

CLAIMS

1. A crystalline hydrate of odevixibat.
- 5 2. The hydrate according to claim 1, which is a channel hydrate.
3. The hydrate according to claim 1 or 2, which comprises from about 0 to about 2 moles of water associated with the crystal per mole of odevixibat.
- 10 4. The hydrate according to any one of claims 1 to 3, which is a sesquihydrate.
5. Crystal modification 1 of odevixibat, having an XRPD pattern, obtained with CuK α 1-radiation, with peaks at 2θ positions 5.6 ± 0.2 , 6.7 ± 0.2 and/or 12.1 ± 0.2 .
- 15 6. The crystal modification according to claim 5, having an XRPD pattern, obtained with CuK α 1-radiation, with specific peaks at 2θ positions 5.6 ± 0.2 , 6.7 ± 0.2 and 12.1 ± 0.2 and one or more of the characteristic peaks: 4.1 ± 0.2 , 4.6 ± 0.2 , 9.3 ± 0.2 , 9.4 ± 0.2 and 10.7 ± 0.2 .
7. Crystal modification 1 of odevixibat according to claim 5, having an XRPD pattern, obtained
20 with CuK α 1-radiation, as shown in FIG. 1.
8. Crystal modification 1 of odevixibat according to any one of claims 5 to 7, having a crystallinity of greater than about 99%.
- 25 9. A mixed solvate of odevixibat, containing about two moles of water per mole of odevixibat.
10. The mixed solvate according to claim 9, wherein the organic solvent is methanol, ethanol, 2-propanol, acetone, acetonitrile, 1,4-dioxane, DMF or DMSO.
- 30 11. The mixed solvate according to claim 9 or 10, wherein the organic solvent is ethanol.
12. Crystal modification 2A of odevixibat, having an XRPD pattern, obtained with CuK α 1-radiation, with peaks at 2θ positions 5.0 ± 0.2 , 5.1 ± 0.2 and/or 11.8 ± 0.2 .

13. The crystal modification according to claim 12, having an XRPD pattern, obtained with CuK α 1-radiation, with peaks at $^{\circ}2\theta$ positions 5.0 ± 0.2 , 5.1 ± 0.2 , 6.4 ± 0.2 , 6.6 ± 0.2 , 9.5 ± 0.2 and 11.8 ± 0.2 .
- 5 14. Crystal modification 2A of odevixibat according to claim 12, having an XRPD pattern, obtained with CuK α 1-radiation, as shown in any one of FIG. 6 to 9.
15. Crystal modification 2B of odevixibat, having an XRPD pattern, obtained with CuK α 1-radiation, with peaks at $^{\circ}2\theta$ positions 4.8 ± 0.2 , 5.1 ± 0.2 and/or 11.6 ± 0.2 .
- 10 16. The crystal modification according to claim 15, having an XRPD pattern, obtained with CuK α 1-radiation, with peaks at $^{\circ}2\theta$ positions 4.8 ± 0.2 , 5.1 ± 0.2 , 6.2 ± 0.2 , 6.67 ± 0.2 , 9.5 ± 0.2 , 11.6 ± 0.2 and 20.3 ± 0.2 .
- 15 17. Crystal modification 2B of odevixibat according to claim 15, having an XRPD pattern, obtained with CuK α 1-radiation, as shown in FIG. 10 or 11.
18. Crystal modification 2C of odevixibat, having an XRPD pattern, obtained with CuK α 1-radiation, with peaks at $^{\circ}2\theta$ positions 5.0 ± 0.2 , 6.2 ± 0.2 , 9.4 ± 0.2 and/or 23.9 ± 0.2 .
- 20 19. The crystal modification according to claim 18, having an XRPD pattern, obtained with CuK α 1-radiation, with peaks at $^{\circ}2\theta$ positions 5.0 ± 0.2 , 6.2 ± 0.2 , 9.4 ± 0.2 and 23.9 ± 0.2 and one or more of the characteristic peaks: 11.5 ± 0.2 , 19.5 ± 0.2 and 20.2 ± 0.2 .
- 25 20. Crystal modification 2C of odevixibat according to claim 18, having an XRPD pattern, obtained with CuK α 1-radiation, as shown in FIG. 12.
21. Use of crystal modification 2 of odevixibat according to any one of claims 12 to 20 in a process for the preparation of crystal modification 1 of odevixibat.
- 30 22. A process for the preparation of crystal modification 1 of odevixibat, comprising isolating crystal modification 2 of odevixibat from a solution of odevixibat in a solvent mixture comprising water and an organic solvent selected from the group consisting of methanol, ethanol, 2-propanol, acetone, acetonitrile, 1,4-dioxane, DMF and DMSO.

23. The process according to claim 22, wherein the crystal modification 2 of odevixibat is crystal modification 2A of odevixibat.
- 5 24. The process according to claim 22 or 23, wherein crystal modification 2A of odevixibat is obtained from a mixture of water and ethanol.
25. The process according to claim 24, wherein the ethanol content in the solvent mixture is about 55 to about 75% (v/v).
- 10 26. A pharmaceutical composition comprising crystal modification 1 of odevixibat according to any one of claims 5 to 8, together with a pharmaceutically acceptable diluent or carrier.
27. Crystal modification 1 of odevixibat according to any one of claims 5 to 8, for use in therapy.
- 15 28. Crystal modification 1 of odevixibat according to any one of claims 5 to 8, for use in the treatment or prevention of a cardiovascular disease or a disorder of fatty acid metabolism or a glucose utilization disorder, such as hypercholesterolemia; disorders of fatty acid metabolism; type 1 and type 2 diabetes mellitus; complications of diabetes, including cataracts, micro- and macrovascular diseases, retinopathy, neuropathy, nephropathy and delayed wound healing,
- 20 tissue ischaemia, diabetic foot, arteriosclerosis, myocardial infarction, acute coronary syndrome, unstable angina pectoris, stable angina pectoris, stroke, peripheral arterial occlusive disease, cardiomyopathy, heart failure, heart rhythm disorders and vascular restenosis; diabetes-related diseases such as insulin resistance (impaired glucose
- 25 homeostasis), hyperglycemia, hyperinsulinemia, elevated blood levels of fatty acids or glycerol, obesity, dyslipidemia, hyperlipidemia including hypertriglyceridemia, metabolic syndrome (syndrome X), atherosclerosis and hypertension; and for increasing high density lipoprotein levels.
- 30 29. Crystal modification 1 of odevixibat according to any one of claims 5 to 8, for use in the treatment or prevention of a gastrointestinal disease or disorder, such as constipation (including chronic constipation, functional constipation, chronic idiopathic constipation (CIC), intermittent/sporadic constipation, constipation secondary to diabetes mellitus, constipation secondary to stroke, constipation secondary to chronic kidney disease, constipation secondary

to multiple sclerosis, constipation secondary to Parkinson's disease, constipation secondary to systemic sclerosis, drug induced constipation, irritable bowel syndrome with constipation (IBS-C), irritable bowel syndrome mixed (IBS-M), pediatric functional constipation and opioid induced constipation); Crohn's disease; primary bile acid malabsorption; irritable bowel syndrome (IBS); inflammatory bowel disease (IBD); ileal inflammation; and reflux disease and complications thereof, such as Barrett's esophagus, bile reflux esophagitis and bile reflux gastritis.

30. Crystal modification 1 of odeixibat according to any one of claims 5 to 8, for use in the treatment or prevention of a liver disease or disorder, such as an inherited metabolic disorder of the liver; inborn errors of bile acid synthesis; congenital bile duct anomalies; biliary atresia; post-Kasai biliary atresia; post-liver transplantation biliary atresia; neonatal hepatitis; neonatal cholestasis; hereditary forms of cholestasis; cerebrotendinous xanthomatosis; a secondary defect of BA synthesis; Zellweger's syndrome; cystic fibrosis-associated liver disease; alpha1-antitrypsin deficiency; Alagilles syndrome (ALGS); Byler syndrome; a primary defect of bile acid (BA) synthesis; progressive familial intrahepatic cholestasis (PFIC) including PFIC-1, PFIC-2, PFIC-3 and non-specified PFIC, post-biliary diversion PFIC and post-liver transplant PFIC; benign recurrent intrahepatic cholestasis (BRIC) including BRIC1, BRIC2 and non-specified BRIC, post-biliary diversion BRIC and post-liver transplant BRIC; autoimmune hepatitis; primary biliary cirrhosis (PBC); liver fibrosis; non-alcoholic fatty liver disease (NAFLD); non-alcoholic steatohepatitis (NASH); portal hypertension; cholestasis; Down syndrome cholestasis; drug-induced cholestasis; intrahepatic cholestasis of pregnancy (jaundice during pregnancy); intrahepatic cholestasis; extrahepatic cholestasis; parenteral nutrition associated cholestasis (PNAC); low phospholipid-associated cholestasis; lymphedema cholestasis syndrome 1 (LSC1); primary sclerosing cholangitis (PSC); immunoglobulin G4 associated cholangitis; primary biliary cholangitis; cholelithiasis (gall stones); biliary lithiasis; choledocholithiasis; gallstone pancreatitis; Caroli disease; malignancy of bile ducts; malignancy causing obstruction of the biliary tree; biliary strictures; AIDS cholangiopathy; ischemic cholangiopathy; pruritus due to cholestasis or jaundice; pancreatitis; chronic autoimmune liver disease leading to progressive cholestasis; hepatic steatosis; alcoholic hepatitis; acute fatty liver; fatty liver of pregnancy; drug-induced hepatitis; iron overload disorders; congenital bile acid synthesis defect type 1 (BAS type 1); drug-induced liver injury (DILI); hepatic fibrosis; congenital hepatic fibrosis; hepatic cirrhosis; Langerhans cell histiocytosis (LCH); neonatal ichthyosis sclerosing cholangitis (NISCH); erythropoietic

- protoporphyrin (EPP); idiopathic adulthood ductopenia (IAD); idiopathic neonatal hepatitis (INH); non syndromic paucity of interlobular bile ducts (NS PILBD); North American Indian childhood cirrhosis (NAIC); hepatic sarcoidosis; amyloidosis; necrotizing enterocolitis; serum bile acid-caused toxicities, including cardiac rhythm disturbances (e.g., atrial fibrillation) in setting of abnormal serum bile acid profile, cardiomyopathy associated with liver cirrhosis ("cholecardia"), and skeletal muscle wasting associated with cholestatic liver disease; viral hepatitis (including hepatitis A, hepatitis B, hepatitis C, hepatitis D and hepatitis E); hepatocellular carcinoma (hepatoma); cholangiocarcinoma; bile acid-related gastrointestinal cancers; and cholestasis caused by tumours and neoplasms of the liver, of the biliary tract and of the pancreas.
31. Crystal modification 1 of odevixibat according to any one of claims 5 to 8, for use in the treatment or prevention of hyperabsorption syndromes (including abetalipoproteinemia, familial hypobetalipoproteinemia (FHBL), chylomicron retention disease (CRD) and sitosterolemia); hypervitaminosis and osteopetrosis; hypertension; glomerular hyperfiltration; and pruritus of renal failure.