. Patrignani, R. Bruggmann, G. Boily, H. Zulewski, **A. Geier**, J. M. Cermak, P. Elliott, J. L. Ellis, C. Westphal, U. Knobel, J. J. Eloranta, J. Kerr-Conte, F. Pattou, D. Konrad, C. M. Matter, A. Fontana, G. Rogler, R. Schlapbach, C. Regairaz, J. M. Carballido, B. Glaser, M. W. McBurney, F. Pociot, D. A. Sinclair, M. Y. Donath, Identification of a SIRT1 mutation in a family with type 1 diabetes. *Cell Metabolism* **17**, 448-455 (2013).
53. O. Goetze, J. Schmitt, K. Spliethoff, I. Theurl, G. Weiss, D. W. Swinkels, H. Tjalsma, M. Maggiorini, P. Krayenbuhl, M. Rau, H. Fruehauf, K. A. Wojtal, B. Mullhaupt, M. Fried, M. Gassmann, T. Lutz, **A. Geier**, Adaptation of iron transport and metabolism to acute high-altitude hypoxia in mountaineers. *Hepatology* **58**, 2153-2162 (2013).

54. M. Rau, F. Stickel, S. Russmann, C. N. Manser, P. P. Becker, M. Weisskopf, J. Schmitt, M. T. Dill, J. F. Dufour, D. Moradpour, D. Semela, B. Mullhaupt, **A. Geier**, C. S. G. Swiss Hepatitis, Impact of genetic SLC28 transporter and ITPA variants on ribavirin serum level, hemoglobin drop and therapeutic response in patients with HCV infection. *Journal of Hepatology* **58**, 669-675 (2013).
55. C. Eros de Bethlenfalva-Hora, J. C. Mertens, A. C. Piguet, J. Kettenbach, J. Schmitt, L. Terracciano, R. Weimann, J. F. Dufour*, **A. Geier***, Radiofrequency ablation suppresses distant tumour growth in a novel rat model of multifocal hepatocellular carcinoma. *Clinical Science* **126**, 243-252 (2014).
56. P. Frei, A. K. Leucht, U. Held, R. Kofmehl, C. N. Manser, J. Schmitt, J. Mertens, M. Rau, K. Baur, T. Gerlach, F. Negro, M. Heim, D. Moradpour, A. Cerny, J. F. Dufour, B. Mullhaupt, **A. Geier**, C. S. G. Swiss Hepatitis, Elderly age is not a negative predictive factor for virological response to therapy with pegylated interferon-alpha and ribavirin in chronic hepatitis C virus patients. *Liver International* **34**, 551-557 (2014).
57. A. Hock, L. Valkovic, **A. Geier**, T. Kuntzen, P. Boesiger, A. Henning, Navigator based respiratory gating during acquisition and preparation phases for proton liver spectroscopy at 3 T. *NMR in Biomedicine* **27**, 348-355 (2014).
58. N. Queisser, K. Happ, S. Link, D. Jahn, A. Zimnol, **A. Geier**, N. Schupp, Aldosterone induces fibrosis, oxidative stress and DNA damage in livers of male rats independent of blood pressure changes. *Toxicology and Applied Pharmacology* **280**, 399-407 (2014).
59. J. Schmitt, B. Kong, B. Stieger, O. Tschopp, S. M. Schultze, M. Rau, A. Weber, B. Mullhaupt, G. L. Guo*, **A. Geier***, Protective effects of farnesoid X receptor (FXR) on hepatic lipid accumulation are mediated by hepatic FXR and independent of intestinal FGF15 signal. *Liver International* **35**, 1133-44 (2015).
60. S. M. Schultze, M. Dietrich, D. Hynx, A. Geier, M. Niessen, G. A. Spinaz, B. A. Hemmings, O. Tschopp, Reduced hepatic lipid content in Pten-haplodeficient mice because of enhanced AKT2/PKBbeta activation in skeletal muscle. *Liver International* **35**, 1354-66 (2014).
61. J. Weiss, M. Rau, **A. Geier**, Non-alcoholic fatty liver disease: epidemiology, clinical course, investigation, and treatment. *Deutsches Arzteblatt International* **111**, 447-452 (2014).
62. K. A. Wojtal, A. Cee, S. Lang, O. Gotze, H. Fruhauf, **A. Geier**, M. Pastor-Anglada, J. Torres-Torronteras, R. Marti, M. Fried, T. A. Lutz, M. Maggiorini, M. Gassmann, G. Rogler, S. R. Vavricka, Downregulation of duodenal SLC transporters and activation of proinflammatory signaling constitute the early response to high altitude in humans. *American Journal of Physiology. Gastrointestinal and Liver Physiology* **307**, G673-688 (2014).
63. J. Weiss, M. Rau, H. Bantel, H. Bock, M. Demir, J. Kluwe, M. Krawczyk, A. Pathil-Warth, J.M. Schattenberg, F. Tacke, E. Roeb, **A. Geier**, Klinische Studiengruppe NAFLD (NAFLD CSG), First data concerning the medical supply of patients with non-alcoholic fatty liver disease in Germany - a survey in university hospital centers of hepatology. *Zeitschrift fur Gastroenterologie* **53**, 562-7 (2015).

64. E. Roeb, H.M. Steffen, H. Bantel, U. Baumann, A. Canbay, M. Demir, U. Drebber, **A. Geier**, J. Hampe, C. Hellerbrand, A. Pathil-Warth, J.M. Schattenberg, C. Schramm, H.K. Seitz, N. Stefan, F. Tacke, A. Tannapfel, P. Lynen Jansen, J. Bojunga, S2k Guideline non-alcoholic fatty liver disease. *Zeitschrift für Gastroenterologie* 53, 668-723 (2015).
65. P.P. Becker, M. Rau, J. Schmitt, C. Malsch, C. Hammer, H. Bantel, B. Müllhaupt, **A. Geier**, Performance of Serum microRNAs -122, -192 and -21 as Biomarkers in Patients with Non-Alcoholic Steatohepatitis. *PLoS One*. 10, e0142661 (2015).
66. M. Rau, A.K. Schilling, J. Meertens, I. Hering, J. Weiss, C. Jurowich, T. Kudlich, H. Hermanns, H. Bantel, N. Beyersdorf, **A. Geier**, Progression from Nonalcoholic Fatty Liver to Nonalcoholic Steatohepatitis Is Marked by a Higher Frequency of Th17 Cells in the Liver and an Increased Th17/Resting Regulatory T Cell Ratio in Peripheral Blood and in the Liver. *Journal of Immunology* **196**, 97-105 (2016).
67. D. Jahn, D. Sutor, D. Dorbath, J. Weiß, O. Götze, J. Schmitt, H.M. Hermanns, A. Geier, Farnesoid X receptor-dependent and -independent pathways mediate the transcriptional control of human fibroblast growth factor 19 by vitamin A. *Biochim Biophys Acta*. **1859**, 381-92 (2016).
68. G. Almanzar, C. Mayerl, J.C. Seitz, K. Höfner, A. Brunner, V. Wild, D. Jahn, **A. Geier**, M. Fassnacht, M. Prelog, Expression of 11beta-hydroxysteroid-dehydrogenase type 2 in human thymus. *Steroids*. **110**, 35-40 (2016).
69. J. Weiss, M. Rau, J. Meertens, I. Hering, L. Reichert, T. Kudlich, A.K. Koschker, C. Jurowich, **A. Geier**, Feasibility of liver stiffness measurement in morbidly obese patients undergoing bariatric surgery using XL probe. *Scand J Gastroenterol*. **51**, 1263-8 (2016).
70. T. Kuntzen, S. Kuhn, D. Kuntzen, B. Seifert, B. Müllhaupt, **A. Geier**, Influence of Ribavirin Serum Levels on Outcome of Antiviral Treatment and Anemia in Hepatitis C Virus Infection. *PLoS One*. **11**, e0158512 (2016).
80. M. Rau, B. Stieger, M.J. Monte, J. Schmitt, D. Jahn, I. Frey-Wagner, T. Raselli, J.J. Marin, B. Müllhaupt, G. Rogler, **A. Geier**, Alterations in Enterohepatic Fgf15 Signaling and Changes in Bile Acid Composition Depend on Localization of Murine Intestinal Inflammation. *Inflamm Bowel Dis*. **22**, 2382-9 (2016).
81. M. Krawczyk, M. Rau, J.M. Schattenberg, H. Bantel, A. Pathil, M. Demir, J. Kluwe, T. Boettler, F. Lammert, **A. Geier**, Combined effects of the TM6SF2 rs58542926, PNPLA3 rs738409 and MBOAT7 rs641738 variants on NAFLD severity: multicentre biopsy-based study. *Journal of Lipid Research* (2017) 58, 247-255.
82. E.E. Bankoglu, O. Tschopp, J. Schmitt, P. Burkard, D. Jahn, **A. Geier***, H. Stopper*, Role of PTEN in Oxidative Stress and DNA Damage in the Liver of Whole-Body Pten Haplodeficient Mice. *PLoS One*. **11**, e0166956 (2016).
83. E.C. Heier, A. Meier, H. Julich-Haertel, S. Djudjaj, M. Rau, T. Tschernig, **A. Geier**, P. Boor, F. Lammert, V. Lukacs-Kornek, 1CD103+ dendritic cells protect against steatosis progression towards steatohepatitis. *Journal of Hepatology* (2017) Jan 18. pii: S0168-8278(17)30012-0. doi: 10.1016/j.jhep.2017.01.008. [Epub ahead of print].

84. **A. Geier**, R.I.R. Macias, D. Bettinger, J. Weiss, H. Bantel, D. Jahn, R. Al-Abdulla, J.J.G. Marin. The lack of the organic cation transporter OCT1 at the plasma membrane of tumor cells precludes a positive response to sorafenib in patients with hepatocellular carcinoma. *Oncotarget* (2017) Feb 2. doi: 10.18632/oncotarget.15029. [Epub ahead of print].

II Fallmitteilungen

1. E. Laubach, G. Meyer, P. Schwandt, T. Helmberger, **A. Geier**, K. Jacob, M.M. Ritter: Aldosteron-produzierendes Adenom der linken Nebenniere. *Münchener Medizinische Wochenschrift* **140**, 424-428 (1998).
2. **A. Geier**, H. Fürst, E. Laubach, A. Stäbler, R. Tiling, J. Müller-Höcker, P. Schwandt, M.M. Ritter: Somnolenz und Erbrechen bei einer Patientin nach operiertem Nebenschilddrüsen-Carcinom. *Internist* **40**, 311-315 (1999).
3. **A. Geier**, F. Lammert, C. Gartung, H. N. Nguyen, J. E. Wildberger, S. Matern, Magnetic resonance imaging and magnetic resonance cholangiopancreatography for diagnosis and pre-interventional evaluation of a fluid thoracic mass. *European Journal of Gastroenterology & Hepatology* **15**, 429-431 (2003).
4. E. Siewert, **A. Geier**, C. G. Dietrich, B. Backes, S. Matern, C. Gartung, [Acute infectious mononucleosis-like syndrome due to infection with cytomegalovirus in immunocompetence]. *Medizinische Klinik* **99**, 154-161 (2004)
5. E. Siewert, L. Tietze, C. Maintz, **A. Geier**, C. G. Dietrich, S. Matern, C. Gartung, [Gastrointestinal stromal tumors: a broad clinical spectrum from incidental -discovery to acute gastrointestinal bleeding]. *Zeitschrift für Gastroenterologie* **42**, 233-242 (2004)
6. E. Siewert, W. Weyers, C. G. Dietrich, **A. Geier**, F. Lammert, S. Matern, Cutaneous mucinosis and skin necrosis complicates interferon alfacon-1 (consensus interferon) treatment of chronic hepatitis C. *European Journal of Medical Research* **10**, 63-67 (2005).
7. C.G. Dietrich, C. Gartung, F. Lammert, A. Geier: Portopulmonale Hypertonie nach Lebertransplantation. *Z Gastroenterologie* **44** (4) , 348 (2006).
8. **A. Geier**, A. Koch, J. Bach, W. Schafer, M. Jansen, C. Trautwein, Profuse rectal bleeding of no visible cause. *Lancet* **369**, 1664 (2007).
9. L. E. Sander, A. Koch, C. Gartung, R. Winograd, A. Donner, A. Wellmann, C. Trautwein, **A. Geier**, Lessons from a patient with an unusual hepatic overlap syndrome. *Nature Clinical Practice. Gastroenterology & Hepatology* **4**, 635-640 (2007).
10. H.H. Lutz, M. Spannauer, A. Koch, A. Donner, B. Heintz, C. Trautwein, **A. Geier**: Systemischer Lupus erythematodes als Begleiterkrankung einer refraktären Autoimmunhepatitis; Behandlung mit Mycophenolatmofetil. *Gastroenterologie Up2date* **4** (1), 6-11 (2008).
11. P. Frei, A. Weber, **A. Geier**, J. C. Mertens, S. Kohler, G. Rogler, B. Mullhaupt, Lessons from a transplant patient with diarrhea, cryptosporidial infection, and possible mycophenolate mofetil-associated colitis. *Transplant Infectious Disease* **13**, 416-418 (2011).

12. J. Mertens, A. Weber, B. Mullhaupt, **A. Geier**, Unusual cause of biliary colic in a Swiss farmer. *Liver International* **31**, 666 (2011).
13. M.P. Hilty, M. Halama, A.K. Zimmermann, M. Maggiorini, **A. Geier**, Ulcerating Ileocolitis in Severe Amatoxin Poisoning. *Case Rep Gastrointest Med.* 632085 (2015).
14. C. Lapa, J.S. Schmid, J. Weiss, **A. Geier**, O. Götze, Recurrent Extrahepatic Hepatocellular Carcinoma Detected by 18F-Choline PET/CT. *Clin Nucl Med.* **41**, 490-1 (2016).

In Revision:

F. Anger, S. Löb, J.F. Lock, O. Götze, **A. Geier**, I. Klein. Toxic-drug induced liver failure during therapy of rheumatoid arthritis with tocilizumab subcutaneously: a case report. *Rheumatology* (RHE-16-2020)

III Übersichtsarbeiten in Zeitschriften

1. H.E. Wasmuth, C. Stolte, A. Koch, **A. Geier**, C. Garton, S. Matern: Ziele und Strategien der Adipositas therapie. *VitaMinSpur* **15**, 176-179 (2000).
2. **A. Geier**, C. Garton, G. Staatz, H.N. Nguyen, S. Matern: Moderne Diagnostik benigner und maligner Raumforderungen der Leber. *Dt. Ärzteblatt* **98**, A 3120-3131 (2001).
3. F. Lammert, **A. Geier**, A. Figge, S. Matern: Pathogenese der Cholezystolithiasis – neue molekulare Konzepte. *Chir Gastroenterol* **17**, 108-113 (2001).
4. H. Wasmuth, C. Garton, **A. Geier**, F. Lammert, S. Matern: Die glutensensitive Enteropathie (Zöliakie, Sprue) – Aspekte der Klassifizierung, Pathogenese, Diagnostik, und Therapie. *Ernährung&Medizin* **17**, 74-77 (2002).
5. C.G. Dietrich, A. Geier, J. Tacke, C. Garton, S. Matern: Therapie des hepatozellulären Karzinoms. *Dt. Ärzteblatt* **100**, A772-782 (2003).
6. C. G. Dietrich, **A. Geier**, R. P. Oude Elferink, ABC of oral bioavailability: transporters as gatekeepers in the gut. *Gut* **52**, 1788-1795 (2003).
7. **A. Geier**, C. Garton, C. G. Dietrich, F. Lammert, H. E. Wasmuth, S. Matern, [Diagnosis of cholestatic disorders]. *Medizinische Klinik* **98**, 499-509 (2003).
8. C.G. Dietrich, **A. Geier**, R.P.J. Oude Elferink, S. Matern: Defense barriers in the body: contribution of multidrug resistance-associated protein 2. *Comm. Toxicol.* **9**, 201-14 (2003).
9. C. G. Dietrich, C. Garton, J. Lorenzen, **A. Geier**, H. E. Wasmuth, S. Matern, F. Lammert, Enlarged cervical lymph nodes and elevated liver chemistry tests: a therapeutic dilemma. *Annals of Hepatology* **3**, 118-120 (2004).
10. **A. Geier**, C. Garton, S. Matern, Regulation of hepatobiliary transporters in cholestatic liver disease. *Medizinische Klinik* **99**, 7-17 (2004).
11. F. Lammert, G. Wilkens, C. G. Dietrich, **A. Geier**, H. E. Wasmuth, S. Matern, Extrahepatic manifestations of chronic liver diseases. *Versicherungsmedizin* **57**, 64-71 (2005).

12. **A. Geier**, H. Deppe, S. Willis, R. Holy, C. Trautwein, C. Gartung, Multidisciplinary treatment of rectal cancer. *Deutsche Medizinische Wochenschrift* **131**, 1945-1950 (2006).
13. **A. Geier**, P. Fickert, M. Trauner, Mechanisms of disease: mechanisms and clinical implications of cholestasis in sepsis. *Nature Clinical Practice. Gastroenterology & Hepatology* **3**, 574-585 (2006).
14. **A. Geier**, G. Zollner, C.G. Dietrich: Ernährungsintervention bei Leber- und Gallenerkrankungen. *Ernährung und Medizin* 21 (S1), 16-19 (2006).
15. **A. Geier**, M. Wagner, C. G. Dietrich, M. Trauner, Principles of hepatic organic anion transporter regulation during cholestasis, inflammation and liver regeneration. *Biochimica et Biophysica Acta* **1773**, 283-308 (2007).
16. J. J. Tischendorf, **A. Geier**, C. Trautwein, Current diagnosis and management of primary sclerosing cholangitis. *Liver Transplantation* **14**, 735-746 (2008).
17. J. C. Mertens, **A. Geier**, B. Mullhaupt, Treatment of chronic hepatitis B and C – update 2010. *Praxis* **99**, 1015-1028 (2010).
18. P. Dutkowski, C. E. Oberkofler, M. Bechir, B. Mullhaupt, **A. Geier**, D. A. Raptis, P. A. Clavien, The model for end-stage liver disease allocation system for liver transplantation saves lives, but increases morbidity and cost: a prospective outcome analysis. *Liver Transplantation* **17**, 674-684 (2011).
19. P. Dutkowski, C. E. Oberkofler, K. Slankamenac, M. A. Puhan, E. Schadde, B. Mullhaupt, **A. Geier**, P. A. Clavien, Are there better guidelines for allocation in liver transplantation? A novel score targeting justice and utility in the model for end-stage liver disease era. *Annals of Surgery* **254**, 745-753; discussion 753 (2011).
20. P. Frei, **A. Geier**, P. Dutkowski, B. Mullhaupt, [Liver transplantation]. *Therapeutische Umschau* **68**, 219-224 (2011).
21. P. Samaras, **A. Geier**, O. Riesterer, P. Dutkowski. Tumore des biliären Trakts. Häufigkeit, Diagnostik und Therapie. *Schweizerische Zeitschrift für Onkologie* **2**, 26-31 (2011).
22. P. D. Greig, **A. Geier**, A. M. D'Alessandro, M. Campbell, L. Wright, Should we perform deceased donor liver transplantation after living donor liver transplantation has failed? *Liver Transplantation* **17 Suppl 2**, S139-146 (2011).
23. B. Stieger, **A. Geier**, Genetic variations of bile salt transporters as predisposing factors for drug-induced cholestasis, intrahepatic cholestasis of pregnancy and therapeutic response of viral hepatitis. *Expert Opinion on Drug Metabolism & Toxicology* **7**, 411-425 (2011).
24. **A. Geier**, E. Schadde, B. Mullhaupt, [Current therapeutic strategies for hepatocellular carcinoma]. *MMW Fortschritte der Medizin* **154**, 63-67; quiz 68-69 (2012).
25. M. Rau, K. Baur, **A. Geier**, Host genetic variants in the pathogenesis of hepatitis C. *Viruses* **4**, 3281-3302 (2012).
26. F. Stickel, B. Helbling, M. Heim, **A. Geier**, C. Hirschi, B. Terziroli, K. Wehr, A. De Gottardi, F. Negro, T. Gerlach, Critical review of the use of erythropoietin in the treatment of anaemia during therapy for chronic hepatitis C. *Journal of Viral Hepatitis* **19**, 77-87 (2012).

27. P.A. Clavien, M. Lesurtel, P.M. Bossuyt, G.J. Gores, B. Langer, A. Perrier (+ 110 Collaborators: ...**A. Geier**,...); OLT for HCC Consensus Group. Recommendations for liver transplantation for hepatocellular carcinoma: an international consensus conference report. *Lancet Oncology* **13**(1), e11-22 (2012).
28. Swiss Association for the Study of the Liver (Collaborators: Moradpour D, Helbling B, Cerny A, De Gottardi A, Heim MH, Majno P, Müllhaupt B, Negro F, Rubbia-Brandt L, Semela D, Vilei SB, Bernsmeier C, Bihl F, Borovicka J, Dill M, Dufour JF, Filipowicz M, Geier A, Gerlach T, Giostra E, Gonvers JJ, Goossens N, Gubler C, Hadengue A, Heim MH, Helbling B, Hellstern M, Hirschi C, Jochum W, Krähenbühl S, Kullak-Ublick G, Lange C, Lavanchy D, Majno P, Malinverni R, McLin V, Mentha G, Mertens JC, Nasser S, Oneta C, Pache I, Rubbia-Brandt L, Sauter B, Semela D, Spahr L, Steuerwald M, Stickel F, Stieger B, Wehr K, Zala G). Treatment of chronic hepatitis C genotype 1 with triple therapy comprising telaprevir or boceprevir. *Swiss Med Wkly* 2012 Feb 24 **142**, w13516 (2012).
29. **A. Geier**, [Hepatitis C update: what has changed? What can we expect in the near future?]. *MMW Fortschritte der Medizin* **155**, 59-62 (2013).
30. C. G. Dietrich, **A. Geier**, Effect of drug transporter pharmacogenetics on cholestasis. *Expert Opinion on Drug Metabolism & Toxicology* **10**, 1533-1551 (2014).
31. C.G. Dietrich, **A. Geier**, Effect of drug transporter pharmacogenetics on cholestasis. *Expert Opinion Drug Metab Toxicol.* **10**, 1533-51 (2014).
32. M. Rau, J. Weiss, **A. Geier**, Non-alcoholic fatty liver disease (NAFLD). *Dtsch Med Wochenschr.* **140**, 1051-5 (2015).
33. D. Jahn, M. Rau, H.M. Hermanns, **A. Geier**, Mechanisms of enterohepatic fibroblast growth factor 15/19 signaling in health and disease. *Cytokine Growth Factor Rev.* **26**, 625-35 (2015).
34. C.G. Dietrich, O. Götze, **A. Geier**, Molecular changes in hepatic metabolism and transport in cirrhosis and their functional importance. *World J Gastroenterol.* **22**, 72-88 (2016).
35. J. Weiß, **A. Geier**, Hepatitis C. *MMW Fortschr Med.* **157**, 86-9; quiz 90, (2015).
36. H.M. Hermanns, J. Wohlfahrt, C. Mais, S. Hergovits, D. Jahn, **A. Geier**, Endocytosis of pro-inflammatory cytokine receptors and its relevance for signal transduction. *Biol Chem.* **397**, 695-708 (2016).
37. J.M. Banales, V. Cardinale, G. Carpino, M. Marzioni, J.B. Andersen, P. Invernizzi, G.E. Lind, T. Folseraas, S.J. Forbes, L. Fouassier, **A. Geier**, D.F. Calvisi, J.C. Mertens, M. Trauner, A. Benedetti, L. Maroni, J. Vaquero, R.I. Macias, C. Raggi, M.J. Perugorria, E. Gaudio, K.M. Boberg, J.J. Marin, D. Alvaro, Expert consensus document: Cholangiocarcinoma: current knowledge and future perspectives consensus statement from the European Network for the Study of Cholangiocarcinoma (ENS-CCA). *Nat Rev Gastroenterol Hepatol.* **13**, 261-80 (2016).
38. J. Weiss, **A. Geier**, Kurzbewertung Velpatasvir (Epclusa). *Internistische Praxis* (2017) in Press.
39. C.G. Dietrich, M. Rau. D. Jahn, **A. Geier**. Changes in drug transport and metabolism and their clinical implications in non-alcoholic fatty liver disease. *Expert Opinion On Drug Metabolism and Toxicology In Press.*

IV Editorials:

1. **A. Geier**, C. Trautwein, Bile acids are „homeotrophic“ sensors of the functional hepatic capacity and regulate adaptive growth during liver regeneration. *Hepatology* **45**, 251-253 (2007).
2. **A. Geier**, Shedding new light on vitamin D and fatty liver disease. *Journal of Hepatology* **55**, 273-275 (2011).
3. **A. Geier**, Hepatitis B virus: the „metabolovirus“ highjacks cholesterol and bile acid metabolism. *Hepatology* **60**, 1458-1460 (2014).
4. M. Rau, **A. Geier**, Emerging therapies for NASH - the future is now. *Expert Review of Clinical Pharmacology* (2017) (ERF-2017-0022), in press.

V Buchbeiträge

1. **A. Geier**, S. Matern, C. Garton. Regulation of sinusoidal bile acid transporters in cholestasis and during liver regeneration. In: Boyer, J.L., Keppler, D., Matern, S., Meier-Abt, P.J. eds. *Hepatobiliary Transport: From Bench to Bedside*. Dordrecht, Boston, London: Kluwer Academic Publishers 32-36 (2001).
2. **A. Geier**, S. Matern, C. Garton. Regulation of hepatocellular organic anion transporters by cytokines. In: Gressner, A.M., Heinrich, P.C., Matern, S. eds. *Cytokines in Liver Injury and Repair*. Dordrecht, Boston, London: Kluwer Academic Publishers 201-204 (2002).
3. I.V. Martin, **A. Geier**. Reactivation of hepatic organic anion transporters in different forms of acquired cholestasis by nuclear hormone receptor activators. In: Jansen, P.L.M., Keppler, D., Beuers, U., Stiehl, A., Trauner, M. eds. *Bile Acid Biology and Therapeutic Actions*. Dordrecht, Boston, London: Kluwer Academic Publishers 185-191 (2009).
4. **A. Geier**, B. Müllhaupt. Monitoring the patient awaiting liver transplantation. In: Killenberg, PG, Clavien, PA, eds. *Medical Care of the Liver Transplant Patient 4th Edition*, Wiley-Blackwell 13-25 (2012).
5. **A. Geier**, B. Müllhaupt. Sexual function and fertility after liver transplantation. In: Killenberg, PG, Clavien, PA, eds. *Medical Care of the Liver Transplant Patient 4th Edition*, Wiley-Blackwell 406-418 (2012).
6. D. Jahn, M. Rau, J. Wohlfahrt, H.M. Hermanns, **A. Geier**. Non-Alcoholic Steatohepatitis: From Pathophysiology to Novel Therapies. *Dig Dis.* **34**, 356-63 (2016).
7. M. Rau, J. Weiss, **A. Geier**. Nichtalkoholische Fettlebererkrankung (NAFLD). *DGIM Innere Medizin, Springer Reference Medizin*, H. Lehnert et al. (Hrsg.), Springer-Verlag Berlin Heidelberg (2016).

VI Leserbrief

1. **A. Geier**, H. N. Nguyen, C. Garton, S. Matern, MRCP and ERCP to detect small ampullary carcinoma. *Lancet* **356**, 1607-1608 (2000).
2. H. E. Wasmuth, C. Stolte, **A. Geier**, C. Garton, S. Matern, Induction of multiple autoantibodies to islet cell antigens during treatment with interferon alpha for chronic hepatitis C. *Gut* **49**, 596-597 (2001).

3. C. G. Dietrich, **A. Geier**, F. Lammert, Bosentan for pulmonary hypertension. *The New England journal of medicine* **347**, 292-294; author reply 292-294 (2002).
4. A. Geier, C. Gattung: Diskussion: Moderne Diagnostik benigner und maligner Raumforderungen der Leber. *Dt Ärzteblatt* **99** (33), A 2206 (2002).
5. C. G. Dietrich, **A. Geier**, S. Matern, C. Gattung, Multidrug resistance and response to antiretroviral treatment. *Lancet* **359**, 2114; author reply 2214-2115 (2002).
6. **A. Geier**, C. Gattung, C. G. Dietrich, Hepatitis B e Antigen and the Risk of Hepatocellular Carcinoma. *The New England Journal of Medicine* **347**, 1721-1722; author reply 1721-1722 (2002).
7. **A. Geier**, C. G. Dietrich, C. Gattung, Antiviral therapy in HBe-Ag-positive hepatitis B with normal aminotransferase levels. *Hepatology* **37**, 712-713; author reply 713 (2003).
8. C. G. Dietrich, **A. Geier**, It takes more than one--is a single UGT polymorphism enough to
9. C. G. Dietrich, C. Gattung, E. Siewert, F. Lammert, S. Matern, **A. Geier**, [Severe refractory pulmonary hypertension after liver transplantation for hepatitis C liver cirrhosis]. *Zeitschrift für Gastroenterologie* **44**, 33-37 (2006).
10. **A. Geier**, Shedding new light on vitamin D and fatty liver disease. *Journal of Hepatology* **55**, 273-275 (2011).
11. M. Rau, **A. Geier**, Reply to: „Estimating ribavirin plasma exposure: genetics or therapeutic drug monitoring?“. *Journal of Hepatology* **59**, 634-635 (2013).
12. J. Weiss, M. Rau, **A. Geier**, Reply to „Non-alcoholic fatty liver disease: epidemiology, clinical course, investigation, and treatment“. *Deutsches Ärzteblatt international* **112**, 144 (2015). 2015 Feb 27;112(9):144
13. M. Krawczyk, M. Rau, F. Grünhage, J.M. Schattenberg, H. Bantel, A. Pathil, M. Demir, J. Kluwe, T. Boettler, **A. Geier**, F. Lammert; Clinical Study Group NAFLD (NAFLD CSG). The ABCB4 p.T175A variant as potential modulator of hepatic fibrosis in patients with chronic liver diseases: Looking beyond the cholestatic realm. *Hepatology* (2017) Feb 8. doi: 10.1002/hep.29100. [Epub ahead of print]
14. **A. Geier**, D. Jahn, H.M. Hermanns. Interleukin-6 - the dark side of liver regeneration in chronic liver disease. *Hepatology* (2017), in press.