환자중심 의료기술 최적화 연구사업
데이터 활용 지침서

DB명: 현재 가이드라인 치료 기준에 포함되지 않는 만성 B형 간염 환자에서 테노포비르 알라페나미드 치료에 따른 장기 간질환 예후 변화를 조사하는 다기관, 공개, 무작위배정 연구

Version 1.0 (2025.12)

PACEN
PAtient-CENtered Clinical Research Coordinating Center
환자중심 의료기술 최적화 연구사업단

목 차

Ⅰ. 기본 안내사항

1. 사업개요

(1) 목적

환자중심 의료기술 최적화 연구사업(이하, PACEN)은 인·허가 이후 보건의료 현장에서 사용되는 다양한 의료기술의 효과성·안전성·비용효과성 등 근거창출 목적의 연구자주도 공익적 임상연구를 지원하는 국가 R&D 사업입니다.

PACEN은 전향적 임상연구에서 수집·구축한 임상연구데이터를 지속 활용하여 공익적 임상연구를 활성화하고자 연구 목적에 한하여 임상연구데이터를 공개 및 분양합니다.

(2) 관계법령

PACEN 임상연구 데이터는 아래의 법률에 의거하여 공개 및 활용됩니다.

※ 국가연구개발혁신법 제16조(연구개발성과의 소유·관리)
④ 중앙행정기관의 장은 공공의 이익을 목적으로 연구개발성과를 활용하기 위하여 필요한 경우 연구개발성과를 국가의 소유로 할 수 있다.
※ 국가연구개발혁신법 제17조(연구개발성과의 활용)
④ 중앙행정기관의 장은 연구개발성과의 공동활용을 위하여 필요한 지원을 하여야 한다.

2. 비식별화 과정

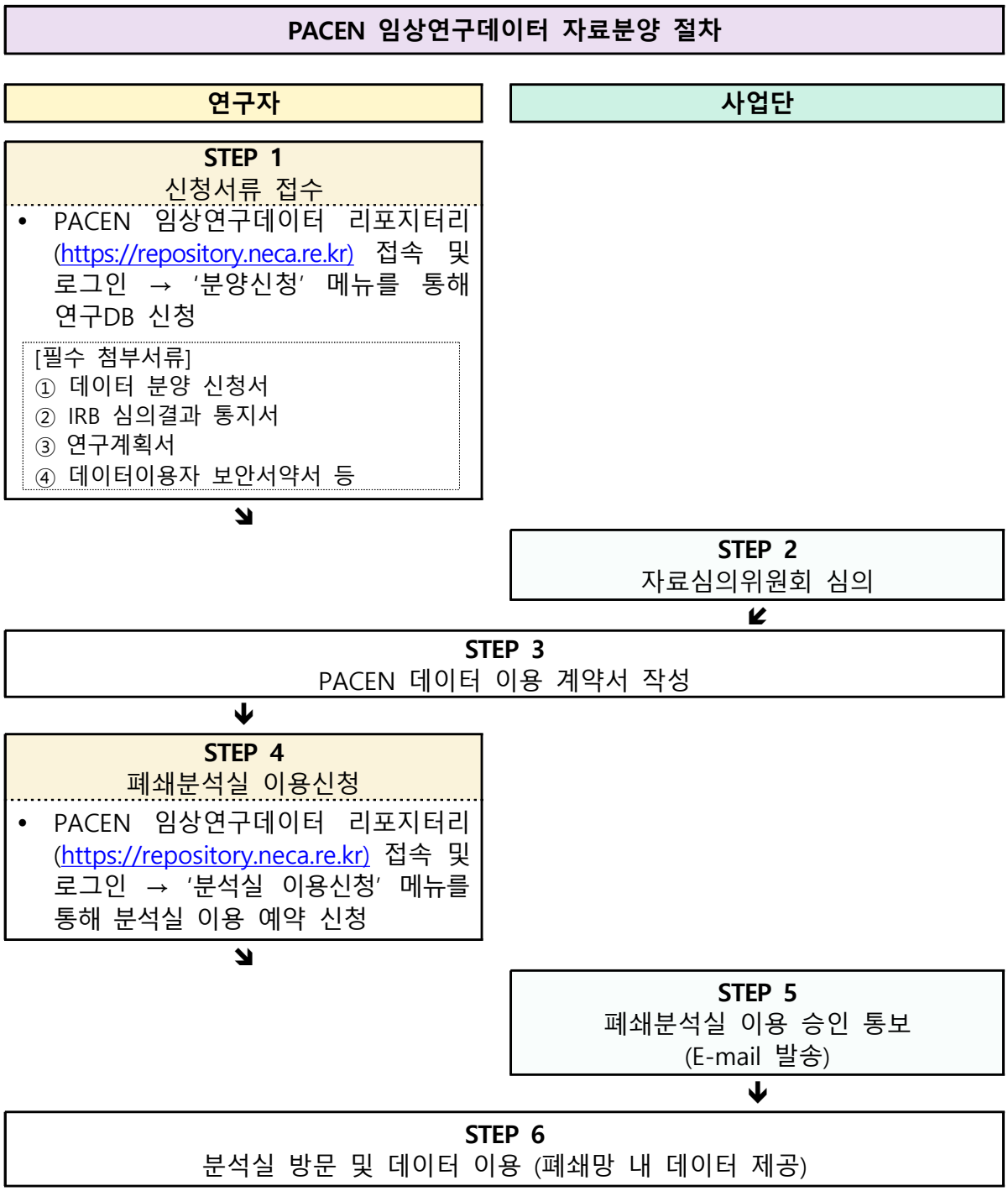
PACEN 임상연구데이터는 개인정보보호를 위해 '보건의료데이터 활용 가이드라인(보건복지부)'에 의거하여 데이터 유형에 따라 가명처리가 적용됩니다. 데이터 유형별 가명처리 방법의 예는 다음과 같습니다.

※ 데이터유형별 가명처리 방법 예시	
식별자	일부 또는 전부를 삭제하거나 일련번호로 대체
주요인적사항	삭제하거나 연구목적 상 유의미한 일부 정보를 발췌하는 방식으로 식별력을 충분히 낮춤
측정수치정보	별도의 조치 불필요. 단, 특이정보 포함 등 필요 시 비식별처리
자유입력데이터 (문자열)	전수 또는 키워드 검사 등을 통해 식별 위험성이 있는 정보 일부 삭제 또는 대체

3. 자료분양 절차 및 유의사항

(1) 자료분양절차

PACEN 임상연구데이터는 대학, 국·공립 및 사립병원, 또는 연구기관 등에 소속된 연구자를 대상으로 분양하고 있습니다. 본 데이터는 한국보건의료연구원 자료심의위원회의 심의를 거쳐 제공되며, 심의 후 'PACEN 데이터 이용 계약서' 제출이 필요합니다. 데이터는 한국보건의료연구원 자료분석실 분석전용 PC 내 폐쇄망을 통해 제공됩니다.



(2) 데이터 활용 시 유의사항

○ PACEN 임상연구데이터 활용 시 아래 사항을 유의하여 주시기 바랍니다.

PACEN 임상연구 데이터 활용 유의사항	
데이터 활용 명시	(국문) 본 연구는 보건복지부의 재원으로 수행된「환자중심 의료기술 최적화 연구사업」선정과제(과제고유번호: RS-2020-KH094727)의 데이터를 활용하였음 (영문) The data used in this study was originally collected from 「Patient-Centered Clinical Research Coordinating Center」 research(grant number: RS-2020-KH094727) granted by the Ministry of Health & Welfare, Republic of Korea.
양도/대여 금지	자료요청 절차에 따라 PACEN 임상연구 데이터를 받은 기관 혹은 개인이 아닌 경우, PACEN 임상연구 데이터를 사용한 연구결과를 논문이나 연구보고서 등에 게재 및 출판 금지
영리적 목적으로 사용 금지	본 데이터는 학술활동 및 정책 개발등의 비영리적인 목적으로만 이용가능(타인에게 판매 금지)
데이터 이용 승인기간 준수	이용자는 이용 승인기간 내에만 데이터 이용 가능
산출물 보고	논문 및 연구결과 발표, 정책보고서 등 작성 시 데이터 활용에 대한 명시 및 PACEN 사사표기를 포함하여야 하며, 산출물이 발생하는 경우 30일 내에 PACEN 담당자에게 사본을 이메일로 제출 (pacen2@neca.re.kr)

○ '현재 가이드라인 치료 기준에 포함되지 않는 만성 B형 간염 환자에서 테노포비르 알라페나미드 치료에 따른 장기 간질환 예후 변화를 조사하는 다기관, 공개, 무작위배정 연구' DB는 연구대상자 등록이 완료되어 추가적인 대상자 등록은 없으나 추적관찰이 진행 중입니다. 향후 추적관찰 종료 후 데이터가 추가 공개될 수 있습니다.

○ 본 데이터 활용 지침서(Ver 1.0)는 연구데이터 생산 연구자가 작성하였으며, 이후 지침서는 비정기적으로 업데이트 됩니다. 데이터 사용시 PACEN 임상연구데이터 리포지터리(https://repository.neca.re.kr)에서 최신 버전의 지침서를 확인 후 사용하시기 바랍니다.

○ 기타 데이터 및 지침서에 대한 문의사항은 pacen2@neca.re.kr 또는 한국보건의료연구원 환자중심 의료기술 최적화 연구사업단 연구개발2팀(02-2174-2833)으로 연락 주시기 바랍니다.

Ⅱ. 연구개발과제 데이터 소개

1. 연구개발과제 개요

(1) 데이터 기본 정보

연구설계		다기관, 공개, 무작위배정, 대조군 전향적 연구	
배정 방법		층화 블록 무작위 배정 (층화요인: HBeAg 양성/음성)	
PICO	**연구 대상자(P)**	정의	간경변증을 동반하지 않은 만성 B형 간염 환자
		대상자수	780명
	중 재(I)	정의	치료군(테노포비르 알라페나미드 (25mg/day)
		대상자수	390명
	비교중재(C)	정의	경과 관찰군
		대상자수	390명
	관심건강 결과(O)	**일차 결과변수** - 누적 4년간 event 발생률 (Composite endpoint: 사망, 간이식, 비대상성 간기능 [Child-Pugh score ³7] 발생, 문맥압 항진증 합병증[복수, 위식도 정맥류] 발생, 또는 간세포암 진단) **이차 결과변수:** - 간세포암, 사망, 간이식, 비대상성 간기능 발생, 문맥압 항진증 합병증, 바이러스 반응 달성, ALT 정상화 달성, HBeAg 음성 전환 사건에 대한 발생률로 정의함. composite endpoint를 제외한 누적 발생률 및 매년 발생률(composite endpoint) - Fibroscan 검사 값, APRI index 값, FIB-4 index 값에 대한 변화 양상, 치료, 치료 반응, 질병상태(간염, 간경변, 간세포암), 이환기간에 따른 건강관련 삶의 질 (EQ-5D) 값의 변화 양상으로 정의함	
임상연구 등록정보		**(CRIS)** KCT0003429 **(ClinicalTrials.gov)** NCT03753074	
프로토콜 논문		Lim YS, Yu ML, Choi J, Chen CY, Choi WM, Kang W, et al. Early antiviral treatment with tenofovir alafenamide to prevent serious clinical adverse events in adults with chronic hepatitis B and moderate or high viraemia (ATTENTION): interim results from a randomised controlled trial. Lancet Gastroenterol Hepatol. 2025;10(4):295–305. **※ protocol 논문 외 데이터 활용 관련 선행 논문은 '부록 1, 주요 선행논문 목록' 참고**	

(2) 연구개발과제 기본 정보

책임연구자(소속)	임영석 (서울아산병원, 소화기내과)
연구과제명	만성 B형간염 환자에서 항바이러스제 사용의 최적화 및 효율적이고 합리적인 급여 정책을 위한 근거 생성 : 현재 가이드라인 치료 기준에 포함되지 않는 만성 B형 간염 환자에서 테노포비르 알라페나미드 치료에 따른 장기 간질환 예후 변화를 조사하는 다기관, 공개, 무작위배정 연구(ATTENTION)
연구목적	국내에 발병률이 높은 간암의 경우 70%는 만성 B형간염으로 인해 발생하고 있으며, 여전히 국내 간암 사망률 및 발생률은 증가 추세임. 이전 간암 환자를 분석한 국내 연구에 따르면 만성 B형간염 치료 기준 밖에서 간암이 진단된 환자들의 비율이 60%를 초과하였음. 즉, 여전히 간암 발생이 줄지 않는 이유로 간수치의 상승을 중요시하는 복잡한 건강보험 급여조건 및 치료 가이드라인(기준)에 기인하는 요소가 크다고 판단함 선행 연구에 따르면 간경변증이 없는 만성 B형간염 환자 중 간수치가 정상으로 현재 치료 기준에 해당하지 않는 환자라도 HBV DNA 역가가 4-8 log10 IU/mL일 경우 간암 발생 위험도가 매우 높음을 확인함. 이런 환자들에게 항바이러스제 투여 시 간암 발생 위험도를 낮출 수 있음을 문헌고찰을 통해 확인함 따라서, 간암 발생을 좀 더 효과적으로 예방하기 위해서는 항바이러스제 치료 적응증 확대가 필요하며 이런 측면에서 현재 항바이러스제 치료기준에 해당하지 않는 환자들을 대상으로 조기 항바이러스제 투여 효과를 보고자 하였음
연구 수행방법 요약	**대상자 모집 및 군 배정:** 간경변증이 없는 만성 B형간염 환자 중 간수치가 정상으로 현재 치료 기준에 해당하지 않는 환자에서 HBV DNA 역가가 4-8 log10 IU/mL인 환자들을 22개 기관에서 등재하여 치료군과 관찰군으로 1:1 무작위배정(층화요인: HBeAg 양성/음성)함 **중재 적용 방법:** 치료군은 테노포비르 알라페나미드 25mg을 매일 1회 경구투여하며, 관찰군은 경과관찰한다. 두 군 모두 6개월 간격으로 관찰하며, 관찰군의 경우 ALT 등 치료기준에 합당하게 변화되는 경우 치료를 시작 할 수 있음 **등재 결과:** 780명 등록하여 이 중 치료군 390명, 관찰군 390명으로 무작위 배정되었음.
1차 결과변수	**정의:** 누적 4년간 event 발생률 (Composite endpoint: 사망, 간이식, 비대상성 간기능[Child-Pugh score ³7] 발생, 문맥압 항진증 합병증[복수, 위식도 정맥류] 발생, 또는 간세포암 진단) **평가방법:** 치료 효능과 안전성을 보기 위한 일차 분석은 Full analysis set을 이용하여 모든 무작위 배정 환자를 대상으로 시행함(Modified intention-to-treat analysis). 이차 분석은 분석 시점에서 연구에 참여중인 환자들만을 포함하는 on-treatment analysis로 수행함. 4년 임상시험 기간 동안 임상시험을 중단한 환자는 중단 시점 이후부터 모든 결과(endpoint)에 대해 실패(failure)로 간주함 모든 통계 분석은 SPSS(SPSS, Chicago, IL, USA)와 R (http://cran.r-project.org/)를 통해 시행되었으며, P-value가 0.05 보다 작은 경우는 통계학적으로 의의가 있는 것으로 간주함. 양군 간의 연속 변수 또는 범주형 변수들의 비교는 Student's

	t-test, Chi-square test 또는 Fisher's exact test를 적절하게 사용함. 두 군간의 누적 간세포암 및 간질환 관련 사망 및 사건 발생률은 Kaplan-Meier 방법으로 추정하며 비교는 log-rank test를 이용함. Cox proportional hazard model을 이용하여 임상 결과에 대한 두 군간의 차이에 대해 기저 변수 보정을 고려하며, 포함될 보정 변수는 연령, 성별, HBeAg 양성 여부, HBV DNA level, ALT level, 혈소판 수치 등임 중간 분석도 동일한 통계분석방법을 적용할 계획이며, 모든 무작위 배정 환자를 대상으로 시행함. 본 연구의 Primary endpoint는 간암, 사망 등 Clinical outcome임. 하지만, 그 Event 수가 매우 적을 것으로 예상되어 중간분석에서 두 군간 유의한 차이를 관찰하게 될 것으로 예상하지 않고 있음. 하지만, 중간 분석을 통해서 바이러스 반응, 간기능의 변화, 간섬유화 정도의 변화 등 Secondary endpoint로서 Surrogate marker들의 변화를 주로 관찰적으로 분석해서 장기 임상 경과를 예측하는 표지자를 개발하는 것이 목적임
2차 결과변수	**정의:** 일차평가변수인 Composite endpoint의 누적발생률을 제외하고 매년 나머지 모든 이벤트 발생률 - 누적 event 발생률 (Composite endpoint: 사망, 간이식, 비대상성 간기능 [ChildPugh score ³7] 발생, 문맥압 항진증 합병증[복수, 위식도 정맥류] 발생, 또는 간세포 암 진단) - 누적 간세포암 발생률 - 누적 사망률 - 누적 간이식 발생률 - 누적 비대상성 간기능[Child-Pugh score ³7] 발생률 - 누적 문맥압 항진증 합병증[복수, 위식도 정맥류] 발생률 - 경과관찰 군 (Treatment Arm B)에서 현 치료 가이드라인 기준을 만족하는 임상적 상황으로 변화되는 비율 - 바이러스 반응 (HBV <15 IU/mL) 달성률 - ALT 정상화 달성률 - HBeAg 음성 전환률 (초기 검사에서 HBeAg-양성 환자만 대상) - Fibroscan 검사 변화 - APRI index 변화 - FIB-4 index 변화 - 치료, 치료반응, 치료기간, 건강상태(간염, 간경변, 간세포암)에 따른 건강관련 삶의 질 변화 - HBeAg-양성 환자 혹은 HBeAg 음성 환자만을 대상으로 하위 그룹 분석 • 누적 간세포암 발생률 • 누적 사망률 • 누적 간이식 발생률•누적 비대상성 간기능[Child-Pugh score ³7] 발생률 • 누적 문맥압 항진증 합병증[복수, 위식도 정맥류] 발생률 - ALT 정상 환자 혹은 ALT 상승 환자만을 대상으로 하위 그룹 분석 •누적 간세포암 발생률 •누적 사망률 - 전체 등록된 환자에서 12개월이내 발생한 composite endpoint를 제외한 누적 발생률 및 매년 발생률 (composite endpoint)

	- 연구 등록 시점ALT정상 (<40 U/L) 환자에서 6개월이내 발생한 composite endpoint를 제외한 누적 발생률 및 매년 발생률 (composite endpoint) - 연구 등록 시점 ALT정상 (<40 U/L) 환자에서 12개월이내 발생한 composite endpoint를 제외한 누적 발생률 및 매년 발생률 (composite endpoint) **평가방법:** 이차 결과 변수에 대한 분석은 연구에 참여중인 환자들 만을 대상으로 하는 on-treatment analysis 원칙에 따라 수행함. 중간분석 또는 최종 분석 시점에서 수행되며 다중 검정에 대한 보정을 따라 하지 않음. 생존 자료에 대해서 로그 랭크 검정을 수행하고 일차 결과 변수 분석과 같이 보정요인으로 연령, 성별, HBeAg 양성 여부, HBV DNA level, ALT level, 혈소판 수치 등을 고려한 다변수 콕스 비례위험 모형을 적용함. 추가로 바이러스 반응, 간기능의 변화, 간섬유화 정도의 변화 등 이차 평가변수들의 변화도 관찰하며 이를 위해 GEE로 분석하고 추후 장기 임상 경과예측을 위한 표지자 개발을 위한 자료로 활용함. 경제성평가 수행 시 질보정수명(Quality-adjusted life year, QALY)을 산출하기 위하여 치료, 치료반응, 질병상태(간염, 간경변, 간세포암) 및 삶의 질 효용가중치(EQ-5D 및 EQ-VAS)의 차이에 대한 변화 양상을 GEE로 분석함. 연령, 성별 및 임상적 기저 변수로 보정한 결과를 추가적으로 제시함

○ 본 연구개발과제에 대한 연구계획서(protocol) 및 통계분석계획(SAP)는 임상연구데이터 분양 신청 승인 후 데이터 분양 시 제공됩니다.

2. 데이터 구조

(1) 변수 생성 구조

변수명이 부여되는 규칙은 다음과 같습니다.

VSDTC = VS + DTC
변수명 = 주요 도메인 + 변수 고유값
예) VS는 활력징후를 뜻하는 도메인명이며 검사시행일(Date/Time of Collection)을 뜻하는 변수 고유값과 결합

LBSTAT = LB + STAT
변수명 = 주요 도메인 + 변수 고유값
예) LB는 실험실적 평가를 뜻하는 도메인명이며 검사를 시행한 상태(Status) 뜻하는 변수 고유값과 결합

AETERM = AE + TERM
변수명 = 주요 도메인 + 변수 고유값
예) AE는 이상사례를 뜻하는 도메인명이며 용어(Term)를 뜻하는 변수 고유값과 결합

(2) 대상자 등록 및 추적관찰

○ 2019년 2월 첫 대상자 등록을 시작으로 2024년 5월 마지막 대상자 등록까지 총 780명의 데이터가 수집되었습니다(스크리닝 탈락 제외). VISIT 별 연구진행 내용은 다음과 같습니다.

VISIT1 (스크리닝)	선정기준에 부합한 대상자 확인 후 등록
VISIT2 (무작위배정 시행)	연구에 참여 가능한 대상자를 대상으로 무작위 배정을 시행함
VISIT3-VISIT9 (중재/추적관찰)	Visit2를 기준으로 6개월마다 총 4년간 방문함. 방문명은 기간으로 표시함 (M6, M12, M18...)
EOT (종료방문)	연구 종료시점을 기준으로 Primary endpoint 목표 도달 여부 및 증례결론 수집함. 연구 설계 자체는 4년 추적을 목표하였으나, 과제 종료 시점을 EOT로 하였음

○ 임상연구 일정표

Assessment/Procedure	V1	V2	V3	V4	V5	V6	V7	V8	V9	EOT
	Screening	Baseline	M6	M12	M18	M24	M30	M36	M42	M48
Informed consent	X									
Medical History	X									
Inclusion/Exclusion Criteria	X	X								
Physical Examination	X	X	X	X	X	X	X	X	X	X
Randomization		X								
Vital signs	X	X	X	X	X	X	X	X	X	X
EQ-5D questionnaire		X		X		X		X		X
Hematology	X	X	X	X	X	X	X	X	X	X
Chemistry	X	X	X	X	X	X	X	X	X	X
Prothrombin Time	X	X	X	X	X	X	X	X	X	X
Urinalysis	X	X	X	X	X	X	X	X	X	X
HBV DNA	X	X	X	X	X	X	X	X	X	X
HBsAg	X	X		X		X		X		X
HBsAb	X									
HBeAg/HBeAb	X	X	X	X	X	X	X	X	X	X
Alpha-fetoprotein	X	X	X	X	X	X	X	X	X	X
US or CT or MRI	X	X	X	X	X	X	X	X	X	X
Bone densitometry		X		X		X		X		X
Fibroscan		X	X	X	X	X	X	X	X	X
HbA1C		X		X		X		X		X
Serum for storage		X	X	X	X	X	X	X	X	X
Buffy coat		X								
Urine for storage		X	X	X	X	X	X	X	X	X
Dispense study drug		X	X	X	X	X	X	X	X	
Adverse Events			X	X	X	X	X	X	X	X
Compliance check			X	X	X	X	X	X	X	X
Concomitant Medications	X	X	X	X	X	X	X	X	X	X

○ 주요 수집 항목

도메인명	변수항목
Inclusion & Exclusion Criteria	생년월, 서면 동의일, 동의취득한 연구자, 2차 연구 정보 제공 동의 여부, 인구학적 정보 수집일, 나이 (만), 성별, 임신 여부 확인, 선정기준1-9, 제외기준1-14, Result of Screening, 선정/제외기준 부적합, 시험대상자 동의철회, 연구자 판단, 스크리닝 탈락사유, 기타, Comment
Medical History	질병력 미수집, 미수집 사유, 질병력 정보 수집일, 질병력 확인을 위한 기준 시점, Significant Past-Medical History, 질병명, Other disease(상세입력), 질병코드(ICD-10), 기준 시점에서 질병력의 상태, 최초 처치일, 1년 이내 치료 유무, 현재 음주상태, 음주기간, 금주기간, 주 평균 음주횟수, 1회 평균 음주량, 소주, 맥주, 와인, 막걸리, 양주, 기타, 현재 흡연상태, 흡연기간, 금연기간, 하루 흡연량, 평균 흡연량, B형간염 가족력 유무, B형간염(ICD-10), B형간염_부, B형간염_모, B형간염_(외)조부모, B형간염_형제/자매, B형간염_자녀, 간암 가족력 유무, 간암(ICD-10), 간암_부, 간암_모, 간암_(외)조부모, 간암_형제/자매, 간암_자녀, Comments: (필수기재 아님)
Randomization	Treatment Arm, Assigned date, Dispense study drug
Physical Examination, Vital Sign	Visit date, Vital sign, Blood Pressure(수축기), Blood pressure (이완기), Pulse rate, Height, Weight, Waist circumference, Physical Examination, Specific finding, Comment, Clinical events ND, Clinical events, 간암, Onset date, 사망, Onset date, 비대상성 간기능, Onset date, Ascites, Onset date, Varix, Onset date, Liver transplantation, Onset date
EQ-5D questionnaire	Not done, 이동성, 자기관리, 일상활동, 통증/불편감, 불안/우울, EQ-VAS
Laboratory Values	시행여부, Date of Test, HBV DNA, HBV DNA Titer, HBsAg, HBsAg Titer, HBsAb, HBeAg, HBeAb, anti-HCV, anti-HIV, anti-HDV, WBC ND, WBC, Hemoglobin ND, Hemoglobin, Platelet count ND, Platelet count, ANC ND, ANC, HbA1C ND, HbA1C, Ca not done, Ca, Phosphorous not done, Phosphorous, Creatinine not done, Creatinine BUN not done, BUN, Total protein not done, Total protein, Albumin not done, Albumin AST(SGOT) not done, AST(SGOT), ALT(SGPT) not done, ALT(SGPT), ALP not done, ALP, Total bilirubin not done, Total bilirubin, Direct bilirubin not done, Direct bilirubin, Na not done Na, K not done, K, e-GFR not done, eGFR, Triglyceride not done, Triglyceride, Total Cholesterol not done, Total Cholesterol, HDL not done, HDL, LDL not done, LDL, Ptt INR not done, Prothrombin time INR, Ptt Pc not done, Prothrombin

도메인명	변수항목
	time %, Child-Pugh Score not done, Ascites, Encephalopathy, Score (points), Class, AFP not done, AFP, Comment, Serum for storage, Date of sampling (Serum), Buffy coat for storage, Date of sampling (Buffy coat), Comment
Imaging Finding	Imaging Finding, Date of test, Test type, Result, Other image finding, Date of test, Median of fibrosis, ND, Median of CAP, ND
Bone densitometry	Bone densitometry (DEXA) Not Done, Date of test, Spine g/cm2, T-score (Spine), Femur Neck g/cm2, T-score (Femur neck), Femur Total g/cm2, T-score (Femur total)
Study drug compliance	Dispense study drug, Compliance NA, 복용 시작일, 복용 종료일, 복용해야 할 개수, 실제 복용한 개수, Compliance, YN, 반납한 개수
Medication	병용약물 여부, 약물명, 약물명_직접기재, 약물분류코드, Indication, 1회 투여량, 투여 단위, 투여단위_other, 약물 제형, 1일 투약횟수, 투약횟수_other, 투여시작일, 투여종료일, Ongoing, TAF treatment 여부, 표준화중재명, 성분명, 중재분류코드, 1회 중재량, 중재량 단위, 중재 제형, 1일 중재 횟수, 중재 시작일(OLD), 중재 시작일, 중재 종료일
Adverse events	Adverse Event Term, 이상반응_직접기재, Intensity, Start date, Ongoing, Stop date, Relationship, Action taken with IP, Other actions taken for the event, Outcome, Was the event serious?
Serious Adverse Events	Adverse Event Term, 이상반응_직접기재, Onset date, Ongoing, Date AE met criteria for serious AE, AE is serious due to, Date Investigator aware of serious AE, Intensity, Relationship, Relationship to liver disease, Action taken with IP, Other actions taken, Narrative: record a detailed description of the event, including the course of event, evaluation and assessment, diagnosis and treatment, Study drug name and duration of therapy, SAE outcome, SAE Resolution Date, SUSAR, Report Type, Report Date
Case Close	End of study, First dose date, First dose date NA, Protocol completed, Date of drop out, Reason for ending data collection for this subject,
PI Reveiw, Sign	PI, 확인일

3. 데이터 정제

(1) 논리적 오류 및 이상치 처리

PACEN 임상연구 데이터는 논리적 오류 및 이상치 처리를 위해 웹기반 임상연구관리시스템(iCReaT) 내 전자증례기록지(e-CRF) 구축 시 자료검증방안(Data Validation Specification, DVS)을 설정하였습니다. 1차 시스템 쿼리, 2차 매뉴얼 쿼리를 통해 자료 입력 시 오류를 최소화하고 입력된 데이터 값의 오류 확인 및 데이터 정제를 시행하였습니다.

쿼리 종류	항목
1차 오류 감지 - 시스템 쿼리(System query)	1. Data validation specification - 선행 조건 검토 - 자료 입력허용 범위 2. Event specification - 선행 조건을 만족할 경우 입력 가능한 항목 3. Calculate specification - 자동계산식 및 조건식 설정: BMI, Child-Pugh score, Smoking Pack Year
2차 오류 감지 - 매뉴얼 쿼리(Manual query)	수집된 데이터 중 입력값이 불충분하거나 명확하지 않은 부분이 있어 직접 내용 확인이 필요한 경우 매뉴얼 쿼리 발행

○ 논리적 오류 처리 및 이상치 처리 사례가 존재하는 경우: 쿼리 발행

(2) 결측치 처리

중도탈락 및 데이터 절단 시점 내 종료방문 예정이 미포함되어있는 대상자의 데이터 또는 기타 결측치는 다음과 같이 처리하였습니다. 결측치 처리에 대한 코딩값은 'III-3. 변수 설명서'에서도 확인이 가능합니다.

○ 설문항목 무응답: 공란

○ 검사 미시행

1) 항목 전체를 시행하지 않은 경우 (코딩값: 자릿수에 따라 888.8, 8888.8, 8888 또는 "미측정"에 체크)
2) 일부 항목에 대해 시행하지 않은 경우 (코딩값: 자릿수에 따라 888.8, 8888.8, 8888 또는 "미측정"에 체크)

3) 조사항목의 응답/측정 대상에 해당하지 않는 경우 (코딩값: 없음)
예1: 남성의 경우 여성력 조사 항목 입력 시
예2: 과거력 진단을 받지 않은 경우 관련 하위문항 입력 시

(3) 비식별화 자료 정제 과정

○ 가명처리 후 제공 예정

4. 표본 유지율 및 대상자 특성

(1) 추적조사 추적률

기저시점	등재	추적률 (%)							
Visit1	Visit2	Visit3	Visit4	Visit5	Visit6	Visit7	Visit8	Visit9	EOT
Screening	Randomization	M6	M12	M18	M24	M30	M36	M42	M48
845명	780명	743명 (95.2%)	724명 (92.8%)	678명 (86.9%)	611명 (78.3%)	524명 (67.1%)	433명 (55.5%)	321명 (41.1%)	168명 (21.5%)

(2) 기저시점 기준 등록 대상자 특성

※ 본 분석에 포함된 대상자는 중간 분석 시점(첫 대상자 등록 기준 추적 48개월)의 데이터로 총 734명이며, 향후 추적관찰 종료 후 데이터가 추가 공개될 수 있습니다.

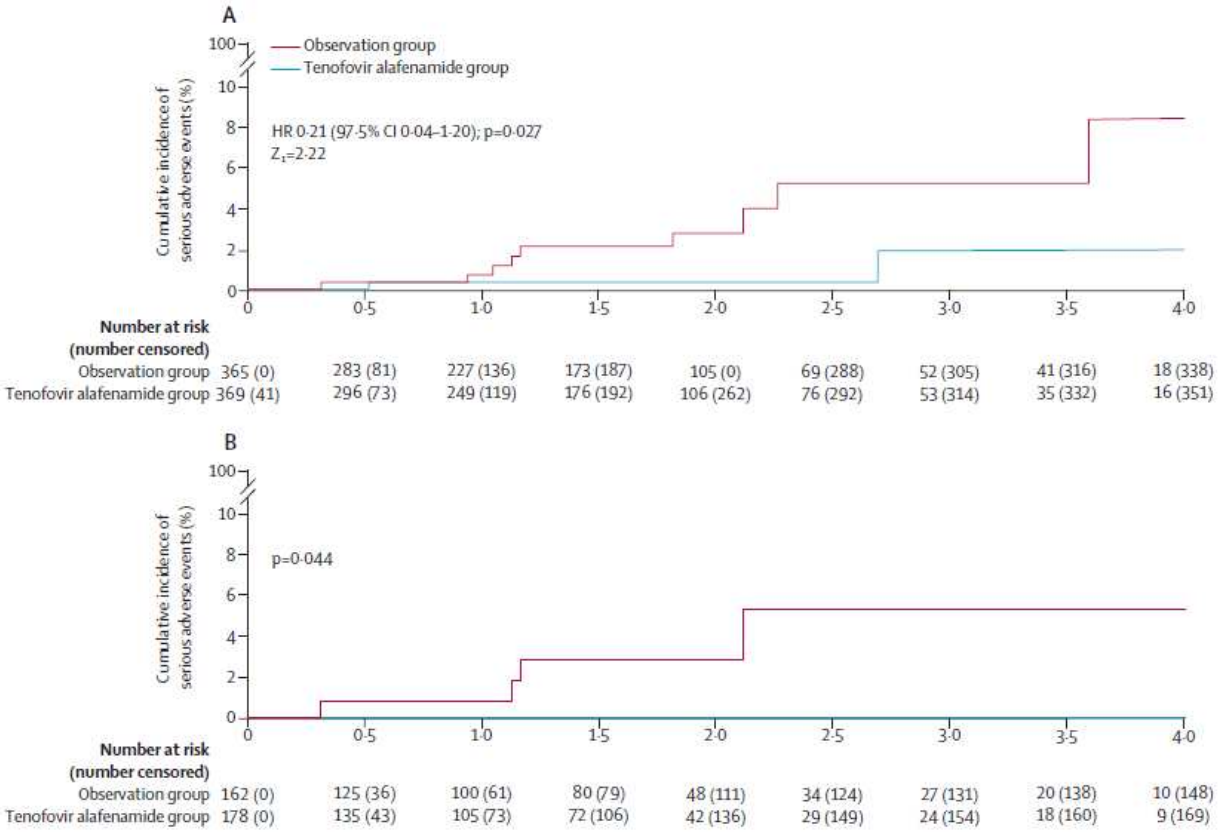
(단위: 명,%)

인구학적 정보	TAF treatment (N=369)	Best Supportive Care (N=365)	Total (N=734)
Age, years	52.0 (46.0–60.0)	54.0 (47.0–60.0)	53.0 (46.0–60.0)
Sex			
Female	200 (54.2%)	193 (52.9%)	341 (46.5%)
Male	169 (45.8%)	172 (47.1%)	393 (53.5%)
Family history of HCC			
Yes	81 (22.0%)	88 (24.1%)	169 (23.2%)
No	265 (71.8%)	255 (69.9%)	520 (71.2%)
Unknown	23 (6.2%)	22 (6.0%)	41 (5.6%)
HBV DNA, log10IU/mL	4.8 (4.3–5.4)	5.0 (4.4–5.7)	4.9 (4.3–5.5)
ALT, U/L	31 (22–40)	31 (23–40)	31 (23 – 40)
Normal ALT*	167 (45.3%)	151 (41.4%)	318 (43.3%)
Minimally elevated ALT*	202 (54.7%)	214 (58.6%)	416 (56.7%)
Platelet (x103/uL)	208.0 (177.0 – 243.0)	211.0 (178.0 – 246.0)	210.0 (178.0 – 245.0)
Liver stiffness measurement, kPa	5.5 (4.5–6.8)	5.2 (4.3–6.4)	5.4 (4.4–6.6)
Albumin, g/dL	4.4 (4.1–4.6)	4.3 (4.1–4.5)	4.4 (4.1 - 4.6)
Total bilirubin, mg/dL	0.7 (0.5–0.9)	0.7 (0.5 - 0.9)	0.7 (0.5 - 0.9)
Prothrombin time, INR	1.0 (1.0–1.0)	1.0 (1.0–1.1)	1.0 (1.0 - 1.1)
White blood cell, x1,0003/uL	5.4 (4.5–6.5)	5.4 (4.5–6.6)	5.4 (4.5 - 6.5)
Hemoglobin, g/dL	14.1 (13.3–15.0)	14.1 (13.1–15.1)	14.1 (13.2 – 15.0)

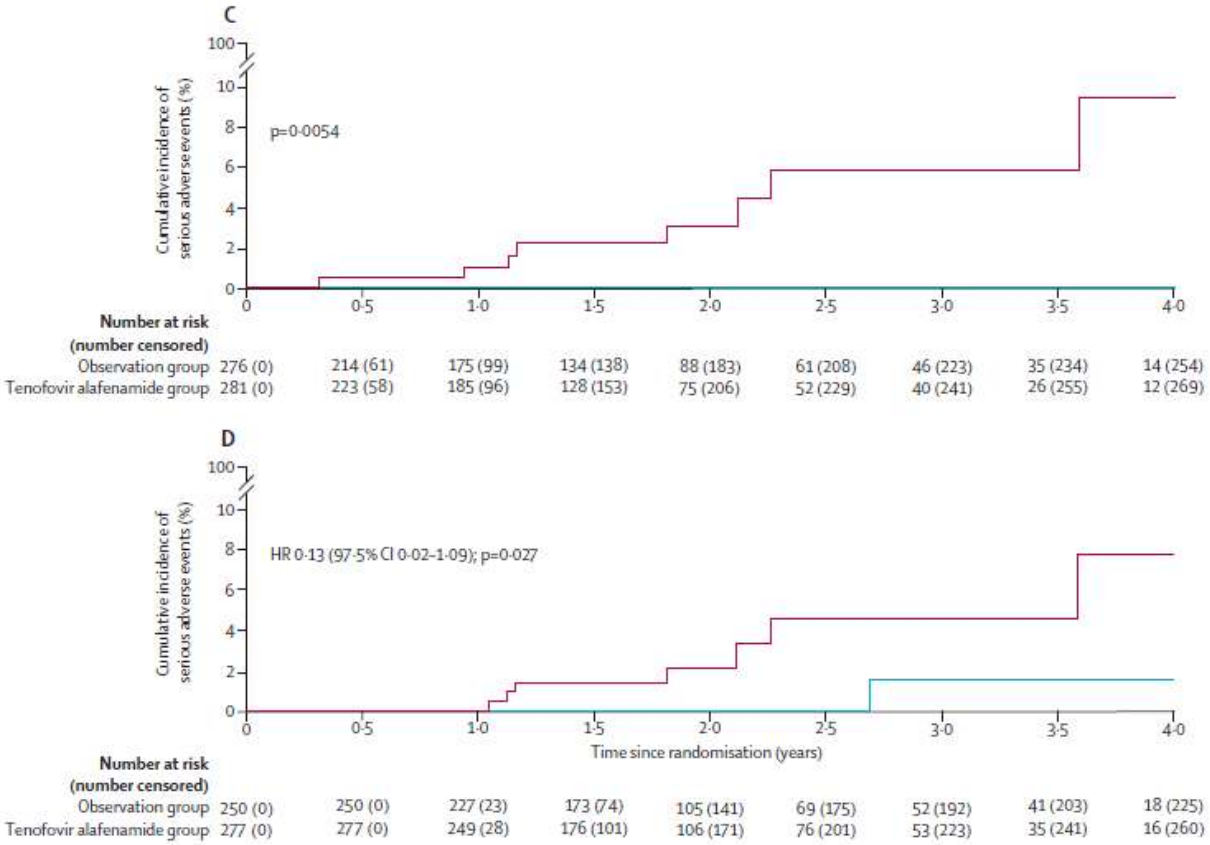
인구학적 정보	TAF treatment (N=369)	Best Supportive Care (N=365)	Total (N=734)
Creatinine, mg/dL	0.7 (0.7–0.9)	0.8 (0.7–0.9)	0.7 (0.7 - 0.9)
eGFR, mL/min	93.0 (85.0–104.0)	92.5 (84.0–102.0)	93.0 (85.0 – 104.0)
AFP (ng/mL)	2.8 (2.0 - 4.0)	2.9 (2.0 - 4.1)	2.8 (2.0 - 4.0)

5. 주요변수 통계표

- 무작위 배정 당시 시험군과 대조군의 ALT 수치 및 HBV DNA 수치의 상태는 차이가 없었으며, 이는 무작위 배정이 고르게 잘 되었음을 의미합니다.(표2).
- 그림 (A) 추적 48개월 시점, 대조군의 Primary endpoint events 누적 발생률이 시험군 보다 훨씬 높게 나타납니다.
- 그림 (B) ALT 수치가 정상 범위였던 하위 그룹 참가자들만을 대상으로 한 분석이며, 역시 대조군의 Primary endpoint events 누적 발생률이 시험군 보다 현저히 높습니다.



- 그림 (C) 특정 가이드라인 기준(≤40U/L)을 충족하는 정상 ALT 농도를 가진 참가자들 대상으로 한 또 다른 하위 그룹 분석이며 역시 대조군의 Primary endpoint 누적 발생률이 현저히 높습니다. 이는 엄격한 기준을 적용한 정상 ALT 환자군에서도 TAF의 유익성이 뚜렷함을 나타냅니다.
- 그림 (D) 연구 시작 후 첫 1년 이내에 발생한 이벤트를 분석에서 제외하고 진행한 민감도 분석 결과이며 첫 1년에는 Primary endpoint 발생률 증가가 나타나지 않으며, 이후에 발생하기 시작합니다. 여전히 대조군의 누적 발생률이 시험군 보다 높습니다.



Ⅲ. 변수 설명서

1. 변수 상세 설명

※ 도메인별 공통 변수: 연구대상자 ID(SUBJNO), Visit 명(VISITNM), 방문일(VISITDT)

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
Inclusion & Exclusion Criteria	공통변수	SUBJNO	연구대상자 ID	TOO-□□□ OO : 기관코드 □□□ : 대상자부여번호		
		VISITNM	Visit 명	Screening Baseline On-Treatment (M6) On-Treatment (M12) On-Treatment (M18) On-Treatment (M24) On-Treatment (M30) On-Treatment (M36) On-Treatment (M42) EOT (M48) UV Medication AE-SAE Case Close		
		VISITDT	방문일			
	1	DMBRTHDTC	Date of Birth		Date	
	2	ICFDTC	Date of ICF signed		Date	
	3	DMINV	Investigator who obtained consent form	45=[T1_1] Young-Suk Lim|46=[T1_2] Ju Hyun Shim|47=[T1_3] Danbi Lee|48=[T1_4] Han Chu Lee|49=[T1_6] JONGGI CHOI|50=[T1_7] Kang Mo Kim|51=[T1_8] HA IL KIM|52=[T1_9] Won-Mook Choi|53=[T1_10] Dong Sub Jeon|54=[T2_1] Gwak Geum-Youn|55=[T2_2] Yong Han Paik|56=[T2_3] Dong Hyun Sinn|57=[T2_4] Wonseok Kang|58=[T2_5] Seung Woon Paik|59=[T2_6] Myung Ji Goh|60=[T3_1] Jae-Jun Shim|61=[T3_2] Chi Hyuk	Integer	

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
				Oh|62=[T3_3] Seok Ho, Dong|63=[T3_5] Gi Ae Kim|64=[T3_6] Yewan Park|65=[T4_1] Hyung Joon Kim|66=[T4_2] Young Youn Cho|67=[T5_1] Jeong-Hoon Lee|68=[T5_2] Su Jong Yu|69=[T5_3] JUNG-HWAN YOON|70=[T5_4] Yun Bin Lee|71=[T5_5] Joon Yeul Nam|72=[T5_6] Eun Ju Cho|73=[T5_7] Min Kyung Park|74=[T6_1] Neung Hwa Park|75=[T6_2] Jung Woo Shin|76=[T7_1] So Young Kwon|77=[T7_2] Jeong Han Kim|78=[T7_3] Won Hyeok Choe|79=[T7_4] Byung Chul Yoo|80=[T8_1] Soo Young Park|81=[T8_2] Yu Rim Lee|82=[T8_3] Won Young Tak|83=[T8_4] Se Young Jang|84=[T9_1] Ji Hoon Kim|85=[T9_2] Kwan Soo Byun|86=[T9_3] Young-Sun Lee|87=[T9_4] Yoon Seok Lee|88=[T9_5] Jong Eun Yeon|89=[T11_1] Gwang Hyeon Choi|90=[T11_2] Sook-Hyang Jeong|91=[T11_3] Jihye Kim|92=[TW01_1] Ming-Lung Yu|93=[TW01_2] Chia-Yen Dai|94=[TW01_3] Jee-Fu Huang|95=[TW01_4] Ming-Yen Hsieh|96=[TW01_5] Chung-Feng Huang|97=[TW01_6] Chun-I Huang|98=[TW01_7] Po-Cheng Liang|99=[TW01_8] Cheng-Ting Hsu|100=[TW01_9] Po-Yao Hsu|101=[TW01_10] Ming-Lun Yeh|102=[TW01_11] Wan-Long Chuang|103=[TW02_1] Chien-Hung Chen|104=[TW02_2]		

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
				Sheng-Nan Lu|105=[TW02_3] Jing-Houng Wang|106=[TW02_4] Chao-Hung Hung|107=[TW02_5] Kwong-Ming Kee|108=[TW02_6] Kuo-Chin Chang|109=[TW02_7] Yuan-Hung Kuo|110=[TW02_8] Yi-Hao Yen|111=[TW02_9] Ming-Chao Tsai|112=[TW03_1] Yao-Chun Hsu|113=[TW03_2] Chi-Ming Tai|114=[TW03_3] Cheng-Hao Tseng|115=[TW03_4] Gin-Ho Lo|116=[TW03_5] Tzu-Haw Chen|117=[TW03_6] Chao-Ming Tseng|118=[TW03_7] Ying-Nan Tsai|119=[TW04_1] Ming-Jong Bair|120=[TW05_1] Pin-Nan Cheng|121=[TW05_2] Yen-Cheng Chiu|122=[TW05_3] Hung-Chih Chiu|123=[TW05_4] Shih-Chieh Chien|124=[TW05_5] Jui-Wen Kang|125=[TW05_6] Er-Hsiang Yang|126=[TW06_1] Hung-Da Tung|127=[TW06_2] Chih-Chou Chen|128=[TW06_3] Pei-Lun Lee|129=[TW07_1] Te-Sheng Chang|130=[TW07_2] Shui-Yi Tung|131=[TW07_3] Chien Heng Shen|132=[TW07_4] Kuo-Liang Wei|133=[TW07_5] Huang-Wei Xu|134=[TW07_6] Yi-hsing Chen|135=[TW07_7] Wei-Ming Chen|136=[TW07_8] Chih-Wei Yen|137=[TW07_9] Kao-Chi Chang|138=[TW07_10] Sheng-Nan Lu|139=[TW07_11] Chao-Hung Hung|140=[TW07_12] Chun-Hsien Chen|141=[TW08_1] Chi-Yi Chen|142=[TW08_2] Po-Yueh		

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
				Chen|143=[TW08_3] Ming-Tse Hsu|144=[TW08_4] Tsung-Jang Tsau|145=[TW09_1] Ching-Chu Lo|146=[TW09_2] Jow-Jyh Hwang|147=[TW09_3] Chien-Hung Lin|148=[TW09_4] Hsu-Sheng Cheng|149=[TW09_5] Yi-Tang Liao|150=[TW09_6] Po-Yen Hsiao|151=[TW10_1] Kuo-Chih Tseng|152=[TW10_2] Chih-Wei Tseng|153=[TW10_3] Yen-Chun Chen|154=[TW10_4] Ping-Hung Ko|155=[TW11_1] Sheng-Shun Yang|156=[TW11_2] Teng-Yu Lee|157=[TW11_3] Shao-Wu Lee|158=[TW11_4] Chung-Hsin Chang|159=[TW11_5] Yi-Jie Huang|160=[TW11_6] I-Ta Lu|161=[TW12_1] Cheng-Yuan Peng|162=[TW12_2] Hsueh-Chou Lai|163=[TW12_3] Wei-Fan Hsu|164=[TW12_4] Hung-Wei Wang		
	4	DMAGE	Age		Integer	3
	5	DMSEX	Sex at birth	1=Male 2=Female	Integer	
	6	DMPGOCCUR	Is female subject of childbearing potential?	1=Yes 2=No 3=NA (Hysterectomy, post-menopausal, etc.)	Integer	
	7	ICF2YN	Consent on the Provision of Personal Information to Third Parties	1=Yes 2=No	Integer	
	8	IEIN01	1) Willing and able to provide written informed consent prior to study entry.	1=Yes 2=No	Integer	
	9	IEIN02	2) Age ≥40 years and ≤80 years at the time of screening.	1=Yes 2=No	Integer	
	10	IEIN03	3) Chronic hepatitis B infection defined as HBsAg (+) or HBV	1=Yes 2=No	Integer	

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
			DNA (+) for at least 6 months prior to the Screening visit, or the subject is not regarded to have acute hepatitis B according to the clinical assessment of the investigator.			
	11	IEIN04	4) Either HBeAg (+) or HBeAg (-)	1=Yes 2=No	Integer	
	12	IEIN05	5) Subject must be documented as non-cirrhotic (Platelet ≥ 100,000/ mm3)	1=Yes 2=No	Integer	
	13	IEIN06	6) Serum HBV DNA levels ≥1.0 x 10^4 IU/mL and <1.0 x 10^8 IU/mL	1=Yes 2=No	Integer	
	14	IEIN07	7) Serum ALT levels<70 IU/L (males) or <50 IU/L (females)	1=Yes 2=No	Integer	
	15	IEIN08	8) Estimated creatinine clearance ≥ 30 ml/min	1=Yes 2=No	Integer	
	16	IEIN09	9) Ability to comply with all study requirements	1=Yes 2=No	Integer	
	17	IEEX01	1) Confirmed known co-infection with HCV, HIV, or HDV	1=Yes 2=No	Integer	
	18	IEEX02	2) Current alcohol (60g/day) or substance abuse judged by the investigator that will potentially interfere with subject compliance	1=Yes 2=No	Integer	
	19	IEEX03	3) History or current evidence of clinically hepatic decompensation (e.g., ascites, encephalopathy, variceal hemorrhage) 1 year prior to Screening, or a	1=Yes 2=No	Integer	

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
			Child-Pugh grade 7 at the time of Screening.			
	20	IEEX04	4-1) Evidence of liver cirrhosis defined as meeting any of the following criteria:	1=Yes 2=No	Integer	
	21	IEEX04A	REASON	1=a) Platelet count <100,000/mm³	Integer	
	22	IEEX04B	REASON	1=b) Clinically significant portal hypertension	Integer	
	23	IEEX04C	REASON	1=c) Presence of esophageal or gastric varices by endoscopy in 2 years before the time of screening	Integer	
	24	IEEX04D	REASON	1=d) Fibroscan ≥ 12.0 kPa (If the test was done in 3 months before the time of screening.)	Integer	
	25	IEEX04_2	4-2) 40≤ALT levels<70 IU/L (males) or 40≤ ALT levels<50 IU/L (females) with evidence of significant fibrosis(F2; ≥7.2 kPa) as measured by either liver biopsy, Fibroscan or MR Elastograpy performed within 3 months.	1=Yes 2=No	Integer	
	26	IEEX05	5) Currently on or have received therapy with Interferon or immunosuppressant (including systemic chemotherapy) within 12 months prior to the screening	1=Yes 2=No	Integer	
	27	IEEX06	6) Requirement for chronic use of systemic immunosuppressant including, but not limited to, corticosteroid (prednisone equivalent of >40 mg/day for >2 weeks),	1=Yes 2=No	Integer	

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
			azathioprine, or monoclonal antibodies			
	28	IEEX07	7) Received solid organ or bone marrow transplant	1=Yes 2=No	Integer	
	29	IEEX08	8) History of severe, life-threatening or other significant sensitivity to any excipients of the study drugs	1=Yes 2=No	Integer	
	30	IEEX09	9) Any other clinical conditions (cardiovascular, respiratory, neurologic, or renal conditions) or prior therapy that, in the opinion of the investigator, would make the subject unsuitable for the study or unable to comply with dosing requirements.	1=Yes 2=No	Integer	
	31	IEEX10	10) Currently on or have received antiviral treatment for ≥ 2 weeks within 6 months prior to the screening	1=Yes 2=No	Integer	
	32	IEEX11	11) History or current evidence of hepatocellular carcinoma (HCC), or high α-fetoprotein (AFP) > 20 ng/mL. (Patients with AFP>20ng/mL can be enrolled, however if imaging investigations, such as dynamic CT or MRI, provide no evidence of HCC within 4 months	1=Yes 2=No	Integer	

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
	33	IEEX12	12) Malignancy other than hepatocellular carcinoma within the 5 years prior to screening, with the exception of specific cancers that are cured by surgical resection (within 2 years prior to screening with confirmation of no evidence of disease). Subjects under evaluation for possible malignancy are not eligible	1=Yes 2=No	Integer	
	34	IEEX13	13) Concurrent enrollment in another clinical study for other type of antiviral treatment for CHB or immune modulatory drug within 3 months prior to randomization, Participation to an observational (non-interventional) clinical studies or interventional studies not using anti-HBV or immune modulatory drugs, or during the follow-up period of an interventional study are not exclusion criteria.	1=Yes 2=No	Integer	
	35	IEEX14	14) Pregnant women, women who are breastfeeding or who believe they may wish to become pregnant during the course of the study	1=Yes 2=No	Integer	
	36	IERSSTAT	Result of Screening	1=Screen Pass|2=Screen Failure (Not randomized after	Integer	

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
				obtained consent form)		
	37	IERSREAS1	Did not meet inclusion/exclusion criteria	1=Did not meet inclusion/exclusion criteria	Integer	
	38	IERSREAS2	Subject withdrew consent	1=Subject withdrew consent	Integer	
	39	IERSREAS3	Investigator Decision	1=Investigator Decision	Integer	
	40	IERSREAS4	Others	1=others	Integer	
	41	IERSCOM	Comment		String	
Medical History	공통변수	SUBJNO	연구대상자 ID	TOO-□□□ OO : 기관코드 □□□ : 대상자부여번호		
		VISITNM	Visit 명	Screening Baseline On-Treatment (M6) On-Treatment (M12) On-Treatment (M18) On-Treatment (M24) On-Treatment (M30) On-Treatment (M36) On-Treatment (M42) EOT (M48) UV Medication AE-SAE Case Close		
		VISITDT	방문일			
	42	MHSIG	No Significant Past-Medical History	1=No Significant Past-Medical History	Integer	
	43	MHSTAT	Medical history not collected	1=Yes	Integer	
	44	MHREASND	Reason for not collecting medical history	1=Patient refusal 2=Unknown 3=Other	Integer	
	45	MHREASNDCOM	Reason for not collecting medical history (If other, please specify)		String	
	46	MHDTC	Date of collection		Date	
	47	MHENRF	Screening date for Medical history		Date	
	48	MHYN1	Hypertension	1=Yes 2=No	Integer	
	49	MHDECOD1	Hypertension International classification of	1=I10	Integer	

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
			disease (ICD-10)			
	50	MHSTDTC1	Hypertension Start year		Integer	4
	51	MHENRTPT1	Hypertension Status of Diagnosis at Screening	1=Before 2=After 3=Coincident 4=Ongoing 5=Unknown	Integer	
	52	MHSTTRTDTC1	Hypertension Date of First treatment		Date	
	53	MHTRT1	Hypertension Treatment within 1 year	1=No 2=Yes 3=Unknown	Integer	
	54	MHCOM1	Hypertension Comment		String	
	55	MHYN2	Diabetes Mellitus	1=Yes 2=No	Integer	
	56	MHDECOD2	Diabetes International classification of disease (ICD-10)	1=E11	Integer	
	57	MHSTTRTDTC2	DM Start year		Integer	4
	58	MHENRTPT2	Diabetes Status of Diagnosis at Screening	1=Before 2=After 3=Coincident 4=Ongoing 5=Unknown	Integer	
	59	MHSTTRTDTC27	Diabetes Date of First treatment		Date	
	60	MHTRT2	Diabetes Treatment within 1 year	1=No 2=Yes 3=Unknown	Integer	
	61	MHCOM2	DM Comment		String	
	62	MHYN3	Cancer	1=Yes 2=No	Integer	
	63	MHDECOD3	Cancer International classification of disease (ICD-10)	1=C18 Malignant neoplasm of colon 2=C22 Malignant neoplasm of liver and intrahepatic bile ducts 3=C34 Malignant neoplasm of bronchus and lung 4=C50 Malignant neoplasm of breast 5=C16 Malignant neoplasm of stomach 6=C73 Malignant neoplasm of	Integer	

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
				thyroid gland 7=C25 Malignant neoplasm of pancreas 8=C61 Malignant neoplasm of prostate		
	64	MHSTTRTDTC3	Cancer Start year		Integer	8
	65	MHENRTPT3	Cancer Status of Diagnosis at Screening	1=Before 2=After 3=Coincident 4=Ongoing 5=Unknown	Integer	
	66	MHSTTRTDTC37	Cancer Date of First treatment		Date	
	67	MHTRT3	Cancer Treatment within 1 year	1=No 2=Yes 3=Unknown	Integer	
	68	MHCOM3	Cancer Comment		String	
	69	MHOSTAT	Other Disease YN	1=No Other Disease	Integer	
	70	MHOTERM	Other Disease Name		String	
	71	MHODECOD	DssI International classification of disease (ICD-10)		String	
	72	MHOSTDTC	Other Disease Start year		Integer	8
	73	MHOENRTPT	Dss Status of Diagnosis at Screening	1=Before 2=After 3=Coincident 4=Ongoing 5=Unknown	Integer	
	74	MHOSTTRTDTC	Dss Date of First treatment		Date	
	75	MHOTRT	Dss Treatment within 1 year	1=No 2=Yes 3=Unknown	Integer	
	76	MHOCOM	Comment		String	
	77	DMDRKSTAT	Drinking History	1=Unknown	Integer	
	78	DMDRK	Drinking Type	0=Never drinker - less than 1 bottle a year 1=Ex- drinker - stop > 1 year 2=Current drinker - current or ex-drinker (stop < 1 year)	Integer	
	79	DMDRKDUR	Drinking Period		Float	3.2
	80	DMDRKFRQ	Frequency Drinking		Float	3.2
	81	DMDRKDAYAMT	Amount/Day (per time)		Float	3.2

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
	82	DMDRKAMT	Glass per time		Float	3.2
	83	DMDRKCAT	Type of alcohol	1=Soju 2=Beer 3=Liquor 4=Local liquor (막걸리or 高粱酒) 5=Wine	Integer	
	84	DMSMKSTAT	Smoking History	1=Unknown	Integer	
	85	DMSMK	Smoking Type	0=Never smoker - less than 100 cigarettes all life 1=Ex- smoker - stop > 1 year 2=Current smoker - current or ex-smoker (stop < 1 year)	Integer	
	86	DMSMKAMT	Amount/day(cigarettes)		Float	3.2
	87	DMSMKDUR	Smoking Period(years)		Float	3.2
	88	DMNSMKDUR	Smoking Cessation Periodyear(s)		Integer	3
	89	DMNSMKDUR1	Smoking quit month(months)		Integer	3
	90	DMSMKPY	Pack Year(PY)		Float	3.2
	91	MHFHSTAT1	Hepatitis B	1=Yes 2=No 3=Unknown	Integer	
	92	MHFHDECOD1	Hepatitis B(ICD-10 code)	1=B18.1	Integer	
	93	MHFHAP1A	Applicable family	1=Father	Integer	
	94	MHFHAP1B	Applicable family	1=Mother	Integer	
	95	MHFHAP1C	Applicable family	1=Grandparents	Integer	
	96	MHFHAP1D	Applicable family	1=Siblings	Integer	
	97	MHFHAP1E	Applicable family	1=Children	Integer	
	98	MHFHSTAT2	hepatocellular carcinoma	1=Yes 2=No 3=Unknown	Integer	
	99	MHFHDECOD2	Liver cancer(ICD-10)	1=C22.0	Integer	
	100	MHFHAP2A	Applicable family	1=Father	Integer	
	101	MHFHAP2B	Applicable family	1=Mother	Integer	
	102	MHFHAP2C	Applicable family	1=Grandparents	Integer	
	103	MHFHAP2D	Applicable family	1=Siblings	Integer	
	104	MHFHAP2E	Applicable family	1=Children	Integer	
Randomization	**공통변수**	SUBJNO	연구대상자 ID	TOO-□□□ OO : 기관코드 □□□ : 대상자부여번호		
		VISITNM	Visit 명	Screening		

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
				Baseline On-Treatment (M6) On-Treatment (M12) On-Treatment (M18) On-Treatment (M24) On-Treatment (M30) On-Treatment (M36) On-Treatment (M42) EOT (M48) UV Medication AE-SAE Case Close		
		VISITDT	방문일			
	105	RNIEYN	Did this subject meet the all inclusion/exclusion criteria?	1=Yes|2=No	Integer	
	106	RNHBEAGYN	Is the subject confirmed with HBeAg positive or negative?	1=Yes 2=No (If no, please correct the Laboratory data at Screening visit.)	Integer	
	107	RNARM	Treatment Arm	1=TAF (25mg/day) treatment|2=Best supportive care	Integer	
	108	RNDTC	Assigned date		Date	
	109	RNEXSTAT	Dispense study drug	1=Done 2=Not done	Integer	
	110	RNCOM	Comment		String	
Physical Examination, Vital Sign	**공통변수**	SUBJNO	연구대상자 ID	TOO-□□□ OO : 기관코드 □□□ : 대상자부여번호		
		VISITNM	Visit 명	Screening Baseline On-Treatment (M6) On-Treatment (M12) On-Treatment (M18) On-Treatment (M24) On-Treatment (M30) On-Treatment (M36) On-Treatment (M42) EOT (M48) UV Medication AE-SAE		

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
				Case Close		
		VISITDT	방문일			
	111	VSOCCUR	Replaced with the vital signs were checked within 28 days prior to the baseline	1=Replaced with the vital signs were checked within 28 days prior to the baseline	Integer	
	112	VSDTC	Visit Date		Date	
	113	VSSTAT	Vital sign	1=Not Done	Integer	
	114	VSSYSBP	Systolic BP(mmHg)		Integer	3
	115	VSDIABP	Diastolic BP(mmHg)		Float	3.1
	116	VSPULSE	Pulse rate(bpm)		Float	3.1
	117	VSHEIGHT	Height(cm (1 decimal))		Float	3.1
	118	VSHEIGHTSTAT	Height Not done	1=Not Done	Integer	
	119	VSWEIGHT	Weight(kg (1 decimal))		Float	3.1
	120	VSWEIGHTSTAT	Weight Not done	1=Not Done	Integer	
	121	VSWAIST	Waist circumference(cm)		Float	3.2
	122	VSWAISTSTAT	Waist Not done	1=Not Done	Integer	
	123	PESTAT	Physical Examination	1=Not Done	Integer	
	124	PEYN	Specific finding	1=Normal 2=Abnormal	Integer	
	125	PECOM	SympComment		String	
	126	CESTAT	Events	1=Not Done	Integer	
	127	CEOCCUR	Clinical event	1=Not occurred 2=Occurred	Integer	
	128	CEHEP	Hepatocellular Carcinoma	1=Yes 2=No	Integer	
	129	CEHEPDTC	Hepatocellular Carcinoma Onset date		Date	
	130	CEDEA	Death	1=Yes 2=No	Integer	
	131	CEDEADTC	Death Onset date		Date	
	132	CELIVD	Liver decompensation	1=Yes 2=No	Integer	
	133	CELIVDDTC	Liver decompensation Onset date		Date	
	134	CEASC	Ascites	1=Yes 2=No	Integer	
	135	CEASCDTC	Ascites Onset date		Date	
	136	CEVAR	Varix	1=Yes 2=No	Integer	
	137	CEVARDTC	Varix Onset date		Date	

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
	138	CELIVT	Liver transplantation	1=Yes 2=No	Integer	
	139	CELIVTDTC	Liver transplantation Onset date		Date	
EQ-5D questionnaire	공통변수	SUBJNO	연구대상자 ID	TOO-□□□ OO : 기관코드 □□□ : 대상자부여번호		
		VISITNM	Visit 명	Screening Baseline On-Treatment (M6) On-Treatment (M12) On-Treatment (M18) On-Treatment (M24) On-Treatment (M30) On-Treatment (M36) On-Treatment (M42) EOT (M48) UV Medication AE-SAE Case Close		
		VISITDT	방문일			
	140	QSND	Not Done	1=Not Done	Integer	
	141	QSYN1	Mobility	1=I have no problems in walking 2=I have slight problems in walking 3=I have moderate problems in walking 4=I have severe problems in walking 5=I am unable to walk	Integer	
	142	QSYN2	Self-Care	1=I have no problems washing or dressing myself 2=I have slight problems washing or dressing myself 3=I have moderate problems washing or dressing myself 4=I have severe problems washing or dressing myself 5=I am unable to wash or dress myself	Integer	
	143	QSYN3	Usual Activities	1=I have no problems doing my usual activities 2=I have slight problems	Integer	

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
				doing my usual activities 3=I have moderate problems doing my usual activities 4=I have severe problems doing my usual activities 5=I am unable to do my usual activities		
	144	QSYN4	Pain / Discomfort	1=I have no pain or discomfort 2=I have slight pain or discomfort 3=I have moderate pain or discomfort 4=I have severe pain or discomfort 5=I have extreme pain or discomfort	Integer	
	145	QSYN5	Anxiety / Depression	1=I am not anxious or depressed 2=I am slightly anxious or depressed 3=I am moderately anxious or depressed 4=I am severely anxious or depressed 5=I am extremely anxious or depressed	Integer	
	146	QSEQVAS	EQ-VAS(점)		Float	3.1
Laboratory Values	**공통변수**	SUBJNO	연구대상자 ID	TOO-□□□ OO : 기관코드 □□□ : 대상자부여번호		
		VISITNM	Visit 명	Screening Baseline On-Treatment (M6) On-Treatment (M12) On-Treatment (M18) On-Treatment (M24) On-Treatment (M30) On-Treatment (M36) On-Treatment (M42) EOT (M48) UV Medication AE-SAE Case Close		
		VISITDT	방문일			

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
	147	LBSTAT	Laboratory test	1=Not Done	Integer	
	148	LBDTC	Date of Tests		Date	
	149	LBROCCUR	Can be replaced with the test result within 2 months prior to the baseline	1=Replaced with the laboratory result within 2 months prior to the baseline	Integer	
	150	LBHBVDNASTAT	HBV DNA not done	1=Not Done	Integer	
	151	LBHBVDNA	HBV DNA	1=Positive 2=Negative(<15IU/mL)	Integer	
	152	LBHBVDNATITER1	HBV DNA Titer(x10^)		Float	4.4
	153	LBHBVDNATITER2	HBV DNA Titer Unit(IU/mL)		Float	4.4
	154	LBHBSAGSTAT	HBsAg not done	1=Not Done	Integer	
	155	LBHBSAG	HBsAg	1=Positive 2=Negative	Integer	
	156	LBHBSAGTITER	HBsAg Titer(IU/mL)		Float	9.4
	157	LBHBSABSTAT	HBsAb not done	1=Not Done	Integer	
	158	LBHBSAB	HBsAb	1=Positive 2=Negative	Integer	
	159	LBHBEAGSTAT	HBeAg not done	1=Not Done	Integer	
	160	LBHBEAG	HBeAg	1=Positive 2=Negative	Integer	
	161	LBHBEABSTAT	HBeAb not done	1=Not Done	Integer	
	162	LBHBEAB	HBeAb	1=Positive 2=Negative	Integer	
	163	LBHCVSTAT	AntiHCV not done	1=Not Done	Integer	
	164	LBHCV	Anti-HCV	1=Positive 2=Negative	Integer	
	165	LBHCVDTC	AntiHCV Date		Date	
	166	LBHIVSTAT	AntiHIV not done	1=Not Done	Integer	
	167	LBHIV	Anti-HIV	1=Positive 2=Negative	Integer	
	168	LBHIVDTC	AntiHIV Date		Date	
	169	LBHDVSTAT	AntiHDV not done	1=Not Done	Integer	
	170	LBHDV	Anti-HDV	1=Positive 2=Negative	Integer	
	171	LBHDVDTC	AntiHDV Date		Date	
	172	LBWBCSTAT	WBC not done	1=Not Done	Integer	

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
	173	LBWBC	WBC(x10³/uL (1 decimal))		Float	4.4
	174	LBHBSTAT	Hb not done	1=Not Done	Integer	
	175	LBHB	Hemoglobin(g/dL (1 decimal))		Float	4.4
	176	LBPLTSTAT	Platelet not done	1=Not Done	Integer	
	177	LBPLT	Platelet(x10³/uL)		Float	4.4
	178	LBANCSTAT	ANC not done	1=Not Done	Integer	
	179	LBANC	ANC(/uL)		Float	5.5
	180	LBHBASTAT	HbA1C not done	1=Not Done	Integer	
	181	LBHBA	HbA1C		Float	4.4
	182	LBHBAUNIT	HbA1C Unit	1=% 2=mmol/mol	Integer	
	183	LBCASTAT	Ca not done	1=Not Done	Integer	
	184	LBCA	Ca(mg/dL (1 decimal))		Float	4.4
	185	LBPHOSSTAT	Phosphorous not done	1=Not Done	Integer	
	186	LBPHOS	Phosphorous(mg/dL (1 decimal))		Float	4.4
	187	LBCRTSTAT	Creatinine not done	1=Not Done	Integer	
	188	LBCRT	Creatinine(mg/dL (1 decimal))		Float	4.4
	189	LBBUNSTAT	BUN not done	1=Not Done	Integer	
	190	LBBUN	BUN(mg/dL(integer only))		Float	4.4
	191	LBTOTPSTAT	Total protein not done	1=Not Done	Integer	
	192	LBTOTP	Total protein(g/dL (1 decimal))		Float	4.4
	193	LBALBSTAT	Albumin not done	1=Not Done	Integer	
	194	LBALB	Albumin(g/dL (1 decimal))		Float	4.4
	195	LBASTSTAT	AST(SGOT) not done	1=Not Done	Integer	
	196	LBAST	AST(SGOT)(IU/L(integer only))		Float	4.4
	197	LBALTSTAT	ALT(SGPT) not done	1=Not Done	Integer	
	198	LBALT	ALT(SGPT)(IU/L(integer only))		Float	4.4
	199	LBALPSTAT	ALP not done	1=Not Done	Integer	
	200	LBALP	ALP(IU/L(integer only))		Float	4.4
	201	LBTBILISTAT	Total bilirubin not done	1=Not Done	Integer	
	202	LBTBILI	Total bilirubin(mg/dL (1 decimal))		Float	4.4
	203	LBDBILISTAT	Direct bilirubin not done	1=Not Done	Integer	
	204	LBDBILI	Direct bilirubin(mg/dL		Float	4.4

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
			(1 decimal))			
	205	LBNASTAT	Na not done	1=Not Done	Integer	
	206	LBNA	Na(mmol/L(integer only))		Float	4.4
	207	LBKSTAT	K not done	1=Not Done	Integer	
	208	LBK	K(mmol/L (1 decimal))		Float	4.4
	209	LBEGFRSTAT	e-GFR not done	1=Not Done	Integer	
	210	LBEGFR	eGFR(mL/min(integer only))		Float	6.4
	211	LBTGSTAT	Triglyceride not done	1=Not Done	Integer	
	212	LBTG	Triglyceride(mg/dL(integer only))		Float	4.4
	213	LBTCHOLSTAT	Total Cholesterol not done	1=Not Done	Integer	
	214	LBTCHOL	Total Cholesterol(mg/dL(integer only))		Float	4.4
	215	LBHDSTAT	HDL not done	1=Not Done	Integer	
	216	LBHDL	HDL(mg/dL(integer only))		Float	4.4
	217	LBLDLSTAT	LDL not done	1=Not Done	Integer	
	218	LBLDL	LDL(mg/dL(integer only))		Float	4.4
	219	LBPTISTAT	Ptt INR not done	1=Not Done	Integer	
	220	LBPTI	Prothrombin time INR		Float	4.4
	221	LBPTPSTAT	Ptt Pc not done	1=Not Done	Integer	
	222	LBPTP	Prothrombin time %		Float	4.4
	223	LBCPSSTAT	Child-Pugh Score not done	1=Not Done	Integer	
	224	LBASCITES	Ascites	1=None 2=Easily controlled 3=Poorly controlled	Integer	
	225	LBENC	Encephalopathy	1=Grade 0 2=Grade I~II 3=Grade III~IV	Integer	
	226	LBSCORE	Score (points)		String	
	227	LBCLASS	Class		String	
	228	LBAFPSTAT	AFP not done	1=Not Done	Integer	
	229	LBAFP	AFP (ng/mL(1decimal))		String	
	230	LBCOM	Comment		String	
	231	LBSFSSTAT	Serum for storage	1=Not Done	Integer	
	232	LBSFSDTC	Date of sampling (Serum)		Date	
	233	LBBCFSSTAT	Buffy coat for storage	1=Not Done	Integer	

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
	234	LBBCFSDTC	Date of sampling (Buffy coat)		Date	
	235	LBBSCOM	Comment		String	
Imaging Finding	공통변수	SUBJNO	연구대상자 ID	TOO-□□□ OO : 기관코드 □□□ : 대상자부여번호		
		VISITNM	Visit 명	Screening Baseline On-Treatment (M6) On-Treatment (M12) On-Treatment (M18) On-Treatment (M24) On-Treatment (M30) On-Treatment (M36) On-Treatment (M42) EOT (M48) UV Medication AE-SAE Case Close		
		VISITDT	방문일			
	236	IFSTAT	ND	1=Not Done	Integer	
	237	IFDTC	Date of test		Date	
	238	IFRESTAT	Replaced with the image result within 4months prior to the baseline	1=Replaced with the image result within 4months prior to the baseline	Integer	
	239	IFUSG	Test type	1=USG	Integer	
	240	IFCT	Test type	1=CT	Integer	
	241	IFMRI	Test type	1=MRI	Integer	
	242	IFRES	Result	1=Normal 2=Chronic liver disease 3=Liver cirrhosis 4=Suspicious of Liver cancer 5=Other	Integer	
	243	IFRESOTH	Other image finding		String	
	244	IFFIBSTAT	Fibroscan not done	1=Not Done	Integer	
	245	IFFIBDTC	Fibroscan Date of test		Date	
	246	IFFIB	Median of fibrosis(kPa)		Float	4.4
	247	IFCAP	Median of CAP(dB/m)		Float	4.4
Bone densitometry	공통변수	SUBJNO	연구대상자 ID	TOO-□□□ OO : 기관코드 □□□ : 대상자부여번호		
		VISITNM	Visit 명	Screening Baseline		

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길 이
				On-Treatment (M6) On-Treatment (M12) On-Treatment (M18) On-Treatment (M24) On-Treatment (M30) On-Treatment (M36) On-Treatment (M42) EOT (M48) UV Medication AE-SAE Case Close		
		VISITDT	방문일			
	248	BDSTAT	Bone densitometry (DEXA) Not Done	1=Not Done	Integer	
	249	BDDTC	Date of test		Date	
	250	BDSPI	Spine (g/cm²)		Float	-4.5
	251	BDSPISCO	T-score (Spine)		String	
	252	BDNEC	Femur Neck (g/cm²)		Float	-4.5
	253	BDNECSCO	T-score (Femur neck)		String	
	254	BDTOT	Femur Total (g/cm²)		Float	-4.5
	255	BDTOTSCO	T-score (Femur total)		String	
Study drug compliance	**공통변수**	SUBJNO	연구대상자 ID	TOO-□□□ OO : 기관코드 □□□ : 대상자부여번호		
		VISITNM	Visit 명	Screening Baseline On-Treatment (M6) On-Treatment (M12) On-Treatment (M18) On-Treatment (M24) On-Treatment (M30) On-Treatment (M36) On-Treatment (M42) EOT (M48) UV Medication AE-SAE Case Close		
		VISITDT	방문일			
	256	EXSTAT	Dispense study drug	1=Done 2=Not done	Integer	
	257	EXNA	NA	1=NA	Integer	
	258	EXSTDTC	Start Date		Date	
	259	EXENDTC	End date		Date	
	260	EXPLAN	The actual amount of		String	

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
			drug to take(Tabs)			
	261	EXDOSE	The amount of drug taken(Tabs)		String	
	262	EXCOMP	Compliance(%)		String	
	263	SDCOM2	Comment		String	
	264	SDREYN	Drug returned	1=Y 2=N 3=NA	Integer	
	265	SDRETABS	Number of tablets returned(Tabs)		Float	4.4
Medication	공통변수	SUBJNO	연구대상자 ID	TOO-□□□ OO : 기관코드 □□□ : 대상자부여번호		
		VISITNM	Visit 명	Screening Baseline On-Treatment (M6) On-Treatment (M12) On-Treatment (M18) On-Treatment (M24) On-Treatment (M30) On-Treatment (M36) On-Treatment (M42) EOT (M48) UV Medication AE-SAE Case Close		
		VISITDT	방문일			
	266	CMSTAT	Concomitant Medication	1=None	Integer	
	267	CMPRDNAMDR	(direct input) Medication name		String	
	268	CMPRDGENAM	Medication name(Generic name)		String	
	269	CMCLASCD	ATC code		String	
	270	CMDOSE	Once dose		String	
	271	CMDOSU	Unit	1=Amp 2=vial 3=cap 4=oint 5=drop 6=ml 7=mg 8=g 9=Tab 10=mcg	Integer	

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
				11=Other		
	272	CMDOSU_1	unit other		String	
	273	CMDOSFRM	formulation	1=TABLET 2=CAPSULE 3=TROCHE 4=PILL 5=GRANULE 6=POWDER 7=SYRUP 8=EXTRACT 9=ELIXIR 10=LIQUID AND SOLUTION 21=INJECTION 31=TRANSDERMAL SYSTEMS 32=PLASTER 33=CARAPLASMA 34=PASTE 35=OINTMENT 36=CREAM 37=GEL 41=OPHTHAMIC 42=SUPPOSITORY 43=SPRAY 44=AEROSOL 45=INHALANT 51=INSERT 52=DIAGNOTIC 81=위생용 섬유, 고무, 지면류 99=기타	Integer	
	274	CMDAYFRQ	Number of doses	1=Qd 2=bid 3=tid 4=qid 5=prn 6=other	Integer	
	275	CMDAYFRQ_1	Number of doses (other)		String	
	276	CMSTDTC	Start Date (YYYY-MM-DD)		Date	
	277	CMENDTC	End date (YYYY-MM-DD)		Date	
	278	CMINDC	Indication		String	
	279	CMONGO	Ongoing	1=Ongoing	Integer	
	공	SUBJNO	연구대상자 ID	TOO-□□□		

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
Adverse Event and Serious Adverse Event(AE-SAE)				OO : 기관코드 □□□ : 대상자부여번호		
	통변수	VISITNM	Visit 명	Screening Baseline On-Treatment (M6) On-Treatment (M12) On-Treatment (M18) On-Treatment (M24) On-Treatment (M30) On-Treatment (M36) On-Treatment (M42) EOT (M48) UV Medication AE-SAE Case Close		
		VISITDT	방문일			
	280	AETERM	CTCAE Medra Name		String	
	281	AECODE	CTCAE Medra Code		String	
	282	AETERMDR	adverse event term(direct input)		String	
	283	AESEV	Intensity	1=Mild 2=Moderate 3=Severe 4=Life-threatening	Integer	
	284	AESTDTC	Start date		Date	
	285	AEONGO	Ongoing	1=Ongoing	Integer	
	286	AEENDTC	Stop date		Date	
	287	AEREL	Relationship	1=Definitely 2=Probable 3=Possibly 4=Unlikely 5=Unrelated 6=Unknown	Integer	
	288	AEACN	Action taken with IP	1=None 2=Temporary stop 3=Dose Omitted 4=Dose Reduction 5=Dose Escalation 6=Discontinuation	Integer	
	289	AETRT	Other actions taken for the event	1=None 2=Treatment Given 3=Withdraw from study	Integer	
	290	AEOUT	Outcome	1=Recovered/resolved without sequelae	Integer	

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
				2=Recovered/resolved with sequelae 3=AE ongoing 4=Disability 5=Death 6=Unassessible/unclassifiable		
	291	AESER	Was the event serious?	1=Yes 2=No	Integer	
	292	AESAEDTC	Date AE met criteria for serious AE		Date	
	293	AESAEINVDTC	Date Investigator aware of serious AE		Date	
	294	AESAEDUE	AE is serious due to	1=Result in Death 2=Life Threatening Event 3=Hospitalization 4=Prolongation of Existing Hospitalization 5=Resulted in Disability or Incapacity 6=Congenital Abnormality or Birth Defect 7=Is a Medically Important Event	Integer	
	295	AESAECOM	Narrative: record a detailed description of the event, including the course of event, evaluation and assessment, diagnosis and treatment		String	
	296	AESAEOUT	SAE outcome	1=Recovered / Resolved 2=Recovered / Resolved with sequelae 3=Recovering / Resolving 4=Not recovered / Not resolved 5=Fatal 6=Unknown	Integer	
	297	AESAEREDTC	SAE Resolution Date		Date	
	298	AESAESUSAR	SUSAR	1=Yes 2=No	Integer	
	299	AESAEREPORTTYPE	Report Type	1=Initial 2=Follow up 3=Final 4=Initial & Final	Integer	
	300	AESAEREPO	Report Date		Date	

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
		RTDTC				
Case Close	공통변수	SUBJNO	연구대상자 ID	TOO-□□□ OO : 기관코드 □□□ : 대상자부여번호		
		VISITNM	Visit 명	Screening Baseline On-Treatment (M6) On-Treatment (M12) On-Treatment (M18) On-Treatment (M24) On-Treatment (M30) On-Treatment (M36) On-Treatment (M42) EOT (M48) UV Medication AE-SAE Case Close		
		VISITDT	방문일			
	301	DSENDTC	End of study		Date	
	302	DSDOSEDTC	First dose date		Date	
	303	DSNA	First dose date NA	1=NA	Integer	
	304	DSCOMPL	Protocol completed	1=Yes 2=No	Integer	
	305	DSDROPDTC	Date of drop out		Date	
	306	DSDROP	Reason for ending data collection for this subject	1=Not followed by physician 2=Lost to Follow-up 3=Patient Decision (subject withdrew consent, etc.) 4=Any serious events regardless of this study 5=Adverse Event 6=Subject refused due to Adverse Event 7=Death 8=Other	Integer	
	307	DSLASTDTC	Not followed by physician (Date subject last contact)		Date	
	308	DSDROPAE	Adverse Event (if AE, specify)		String	
	309	DSDROPSRAE	Subject refused due to Adverse Event (if AE, specify)		String	
	310	DSDROPOTH	Other (if other, specify)		String	

도메인명	변수 번호	변수명	변수설명(단위)	코딩내용	변수 유형	길이
	311	DSFU	Event Follow Up	1=Yes 2=No 3=NA	Integer	
	312	DSCOCCUR	Occurrence of cancer	1=Yes 2=No	Integer	
	313	DSCDTC	Occurrence of cancer Date		Date	
	314	DSDEATH	Death	1=Yes 2=No	Integer	
	315	DSDEATHDTC	Death Date		Date	
	316	DSCOM	Comment		String	
PI Review, Sign	공통변수	SUBJNO	연구대상자 ID	TOO-□□□ OO : 기관코드 □□□ : 대상자부여번호		
		VISITNM	Visit 명	Screening Baseline On-Treatment (M6) On-Treatment (M12) On-Treatment (M18) On-Treatment (M24) On-Treatment (M30) On-Treatment (M36) On-Treatment (M42) EOT (M48) UV Medication AE-SAE Case Close		
		VISITDT	방문일			
	317	SNNAME	PI		String	
	318	SNDTC	Review Date		Date	

2. 변수 목록

※ 변수에 대한 코딩 정보는 변수번호를 통해 '1. 변수 상세 설명'에서 확인하실 수 있습니다.

변수 번호	변수명	변수설명
공통변수	SUBJNO	연구대상자 ID
	VISITNM	Visit 명
	VISITDT	방문일
1	DMBRTHDTC	Date of Birth
2	ICFDTC	Date of ICF signed
3	DMINV	Investigator who obtained consent form
4	DMAGE	Age
5	DMSEX	Sex at birth
6	DMPGOCCUR	Is female subject of childbearing potential?
7	ICF2YN	Consent on the Provision of Personal Information to Third Parties
8	IEIN01	1) Willing and able to provide written informed consent prior to study entry.
9	IEIN02	2) Age ≥40 years and ≤80 years at the time of screening.
10	IEIN03	3) Chronic hepatitis B infection defined as HBsAg (+) or HBV DNA (+) for at least 6 months prior to the Screening visit, or the subject is not regarded to have acute hepatitis B according to the clinical assessment of the investigator.
11	IEIN04	4) Either HBeAg (+) or HBeAg (-)
12	IEIN05	5) Subject must be documented as non-cirrhotic (Platelet ≥ 100,000/ mm3)
13	IEIN06	6) Serum HBV DNA levels ≥1.0 x 10^4 IU/mL and <1.0 x 10^8 IU/mL
14	IEIN07	7) Serum ALT levels<70 IU/L (males) or <50 IU/L (females)
15	IEIN08	8) Estimated creatinine clearance ≥ 30 ml/min
16	IEIN09	9) Ability to comply with all study requirements
17	IEEX01	1) Confirmed known co-infection with HCV, HIV, or HDV
18	IEEX02	2) Current alcohol (60g/day) or substance abuse judged by the investigator that will potentially interfere with subject compliance
19	IEEX03	3) History or current evidence of clinically hepatic decompensation (e.g., ascites, encephalopathy, variceal hemorrhage) 1 year prior to Screening, or a Child-Pugh grade 7 at the time of Screening.
20	IEEX04	4-1) Evidence of liver cirrhosis defined as meeting any of the following criteria:
21	IEEX04A	REASON
22	IEEX04B	REASON
23	IEEX04C	REASON
24	IEEX04D	REASON
25	IEEX04_2	4-2) 40≤ALT levels<70 IU/L (males) or 40≤ ALT levels<50 IU/L (females) with evidence of significant fibrosis(F2; ≥7.2 kPa) as measured by either liver biopsy, Fibroscan or MR Elastograpy performed within 3 months.
26	IEEX05	5) Currently on or have received therapy with Interferon or

		immunosuppressant (including systemic chemotherapy) within 12 months prior to the screening
27	IEEX06	6) Requirement for chronic use of systemic immunosuppressant including, but not limited to, corticosteroid (prednisone equivalent of >40 mg/day for >2 weeks), azathioprine, or monoclonal antibodies
28	IEEX07	7) Received solid organ or bone marrow transplant
29	IEEX08	8) History of severe, life-threatening or other significant sensitivity to any excipients of the study drugs
30	IEEX09	9) Any other clinical conditions (cardiovascular, respiratory, neurologic, or renal conditions) or prior therapy that, in the opinion of the investigator, would make the subject unsuitable for the study or unable to comply with dosing requirements.
31	IEEX10	10) Currently on or have received antiviral treatment for ≥ 2 weeks within 6 months prior to the screening
32	IEEX11	11) History or current evidence of hepatocellular carcinoma (HCC), or high α-fetoprotein (AFP) > 20 ng/mL. (Patients with AFP>20ng/mL can be enrolled, however if imaging investigations, such as dynamic CT or MRI, provide no evidence of HCC within 4 months
33	IEEX12	12) Malignancy other than hepatocellular carcinoma within the 5 years prior to screening, with the exception of specific cancers that are cured by surgical resection (within 2 years prior to screening with confirmation of no evidence of disease). Subjects under evaluation for possible malignancy are not eligible
34	IEEX13	13) Concurrent enrollment in another clinical study for other type of antiviral treatment for CHB or immune modulatory drug within 3 months prior to randomization, Participation to an observational (non-interventional) clinical studies or interventional studies not using anti-HBV or immune modulatory drugs, or during the follow-up period of an interventional study are not exclusion criteria.
35	IEEX14	14) Pregnant women, women who are breastfeeding or who believe they may wish to become pregnant during the course of the study
36	IERSSTAT	Result of Screening
37	IERSREAS1	Did not meet inclusion/exclusion criteria
38	IERSREAS2	Subject withdrew consent
39	IERSREAS3	Investigator Decision
40	IERSREAS4	Others
41	IERSCOM	Comment
42	MHSIG	No Significant Past-Medical History
43	MHSTAT	Medical history not collected
44	MHREASND	Reason for not collecting medical history
45	MHREASNDCOM	Reason for not collecting medical history (If other, please specify)
46	MHDTC	Date of collection
47	MHENRF	Screening date for Medical history
48	MHYN1	Hypertension
49	MHDECOD1	Hypertension International classification of disease (ICD-10)
50	MHSTDTC1	Hypertension Start year
51	MHENRTPT1	Hypertension Status of Diagnosis at Screening
52	MHSTTRTDTC1	Hypertension Date of First treatment

53	MHTRT1	Hypertension Treatment within 1 year
54	MHCOM1	Hypertension Comment
55	MHYN2	Diabetes Mellitus
56	MHDECOD2	Diabetes International classification of disease (ICD-10)
57	MHSTTRTDTC2	DM Start year
58	MHENRTPT2	Diabetes Status of Diagnosis at Screening
59	MHSTTRTDTC27	Diabetes Date of First treatment
60	MHTRT2	Diabetes Treatment within 1 year
61	MHCOM2	DM Comment
62	MHYN3	Cancer
63	MHDECOD3	Cancer International classification of disease (ICD-10)
64	MHSTTRTDTC3	Cancer Start year
65	MHENRTPT3	Cancer Status of Diagnosis at Screening
66	MHSTTRTDTC37	Cancer Date of First treatment
67	MHTRT3	Cancer Treatment within 1 year
68	MHCOM3	Cancer Comment
69	MHOSTAT	Other Disease YN
70	MHOTERM	Other Disease Name
71	MHODECOD	DssI International classification of disease (ICD-10)
72	MHOSTDTC	Other Disease Start year
73	MHOENRTPT	Dss Status of Diagnosis at Screening
74	MHOSTTRTDTC	Dss Date of First treatment
75	MHOTRT	Dss Treatment within 1 year
76	MHOCOM	Comment
77	DMDRKSTAT	Drinking History
78	DMDRK	Drinking Type
79	DMDRKDUR	Drinking Period
80	DMDRKFRQ	Frequency Drinking
81	DMDRKDAYAMT	Amount/Day (per time)
82	DMDRKAMT	Glass per time
83	DMDRKCAT	Type of alcohol
84	DMSMKSTAT	Smoking History
85	DMSMK	Smoking Type
86	DMSMKAMT	Amount/day
87	DMSMKDUR	Smoking Period
88	DMNSMKDUR	Smoking Cessation Period
89	DMNSMKDUR1	Smoking quit month
90	DMSMKPY	Pack Year
91	MHFHSTAT1	Hepatitis B
92	MHFHDECOD1	Hepatitis B(ICD-10 code)
93	MHFHAP1A	Applicable family
94	MHFHAP1B	Applicable family
95	MHFHAP1C	Applicable family
96	MHFHAP1D	Applicable family

97	MHFHAP1E	Applicable family
98	MHFHSTAT2	hepatocellular carcinoma
99	MHFHDECOD2	Liver cancer(ICD-10)
100	MHFHAP2A	Applicable family
101	MHFHAP2B	Applicable family
102	MHFHAP2C	Applicable family
103	MHFHAP2D	Applicable family
104	MHFHAP2E	Applicable family
105	RNIEYN	Did this subject meet the all inclusion/exclusion criteria?
106	RNHBEAGYN	Is the subject confirmed with HBeAg positive or negative?
107	RNARM	Treatment Arm
108	RNDTC	Assigned date
109	RNEXSTAT	Dispense study drug
110	RNCOM	Comment
111	VSOCCUR	Replaced with the vital signs were checked within 28 days prior to the baseline
112	VSDTC	Visit Date
113	VSSTAT	Vital sign
114	VSSYSBP	Systolic BP
115	VSDIABP	Diastolic BP
116	VSPULSE	Pulse rate
117	VSHEIGHT	Height
118	VSHEIGHTSTAT	Height Not done
119	VSWEIGHT	Weight
120	VSWEIGHTSTAT	Weight Not done
121	VSWAIST	Waist circumference
122	VSWAISTSTAT	Waist Not done
123	PESTAT	Physical Examination
124	PEYN	Specific finding
125	PECOM	SympComment
126	CESTAT	Events
127	CEOCCUR	Clinical event
128	CEHEP	Hepatocellular Carcinoma
129	CEHEPDTC	Hepatocellular Carcinoma Onset date
130	CEDEA	Death
131	CEDEADTC	Death Onset date
132	CELIVD	Liver decompensation
133	CELIVDDTC	Liver decompensation Onset date
134	CEASC	Ascites
135	CEASCDTC	Ascites Onset date
136	CEVAR	Varix
137	CEVARDTC	Varix Onset date
138	CELIVT	Liver transplantation
139	CELIVTDTC	Liver transplantation Onset date
140	QSND	Not Done

141	QSYN1	Mobility
142	QSYN2	Self-Care
143	QSYN3	Usual Activities
144	QSYN4	Pain / Discomfort
145	QSYN5	Anxiety / Depression
146	QSEQVAS	EQ-VAS
147	LBSTAT	Laboratory test
148	LBDTC	Date of Tests
149	LBROCCUR	Can be replaced with the test result within 2 months prior to the baseline
150	LBHBVDNASTAT	HBV DNA not done
151	LBHBVDNA	HBV DNA
152	LBHBVDNATITER1	HBV DNA Titer
153	LBHBVDNATITER2	HBV DNA Titer Unit
154	LBHBSAGSTAT	HBsAg not done
155	LBHBSAG	HBsAg
156	LBHBSAGTITER	HBsAg Titer (optional)
157	LBHBSABSTAT	HBsAb not done
158	LBHBSAB	HBsAb
159	LBHBEAGSTAT	HBeAg not done
160	LBHBEAG	HBeAg
161	LBHBEABSTAT	HBeAb not done
162	LBHBEAB	HBeAb
163	LBHCVSTAT	AntiHCV not done
164	LBHCV	Anti-HCV
165	LBHCVDTC	AntiHCV Date
166	LBHIVSTAT	AntiHIV not done
167	LBHIV	Anti-HIV
168	LBHIVDTC	AntiHIV Date
169	LBHDVSTAT	AntiHDV not done
170	LBHDV	Anti-HDV
171	LBHDVDTC	AntiHDV Date
172	LBWBCSTAT	WBC not done
173	LBWBC	WBC
174	LBHBSTAT	Hb not done
175	LBHB	Hemoglobin
176	LBPLTSTAT	Platelet not done
177	LBPLT	Platelet
178	LBANCSTAT	ANC not done
179	LBANC	ANC
180	LBHBASTAT	HbA1C not done
181	LBHBA	HbA1C
182	LBHBAUNIT	HbA1C Unit
183	LBCASTAT	Ca not done
184	LBCA	Ca

185	LBPHOSSTAT	Phosphorous not done
186	LBPHOS	Phosphorous
187	LBCRTSTAT	Creatinine not done
188	LBCRT	Creatinine
189	LBBUNSTAT	BUN not done
190	LBBUN	BUN
191	LBTOTPSTAT	Total protein not done
192	LBTOTP	Total protein
193	LBALBSTAT	Albumin not done
194	LBALB	Albumin
195	LBASTSTAT	AST(SGOT) not done
196	LBAST	AST(SGOT)
197	LBALTSTAT	ALT(SGPT) not done
198	LBALT	ALT(SGPT)
199	LBALPSTAT	ALP not done
200	LBALP	ALP
201	LBTBILISTAT	Total bilirubin not done
202	LBTBILI	Total bilirubin
203	LBDBILISTAT	Direct bilirubin not done
204	LBDBILI	Direct bilirubin
205	LBNASTAT	Na not done
206	LBNA	Na
207	LBKSTAT	K not done
208	LBK	K
209	LBEGFRSTAT	e-GFR not done
210	LBEGFR	eGFR
211	LBTGSTAT	Triglyceride not done
212	LBTG	Triglyceride
213	LBTCHOLSTAT	Total Cholesterol not done
214	LBTCHOL	Total Cholesterol
215	LBHDSTAT	HDL not done
216	LBHDL	HDL
217	LBLDLSTAT	LDL not done
218	LBLDL	LDL
219	LBPTISTAT	Ptt INR not done
220	LBPTI	Prothrombin time INR
221	LBPTPSTAT	Ptt Pc not done
222	LBPTP	Prothrombin time %
223	LBCPSSTAT	Child-Pugh Score not done
224	LBASCITES	Ascites
225	LBENC	Encephalopathy
226	LBSCORE	Score (points)
227	LBCLASS	Class
228	LBAFPSTAT	AFP not done

229	LBAFP	AFP
230	LBCOM	Comment
231	LBSFSSTAT	Serum for storage
232	LBSFSDTC	Date of sampling (Serum)
233	LBBCFSSTAT	Buffy coat for storage
234	LBBCFSDTC	Date of sampling (Buffy coat)
235	LBBSCOM	Comment
236	IFSTAT	ND
237	IFDTC	Date of test
238	IFRESTAT	Replaced with the image result within 4months prior to the baseline
239	IFUSG	Test type
240	IFCT	Test type
241	IFMRI	Test type
242	IFRES	Result
243	IFRESOTH	Other image finding
244	IFFIBSTAT	Fibroscan not done
245	IFFIBDTC	Fibroscan Date of test
246	IFFIB	Median of fibrosis
247	IFCAP	Median of CAP
248	BDSTAT	Bone densitometry (DEXA) Not Done
249	BDDTC	Date of test
250	BDSPI	Spine g/cm2
251	BDSPISCO	T-score (Spine)
252	BDNEC	Femur Neck g/cm2
253	BDNECSCO	T-score (Femur neck)
254	BDTOT	Femur Total g/cm2
255	BDTOTSCO	T-score (Femur total)
256	EXSTAT	Dispense study drug
257	EXNA	NA
258	EXSTDTC	Start Date
259	EXENDTC	End date
260	EXPLAN	The actual amount of drug to take
261	EXDOSE	The amount of drug taken
262	EXCOMP	Compliance
263	SDCOM2	Comment
264	SDREYN	Drug returned
265	SDRETABS	Number of tablets returned
266	CMSTAT	Concomitant Medication
267	CMPRDNAMDR	(direct input) Medication name
268	CMPRDGENAM	Medication name(Generic name)
269	CMCLASCD	ATC code
270	CMDOSE	Once dose
271	CMDOSU	Unit
272	CMDOSU_1	unit other

273	CMDOSFRM	formulation
274	CMDAYFRQ	Number of doses
275	CMDAYFRQ_1	Number of doses (other)
276	CMSTDTC	Start Date (YYYY-MM-DD)
277	CMENDTC	End date (YYYY-MM-DD)
278	CMINDC	Indication
279	CMONGO	Ongoing
280	AETERM	CTCAE Medra Name
281	AECODE	CTCAE Medra Code
282	AETERMDR	adverse event term(direct input)
283	AESEV	Intensity
284	AESTDTC	Start date
285	AEONGO	Ongoing
286	AEENDTC	Stop date
287	AEREL	Relationship
288	AEACN	Action taken with IP
289	AETRT	Other actions taken for the event
290	AEOUT	Outcome
291	AESER	Was the event serious?
292	AESAEDTC	Date AE met criteria for serious AE
293	AESAEINVDTC	Date Investigator aware of serious AE
294	AESAEDUE	AE is serious due to
295	AESAECOM	Narrative: record a detailed description of the event, including the course of event, evaluation and assessment, diagnosis and treatment
296	AESAEOUT	SAE outcome
297	AESAEREDTC	SAE Resolution Date
298	AESAESUSAR	SUSAR
299	AESAEREPORTTYPE	Report Type
300	AESAEREPORTDTC	Report Date
301	DSENDTC	End of study
302	DSDOSEDTC	First dose date
303	DSNA	First dose date NA
304	DSCOMPL	Protocol completed
305	DSDROPDTC	Date of drop out
306	DSDROP	Reason for ending data collection for this subject
307	DSLASTDTC	Not followed by physician (Date subject last contact)
308	DSDROPAE	Adverse Event (if AE, specify)
309	DSDROPSRAE	Subject refused due to Adverse Event (if AE, specify)
310	DSDROPOTH	Other (if other, specify)
311	DSFU	Event Follow Up
312	DSCOCCUR	Occurrence of cancer
313	DSCDTC	Occurrence of cancer Date
314	DSDEATH	Death
315	DSDEATHDTC	Death Date

316	DSCOM	Comment
317	SNNAME	PI
318	SNDTC	Review Date

Ⅳ. 부록

1. 연구대상자 선정·제외기준

선정기준		제외기준	
1	임상시험 참여 전 자발적으로 서면 동의를 제공한 자	1	다른 간염 바이러스 (C형 혹은 D형 간염 바이러스) 혹은 HIV 검사를 한 적이 있는 환자 중 동시 감염이 확인된 자
2	만 40세 이상, 80세 이하의 남녀	2	현재 알코올 남용 (60g/day)이나 불법 약물 남용 기왕력이 있는 환자
3	최소한 6개월 이전에 HBsAg 양성 또는 HBV DNA 양성이 확인된 환자. 만약 6개월 이전 검사 결과가 없다면, 스크리닝 시점에서 임상적으로 연구자의 판단에 따라 급성 간염이 아닐 경우 참여 가능하다.	3	스크리닝 전 1년 이내에 임상적으로 확실한 비대상성 간경변증의 병력이 있는 경우 (복수, 간성뇌증, 정맥류 출혈 등) 및 스크리닝 시점에서 Child-Pugh score 7점 이상인 경우.
4	HBeAg 양성 혹은 음성 환자	4	4-1) 간경변증의 증거가 있는 환자 (아래 항목 중 하나라도 해당된다면 제외) - 혈소판 수치 <100,000 mm/3 – 스크리닝 전 2년 이내 위내시경 검사 결과가 있는 자에 한하여 정맥류 존재가 확인된 경우 - 임상적으로 문맥압 항진증의 증거가 있는 경우 - Fibroscan ≥ 12.0 kPa (스크리닝 전 3개월 이내 검사 결과가 있는 자에 한하여) 이면서, 연구자가 간경변증으로 확인한 경우 4-2) 남성 40 ≤ ALT <70 IU/L, 여성 40 ≤ ALT <50 IU/L 이면서, 3개월 이내 시행한 간생검이나 Fibroscan 혹은 Magnetic Resonance Elastography에서 문맥주변부 섬유화 이상(F2 이상; ≥7.2 kPa)을 시사하는 경우
5	임상적으로 간경변증의 증거가 없는 환자 (혈소판 ≥100,000/mm3)	5	스크리닝 전 12개월 이내에 인터페론 (Interferon) 또는 면역억제제(항암화학요법제제 포함) 치료를 받은 환자
6	4.00 log10 IU/mL ≤ 혈청 HBV DNA ≤ 8.00 log10 IU/mL (10,000 IU/mL ≤ 혈청 HBV DNA ≤ 100,000,000 IU/mL)	6	전신 스테로이드 또는 면역억제제 치료를 필요로 하는 임상적 요건이 있는 경우
7	혈청 ALT 수치 <70 IU/L (남성), <50 IU/L (여성) 인 경우	7	고형성 장기 이식을 받거나 골수이식을 받은 환자

8	신기능 (estimated creatinine clearance) ≥ 30 ml/min (CrCl 확인 또는 CKD-EPI 계산식으로 사용)	8	테노포비르 알라페나미드에 과민성 있는 환자
9	임상시험 약물 요법과 다른 요청 사항을 모두 준수할 수 있는 환자	9	임상적으로 연구자의 판단에 따라 임상 시험을 수행하기 힘들 것으로 생각되는 주요한 신장, 심혈관, 호흡기 혹은 신경학적 병력이 있는 경우
		10	스크리닝 전 6개월 이내에 B형간염에 대한 항바이러스 치료를 2주일 이상 받은 적이 있는 환자
		11	간암을 진단받은 병력이 있거나, 현재 간암이 의심되는 경우, 혹은 혈청 AFP 20 ng/mL 이상인 경우 (단, AFP가 20 ng/mL 이상이더라도 스크리닝 전 4개월 이내에 시행된 CT 혹은 MRI에서 간암이 없음이 확인되면 등록 가능하다.)
		12	암을 제외한 5년 이내 다른 악성 종양 병력. 단, 임상적 질환 없음(no evidence of disease)상태로 판정되고, 최근 2년이내 이로 인한 항암 화학요법 혹은 수술적 치료를 받지 않은 경우 참여 가능하다.
		13	투여일 전 3개월 이내에 타 임상시험에 참여한 자나 현재 약제를 투여하는 다른 임상 시험에 참여 중인 경우. (단, 항 바이러스 제제 혹은 면역 억제 제 관련 임상시험이 아닐 경우 참여 가능하며, 이전 임상시험 종료 시점은 이전 임상시험용 의약품의 마지막 투여 일로 정한다.)
		14	임산부, 수유부, 또는 임신을 계획하고 있는 환자

2. 주요 선행연구 목록

번호	논문명	주저자명	서지정보
1	Tenofovir Alafenamide for Drug-Resistant Hepatitis B: A Randomized Trial for Switching From Tenofovir Disoproxil Fumarate	Kwan Soo Byun 외 9명	Clin Gastroenterol Hepatol. 2022 Feb;20(2):427-437.e5
2	Increasing on-treatment hepatocellular carcinoma risk with decreasing baseline viral load in HBeAg-positive chronic hepatitis B	Won-Mook Choi 외 4명	J Clin Invest. 2022 May 16;132(10):e154833
3	Efficacy and safety of tenofovir alafenamide versus tenofovir disoproxil fumarate in treatment-naïve chronic hepatitis B	Jihye Lim 외 7명	Liver Int. 2022 Jul;42(7):1517-1527
4	Impact of expanding hepatitis B treatment guidelines: A modelling and economic impact analysis	Young-Suk Lim 외 5명	Aliment Pharmacol Ther. 2022 Aug;56(3):519-528
5	Hepatitis B Virus Treatment and Hepatocellular Carcinoma: Controversies and Approaches to Consensus (Review article)	Soo Ki Kim 외 6명	Liver Cancer. 2022 Aug 23;11(6):497-510
6	Detecting Early Hepatocellular Carcinoma in Patients with Chronic Hepatitis B Using Longitudinal a-Fetoprotein Screening	Jonggi Choi 외 2명	Clin Gastroenterol Hepatol. 2023 Jun;21(6):1590-1597
7	Low Level of Hepatitis B Viremia Compared With Undetectable Viremia Increases the Risk of Hepatocellular Carcinoma in Patients With Untreated Compensated Cirrhosis	Jiwon Yang 외 7명	Am J Gastroenterol. 2023 Jun 1;118(6):1010-1018
8	Tenofovir Alafenamide for Multiple Drug-Resistant Chronic Hepatitis B: A 3-Year Clinical Trial (Research Letter)	Jonggi Choi 외 4명	Clin Gastroenterol Hepatol. 2023 Nov;21(12):3185-3187
9	CAMP-B score predicts the risk of hepatocellular carcinoma in patients with chronic hepatitis B after HBsAg seroclearance	Hye Won Lee 외 7명	Aliment Pharmacol Ther. 2024 May;59(10):1223-1235
10	Non-linear association of baseline viral load with ontreatment hepatocellular carcinoma risk in chronic hepatitis B	Won-Mook Choi 외 6명	Gut. 2024 Mar 7;73(4):649-658
11	Viral Load-Based Prediction of Hepatocellular Carcinoma Risk in Noncirrhotic Patients With Chronic Hepatitis B : A Multinational Study for	Gi-Ae Kim 외 16명	Ann Intern Med. 2024 Oct;177(10):1308-1318

	the Development and External Validation of a New Prognostic Model		
12	Non-linear association between liver fibrosis scores and viral load in patients with chronic hepatitis B	Gi-Ae Kim 외 3명	Clin Mol Hepatol. 2024 Oct;30(4):793-806
13	Early Antiviral Treatment with Tenofovir Alafenamide to Prevent Serious Clinical Adverse Events in Chronic Hepatitis B Patients with High Viremia : Interim Results from the ATTENTION Randomised Controlled Trial	Young-Suk Lim 외 26명	Lancet Gastroenterol Hepatol. 2025Apr;10 (4):295-305
14	Association Between Viral Replication Activity and Postoperative Recurrence of HBV-Related Hepatocellular Carcinoma	Won-Mook Choi 외 17명	Alimentary Pharmacology & Therapeutics, 2025; 61:1680–1691
15	Association between everolimus combination therapy and cancer risk after liver transplantation: A nationwide population-based quasi-cohort study	Suk-Chan Jang 외 4명	American Journal of Transplantation 25 (2025) 1285–1295
16	Cost-Effectiveness of Antiviral Therapy in Patients With High Viremic Indeterminate Phase Chronic Hepatitis B	Suk Chan Jang 외 7명	Liver International, 2025; 45:e70238

3. Annotated CRF

도메인명(eCRF 명)	Inclusion & Exclusion Criteria

Screening	Baseline	M6	M12	M18	M24	M30	M36	M42	M48 (EOT)	UV

Personal Detail

Date of Birth (DMBRTHDTC[D])

Date of ICF signed (ICFDTC[D])

Investigator who obtained consent form ::: Investigator who obtained consent form 선택 :::

(DMINV[N]=[45=[T1_1] Young-Suk Lim|46=[T1_2] Ju Hyun Shim|47=[T1_3] Danbi Lee|48=[T1_4] Han Chu Lee|49=[T1_6] JONGGI CHOI|50=[T1_7] Kang Mo Kim|51=[T1_8] HA IL KIM|52=[T1_9] Won-Mook Choi|53=[T1_10] Dong Sub Jeon|54=[T2_1] Gwak Geum-Youn|55=[T2_2] Yong Han Paik|56=[T2_3] Dong Hyun Sinn|57=[T2_4] Wonseok Kang|58=[T2_5] Seung Woon Paik|59=[T2_6] Myung Ji Goh|60=[T3_1] Jae-Jun Shim|61=[T3_2] Chi Hyuk Oh|62=[T3_3] Seok Ho, Dong|63=[T3_5] Gi Ae Kim|64=[T3_6] Yewan Park|65=[T4_1] Hyung Joon Kim|66=[T4_2] Young Youn Cho|67=[T5_1] Jeong-Hoon Lee|68=[T5_2] Su Jong Yu|69=[T5_3] JUNG-HWAN YOON|70=[T5_4] Yun Bin Lee|71=[T5_5] Joon Yeul Nam|72=[T5_6] Eun Ju Cho|73=[T5_7] Min Kyung Park|74=[T6_1] Neung Hwa Park|75=[T6_2] Jung Woo Shin|76=[T7_1] So Young Kwon|77=[T7_2] Jeong Han Kim|78=[T7_3] Won Hyeok Choe|79=[T7_4] Byung Chul Yoo|80=[T8_1] Soo Young Park|81=[T8_2] Yu Rim Lee|82=[T8_3] Won Young Tak|83=[T8_4] Se Young Jang|84=[T9_1] Ji Hoon Kim|85=[T9_2] Kwan Soo Byun|86=[T9_3] Young-Sun Lee|87=[T9_4] Yoon Seok Lee|88=[T9_5] Jong Eun Yeon|89=[T11_1] Gwang Hyeon Choi|90=[T11_2] Sook-Hyang Jeong|91=[T11_3] Jihye Kim|92=[TW01_1] Ming-Lung Yu|93=[TW01_2] Chia-Yen Dai|94=[TW01_3] Jee-Fu Huang|95=[TW01_4] Ming-Yen Hsieh|96=[TW01_5] Chung-Feng Huang|97=[TW01_6] Chun-I Huang|98=[TW01_7] Po-Cheng Liang|99=[TW01_8] Cheng-Ting Hsu|100=[TW01_9] Po-Yao Hsu|101=[TW01_10] Ming-Lun Yeh|102=[TW01_11] Wan-Long Chuang|103=[TW02_1] Chien-Hung Chen|104=[TW02_2] Sheng-Nan Lu|105=[TW02_3] Jing-Houng Wang|106=[TW02_4] Chao-Hung Hung|107=[TW02_5] Kwong-Ming Kee|108=[TW02_6] Kuo-Chin Chang|109=[TW02_7] Yuan-Hung Kuo|110=[TW02_8] Yi-Hao Yen|111=[TW02_9] Ming-Chao Tsai|112=[TW03_1] Yao-Chun Hsu|113=[TW03_2] Chi-Ming Tai|114=[TW03_3] Cheng-Hao Tseng|115=[TW03_4] Gin-Ho Lo|116=[TW03_5] Tzu-Haw Chen|117=[TW03_6] Chao-Ming Tseng|118=[TW03_7] Ying-Nan Tsai|119=[TW04_1] Ming-Jong Bair|120=[TW05_1] Pin-Nan Cheng|121=[TW05_2] Yen-Cheng Chiu|122=[TW05_3] Hung-Chih Chiu|123=[TW05_4] Shih-Chieh Chien|124=[TW05_5] Jui-Wen Kang|125=[TW05_6] Er-Hsiang Yang|126=[TW06_1] Hung-Da Tung|127=[TW06_2] Chih-Chou Chen|128=[TW06_3] Pei-Lun Lee|129=[TW07_1] Te-Sheng Chang|130=[TW07_2] Shui-Yi Tung|131=[TW07_3] Chien Heng Shen|132=[TW07_4] Kuo-Liang Wei|133=[TW07_5] Huang-Wei Xu|134=[TW07_6] Yi-hsing Chen|135=[TW07_7] Wei-Ming Chen|136=[TW07_8] Chih-Wei Yen|137=[TW07_9] Kao-Chi Chang|138=[TW07_10] Sheng-Nan Lu|139=[TW07_11] Chao-Hung Hung|140=[TW07_12] Chun-Hsien Chen|141=[TW08_1] Chi-Yi Chen|142=[TW08_2] Po-Yueh Chen|143=[TW08_3] Ming-Tse Hsu|144=[TW08_4] Tsung-Jang Tsau|145=[TW09_1] Ching-Chu Lo|146=[TW09_2] Jow-Jyh Hwang|147=[TW09_3] Chien-Hung Lin|148=[TW09_4] Hsu-Sheng Cheng|149=[TW09_5] Yi-Tang Liao|150=[TW09_6] Po-Yen Hsiao|151=[TW10_1] Kuo-Chih Tseng|152=[TW10_2] Chih-Wei Tseng|153=[TW10_3] Yen-Chun Chen|154=[TW10_4] Ping-Hung Ko|155=[TW11_1] Sheng-Shun Yang|156=[TW11_2] Teng-Yu Lee|157=[TW11_3] Shao-Wu Lee|158=[TW11_4] Chung-Hsin Chang|159=[TW11_5] Yi-Jie Huang|160=[TW11_6] I-Ta Lu|161=[TW12_1] Cheng-Yuan Peng|162=[TW12_2] Hsueh-Chou Lai|163=[TW12_3] Wei-Fan Hsu|164=[TW12_4] Hung-Wei Wang])

Age (Age at screening) (DMAGE[N3])

Sex at birth ○ Male (DMSEX[N]=1) ○ Female (DMSEX[N]=2)

Is female subject of childbearing potential?	○ Yes (DMPGOCCUR[N]=1) ○ No (DMPGOCCUR[N]=2) ○ NA (Hysterectomy, post-menopausal, etc.) (DMPGOCCUR[N]=3)
Consent on the Provision of Personal Information to Third Parties	○ Yes (ICF2YN[N]=1) ○ No (ICF2YN[N]=2)

Inclusion Criteria

1) Willing and able to provide written informed consent prior to study entry.	○ Yes (IEIN01[N]=1) ○ No (IEIN01[N]=2)
2) Age ≥40 years and ≤80 years at the time of screening.	○ Yes (IEIN02[N]=1) ○ No (IEIN02[N]=2)
3) Chronic hepatitis B infection defined as HBsAg (+) or HBV DNA (+) for at least 6 months prior to the Screening visit, or the subject is not regarded to have acute hepatitis B according to the clinical assessment of the investigator.	○ Yes (IEIN03[N]=1) ○ No (IEIN03[N]=2)
4) Either HBeAg (+) or HBeAg (-)	○ Yes (IEIN04[N]=1) ○ No (IEIN04[N]=2)
5) Subject must be documented as non-cirrhotic (Platelet ≥ 100,000/ mm3)	○ Yes (IEIN05[N]=1) ○ No (IEIN05[N]=2)
6) Serum HBV DNA levels ≥1.0 x 10^4 IU/mL and <1.0 x 10^8 IU/mL	○ Yes (IEIN06[N]=1) ○ No (IEIN06[N]=2)
7) Serum ALT levels<70 IU/L (males) or <50 IU/L (females)	○ Yes (IEIN07[N]=1) ○ No (IEIN07[N]=2)
8) Estimated creatinine clearance ≥ 30 ml/min	○ Yes (IEIN08[N]=1) ○ No (IEIN08[N]=2)
9) Ability to comply with all study requirements	○ Yes (IEIN09[N]=1) ○ No (IEIN09[N]=2)

Exclusion Criteria

1) Confirmed known co-infection with HCV, HIV, or HDV	○ Yes (IEEX01[N]=1) ○ No (IEEX01[N]=2)
2) Current alcohol (60g/day) or substance abuse judged by the investigator that will potentially interfere with subject compliance	○ Yes (IEEX02[N]=1) ○ No (IEEX02[N]=2)
3) History or current evidence of clinically hepatic decompensation (e.g., ascites, encephalopathy, variceal hemorrhage) 1 year prior to Screening, or a Child-Pugh grade 7 at the time of Screening.	○ Yes (IEEX03[N]=1) ○ No (IEEX03[N]=2)
4-1) Evidence of liver cirrhosis defined as meeting any of the following criteria:	○ Yes (IEEX04[N]=1) ○ No (IEEX04[N]=2)
REASON	☐ a) Platelet count <100,000/mm³ (IEEX04A[N]=1)
REASON	☐ b) Clinically significant portal hypertension (IEEX04B[N]=1)
REASON	☐ c) Presence of esophageal or gastric varices by endoscopy in 2 years before the time of screening (IEEX04C[N]=1)
REASON	☐ d) Fibroscan ≥ 12.0 kPa (If the test was done in 3 months before the time of screening.) (IEEX04D[N]=1)
4-2) 40≤ALT levels<70 IU/L (males) or 40≤ ALT levels<50 IU/L (females) with evidence of significant fibrosis(F2; ≥7.2 kPa) as measured by either liver biopsy, Fibroscan or MR Elastograpy performed within 3 months.	○ Yes (IEEX04_2[N]=1) ○ No (IEEX04_2[N]=2)
5) Currently on or have received therapy with Interferon or immunosuppressant (including systemic chemotherapy) within 12 months prior to the screening	○ Yes (IEEX05[N]=1) ○ No (IEEX05[N]=2)

6) Requirement for chronic use of systemic immunosuppressant including, but not limited to, corticosteroid (prednisone equivalent of >40 mg/day for >2 weeks), azathioprine, or monoclonal antibodies	○ Yes (IEEX06[N]=1) ○ No (IEEX06[N]=2)
7) Received solid organ or bone marrow transplant	○ Yes (IEEX07[N]=1) ○ No (IEEX07[N]=2)
8) History of severe, life-threatening or other significant sensitivity to any excipients of the study drugs	○ Yes (IEEX08[N]=1) ○ No (IEEX08[N]=2)
9) Any other clinical conditions (cardiovascular, respiratory, neurologic, or renal conditions) or prior therapy that, in the opinion of the investigator, would make the subject unsuitable for the study or unable to comply with dosing requirements.	○ Yes (IEEX09[N]=1) ○ No (IEEX09[N]=2)
10) Currently on or have received antiviral treatment for ≥ 2 weeks within 6 months prior to the screening	○ Yes (IEEX10[N]=1) ○ No (IEEX10[N]=2)
11) History or current evidence of hepatocellular carcinoma (HCC), or high α-fetoprotein (AFP) > 20 ng/mL. (Patients with AFP>20ng/mL can be enrolled, however if imaging investigations, such as dynamic CT or MRI, provide no evidence of HCC within 4 months	○ Yes (IEEX11[N]=1) ○ No (IEEX11[N]=2)
12) Malignancy other than hepatocellular carcinoma within the 5 years prior to screening, with the exception of specific cancers that are cured by surgical resection (within 2 years prior to screening with confirmation of no evidence of disease). Subjects under evaluation for possible malignancy are not eligible	○ Yes (IEEX12[N]=1) ○ No (IEEX12[N]=2)
13) Concurrent enrollment in another clinical study for other type of antiviral treatment for CHB or immune modulatory drug within 3 months prior to randomization, Participation to an observational (non-interventional) clinical studies or interventional studies not using anti-HBV or immune modulatory drugs, or during the follow-up period of an interventional study are not exclusion criteria.	○ Yes (IEEX13[N]=1) ○ No (IEEX13[N]=2)
14) Pregnant women, women who are breastfeeding or who believe they may wish to become pregnant during the course of the study	○ Yes (IEEX14[N]=1) ○ No (IEEX14[N]=2)
Result of Screening	○ Screen Pass (IERSSTAT[N]=1) ○ Screen Failure (Not randomized after obtained consent form) (IERSSTAT[N]=2)
Did not meet inclusion/exclusion criteria	☐ Did not meet inclusion/exclusion criteria (IERSREAS1[N]=1)
Subject withdrew consent	☐ Subject withdrew consent (IERSREAS2[N]=1)
Investigator Decision	☐ Investigator Decision (IERSREAS3[N]=1)
Others	☐ others (IERSREAS4[N]=1)
Comment	(IERSCOM[C])

도메인명(eCRF 명)	Medical History

Screening	Baseline	M6	M12	M18	M24	M30	M36	M42	M48 (EOT)	UV

Past-Medical History

If the subject is taking any medication for ongoing diagnosis, please record it on Medication form

Medical history not collected	☐ Yes (MHSTAT[N]=1)
Reason for not collecting medical history	○ Patient refusal (MHREASND[N]=1) ○ Unknown (MHREASND[N]=2) ○ Other (MHREASND[N]=3)
Reason for not collecting medical history (If other, please specify)	(MHREASNDCOM[C])
Date of collection	(MHDTC[D])
Screening date for Medical history	(MHENRF[D])

No Significant Past-Medical History	☐ No Significant Past-Medical History (MHSIG[N]=1)

MHTERM	Past-Medical Diagnoses	International classification of disease (ICD-10)	Start year	Status of Diagnosis at Screening	Date of First treatment	Treatment within 1 year	Comment
Hypertension	○ Yes (MHYN1[N]=1) ○ No (MHYN1[N]=2)	○ I10 (MHDECOD1[N]=1)	(MHSTDTC1[N4])	○ Before (MHENRTPT1[N]=1) ○ After (MHENRTPT1[N]=2) ○ Coincident (MHENRTPT1[N]=3) ○ Ongoing (MHENRTPT1[N]=4) ○ Unknown (MHENRTPT1[N]=5)	(MHSTTRTDTC1[D])	○ No (MHTRT1[N]=1) ○ Yes (MHTRT1[N]=2) ○ Unknown (MHTRT1[N]=3)	(MHCOM1[C])
Diabetes Mellitus	○ Yes (MHYN2[N]=1) ○ No (MHYN2[N]=2)	○ E11 (MHDECOD2[N]=1)	(MHSTTRTDTC2[N4])	○ Before (MHENRTPT2[N]=1) ○ After (MHENRTPT2[N]=2) ○ Coincident (MHENRTPT2[N]=3) ○ Ongoing (MHENRTPT2[N]=4) ○ Unknown (MHENRTPT2[N]=5)	(MHSTTRTDTC27[D])	○ No (MHTRT2[N]=1) ○ Yes (MHTRT2[N]=2) ○ Unknown (MHTRT2[N]=3)	(MHCOM2[C])

MHTERM	Past-Medical Diagnoses	International classification of disease (ICD-10)	Start year	Status of Diagnosis at Screening	Date of First treatment	Treatment within 1 year	Comment
Cancer	○ Yes (MHYN3[N]=1) ○ No (MHYN3[N]=2)	○ C18 Malignant neoplasm of colon (MHDECOD3[N] =1) ○ C22 Malignant neoplasm of liver and intrahepatic bi le ducts (MHDECOD3[N] =2) ○ C34 Malignant neoplasm of bronc hus and lung (MHDECOD3[N] =3) ○ C50 Malignant neoplasm of breas t (MHDECOD3[N] =4) ○ C16 Malignant neoplasm of stom ach (MHDECOD3[N] =5) ○ C73 Malignant neoplasm of thyroi d gland (MHDECOD3[N] =6) ○ C25 Malignant neoplasm of pancr eas (MHDECOD3[N] =7) ○ C61 Malignant neoplasm of prost ate (MHDECOD3[N] =8)	(MHSTTRTDTC3 [N8])	○ Before (MHENRTPT3[N] =1) ○ After (MHENRTPT3[N] =2) ○ Coincident (MHENRTPT3[N] =3) ○ Ongoing (MHENRTPT3[N] =4) ○ Unknown (MHENRTPT3[N] =5)	(MHSTTRTDTC37 [D])	○ No (MHTRT3[N]=1) ○ Yes (MHTRT3[N]=2) ○ Unknown (MHTRT3[N]=3)	(MHCOM3[C])

Other Disease Y/N

Other Disease YN	☐ No Other Disease (MHOSTAT[N]=1)

Other Disease Name	International classification of disease (ICD-10)	Start year	Status of Diagnosis at Screening	Date of First treatment	Treatment within 1 year	Comment
(MHOTERM[C])	(MHODECOD[C])	(MHOSTDTC[N8])	○ Before (MHOENRTPT[N]=1) ○ After (MHOENRTPT[N]=2) ○ Coincident (MHOENRTPT[N]=3) ○ Ongoing (MHOENRTPT[N]=4) ○ Unknown (MHOENRTPT[N]=5)	(MHOSTTRTDTC[D])	○ No (MHOTRT[N]=1) ○ Yes (MHOTRT[N]=2) ○ Unknown (MHOTRT[N]=3)	(MHOCOM[C])

Drinking History

Drinking History	☐ Unknown (DMDRKSTAT[N]=1)
Drinking Type	○ Never drinker - less than 1 bottle a year (DMDRK[N]=0) ○ Ex- drinker - stop > 1 year (DMDRK[N]=1) ○ Current drinker - current or ex-drinker (stop < 1 year) (DMDRK[N]=2)
Drinking Period	(DMDRKDUR[N3.2]) year(s) ex) 6month → 0.5, 1year 6month → 1.5
Frequency Drinking	(DMDRKFRQ[N3.2]) time(s) / a week
Amount/Day (per time)	(DMDRKDAYAMT[N3.2]) g ※ 1 glass = 10 gram
Glass per time	glass (DMDRKAMT[N3.2])
Type of alcohol	○ Soju (DMDRKCAT[N]=1) ○ Beer (DMDRKCAT[N]=2) ○ Liquor (DMDRKCAT[N]=3) ○ Local liquor (막걸리or 高粱酒) (DMDRKCAT[N]=4) ○ Wine (DMDRKCAT[N]=5)

Smoking History

Smoking History	☐ Unknown (DMSMKSTAT[N]=1)
Smoking Type	○ Never smoker - less than 100 cigarettes all life (DMSMK[N]=0) ○ Ex- smoker - stop > 1 year (DMSMK[N]=1) ○ Current smoker - current or ex-smoker (stop < 1 year) (DMSMK[N]=2)
Amount/day	[ ] cigarette(s) (DMSMKAMT[N3.2])
Smoking Period	[ ] year(s) (DMSMKDUR[N3.2])
Smoking Cessation Period	[ ] year(s) (DMNSMKDUR[N3])
Smoking quit month	[ ] month(s) (DMNSMKDUR1[N3])

Pack Year	[ ] PY (DMSMKPY[N3.2]) Pack Year: (Amount/Day) ÷ 20 x Smoking Period

Family history

	Family history	ICD-10 code	Applicable family				
Hepatitis B	○ Yes (MHFHSTAT1[N]=1) ○ No (MHFHSTAT1[N]=2) ○ Unknown (MHFHSTAT1[N]=3)	○ B18.1 (MHFHDECOD1[N]=1)	☐ Father (MHFHAP1A[N]=1)	☐ Mother (MHFHAP1B[N]=1)	☐ Grandparents (MHFHAP1C[N]=1)	☐ Siblings (MHFHAP1D[N]=1)	☐ Children (MHFHAP1E[N]=1)
Liver cancer	○ Yes (MHFHSTAT2[N]=1) ○ No (MHFHSTAT2[N]=2) ○ Unknown (MHFHSTAT2[N]=3)	○ C22.0 (MHFHDECOD2[N]=1)	☐ Father (MHFHAP2A[N]=1)	☐ Mother (MHFHAP2B[N]=1)	☐ Grandparents (MHFHAP2C[N]=1)	☐ Siblings (MHFHAP2D[N]=1)	☐ Children (MHFHAP2E[N]=1)

도메인명(eCRF 명)	Randomization

Screening	Baseline	M6	M12	M18	M24	M30	M36	M42	M48 (EOT)	UV

Randomization

* Randomization is completed by clicking the Save button at the bottom.

Did this subject meet the all inclusion/exclusion criteria?	○ Yes (RNIEYN[N]=1) ○ No (RNIEYN[N]=2)
Is the subject confirmed with HBeAg positive or negative?	○ Yes (RNHBEAGYN[N]=1) ○ No (If no, please correct the Laboratory data at Screening visit.) (RNHBEAGYN[N]=2) It was not randomized.
Treatment Arm	○ TAF (25mg/day) treatment (RNARM[N]=1) ○ Best supportive care (RNARM[N]=2)
Assigned date	(RNDTC[D])
Dispense study drug	○ Done (RNEXSTAT[N]=1) ○ Not done (RNEXSTAT[N]=2)
Comment	(RNCOM[C])

도메인명(eCRF 명)	Physical Examination, Vital Sign

Screening	Baseline	M6	M12	M18	M24	M30	M36	M42	M48 (EOT)	UV

Replaced with the vital signs were checked within 28 days prior to the baseline	☐ Replaced with the vital signs were checked within 28 days prior to the baseline (VSOCCUR[N]=1)

Vital signs & Additional Information

Visit Date	(VSDTC[D])
Vital sign	☐ Not Done (VSSTAT[N]=1)
Systolic BP	mmHg (VSSYSBP[N3])
Diastolic BP	mmHg (VSDIABP[N3.1])
Pulse rate	bpm (VSPULSE[N3.1])

Height	cm (1 decimal) (VSHEIGHT[N3.1])	☐ Not Done (VSHEIGHTSTAT[N]=1)
Weight	kg (1 decimal) (VSWEIGHT[N3.1])	☐ Not Done (VSWEIGHTSTAT[N]=1)
Waist circumference	cm (VSWAIST[N3.2])	☐ Not Done (VSWAISTSTAT[N]=1)

Physical Examination

Physical Examination	☐ Not Done (PESTAT[N]=1)
Specific finding	○ Normal (PEYN[N]=1) ○ Abnormal (PEYN[N]=2)
SympComment	(PECOM[C])

Events

Events	☐ Not Done (CESTAT[N]=1)		
Clinical event	○ Not occurred (CEOCCUR[N]=1) ○ Occurred (CEOCCUR[N]=2)		
Hepatocellular Carcinoma	○ Yes (CEHEP[N]=1) ○ No (CEHEP[N]=2)	Onset date	(CEHEPDTC[D])
Death	○ Yes (CEDEA[N]=1) ○ No (CEDEA[N]=2)	Onset date	(CEDEADTC[D])
Liver decompensation	○ Yes (CELIVD[N]=1) ○ No (CELIVD[N]=2)	Onset date	(CELIVDDTC[D])
Ascites	○ Yes (CEASC[N]=1) ○ No (CEASC[N]=2)	Onset date	(CEASCDTC[D])
Varix	○ Yes (CEVAR[N]=1) ○ No (CEVAR[N]=2)	Onset date	(CEVARDTC[D])
Liver transplantation	○ Yes (CELIVT[N]=1) ○ No (CELIVT[N]=2)	Onset date	(CELIVTDTC[D])

도메인명(eCRF 명)	EQ-5D questionnaire

Screening	Baseline	M6	M12	M18	M24	M30	M36	M42	M48 (EOT)	UV

EQ-5D questionnaire

Not Done	☐ Not Done (QSND[N]=1)
Mobility	○ I have no problems in walking (QSYN1[N]=1)
	○ I have slight problems in walking (QSYN1[N]=2)
	○ I have moderate problems in walking (QSYN1[N]=3)
	○ I have severe problems in walking (QSYN1[N]=4)
	○ I am unable to walk (QSYN1[N]=5)
Self-Care	○ I have no problems washing or dressing myself (QSYN2[N]=1)
	○ I have slight problems washing or dressing myself (QSYN2[N]=2)
	○ I have moderate problems washing or dressing myself (QSYN2[N]=3)
	○ I have severe problems washing or dressing myself (QSYN2[N]=4)
	○ I am unable to wash or dress myself (QSYN2[N]=5)

Usual Activities	◯ I have no problems doing my usual activities (QSYN3[N]=1) ◯ I have slight problems doing my usual activities (QSYN3[N]=2) ◯ I have moderate problems doing my usual activities (QSYN3[N]=3) ◯ I have severe problems doing my usual activities (QSYN3[N]=4) ◯ I am unable to do my usual activities (QSYN3[N]=5)
Pain / Discomfort	◯ I have no pain or discomfort (QSYN4[N]=1) ◯ I have slight pain or discomfort (QSYN4[N]=2) ◯ I have moderate pain or discomfort (QSYN4[N]=3) ◯ I have severe pain or discomfort (QSYN4[N]=4) ◯ I have extreme pain or discomfort (QSYN4[N]=5)
Anxiety / Depression	◯ I am not anxious or depressed (QSYN5[N]=1) ◯ I am slightly anxious or depressed (QSYN5[N]=2) ◯ I am moderately anxious or depressed (QSYN5[N]=3) ◯ I am severely anxious or depressed (QSYN5[N]=4) ◯ I am extremely anxious or depressed (QSYN5[N]=5)
EQ-VAS	[ ] 점 (QSEQVAS[N3.1])

도메인명(eCRF 명)	Laboratory Values

Screening	Baseline	M6	M12	M18	M24	M30	M36	M42	M48 (EOT)	UV

Laboratory Values

Laboratory test	☐ Not Done (LBSTAT[N]=1)
Date of Tests	(LBDTC[D])
Can be replaced with the test result within 2 months prior to the baseline	☐ Replaced with the laboratory result within 2 months prior to the baseline (LBROCCUR[N]=1)

Immune Serum Test

Item tested	Result	ND
HBV DNA	○ Positive (LBHBVDNA[N]=1) ○ Negative(<15IU/mL) (LBHBVDNA[N]=2)	☐ Not Done (LBHBVDNASTAT[N]=1)
HBV DNA Titer	x10^ (LBHBVDNATITER1[N4.4])	IU/mL (LBHBVDNATITER2[N4.4])
HBsAg	○ Positive (LBHBSAG[N]=1) ○ Negative (LBHBSAG[N]=2) * quantitation method	☐ Not Done (LBHBSAGSTAT[N]=1)
HBsAg Titer (optional)	IU/mL (LBHBSAGTITER[N9.4])	
HBsAb	○ Positive (LBHBSAB[N]=1) ○ Negative (LBHBSAB[N]=2)	☐ Not Done (LBHBSABSTAT[N]=1)
HBeAg	○ Positive (LBHBEAG[N]=1) ○ Negative (LBHBEAG[N]=2)	☐ Not Done (LBHBEAGSTAT[N]=1)
HBeAb	○ Positive (LBHBEAB[N]=1) ○ Negative (LBHBEAB[N]=2)	☐ Not Done (LBHBEABSTAT[N]=1)

Item tested	Result	ND	Date on test
Anti-HCV	○ Positive (LBHCV[N]=1) ○ Negative (LBHCV[N]=2)	☐ Not Done (LBHCVSTAT[N]=1)	(LBHCVDTC[D])
Anti-HIV	○ Positive (LBHIV[N]=1) ○ Negative (LBHIV[N]=2)	☐ Not Done (LBHIVSTAT[N]=1)	(LBHIVDTC[D])
Anti-HDV	○ Positive (LBHDV[N]=1) ○ Negative (LBHDV[N]=2)	☐ Not Done (LBHDVSTAT[N]=1)	(LBHDVDTC[D])

Hematology

Item tested	Result	ND
WBC	x10³/uL (1 decimal) (LBWBC[N4.4])	☐ Not Done (LBWBCSTAT[N]=1)
Hemoglobin	g/dL (1 decimal) (LBHB[N4.4])	☐ Not Done (LBHBSTAT[N]=1)
Platelet	x10³/uL (LBPLT[N4.4])	☐ Not Done (LBPLTSTAT[N]=1)
ANC	/uL (LBANC[N5.5])	☐ Not Done (LBANCSTAT[N]=1)

HbA1C

Item tested	Result	Unit	ND
HbA1C	(LBHBA[N4.4])	:: HbA1C Unit 선택 :: (LBHBAUNIT[N]=[1=%|2=mmol/mol])	☐ Not Done (LBHBASTAT[N]=1)

Blood Chemistry

Item tested	Result	ND
Ca	mg/dL (1 decimal) (LBCA[N4.4])	Not Done (LBCASTAT[N]=1)
Phosphorous	mg/dL (1 decimal) (LBPHOS[N4.4])	Not Done (LBPHOSSTAT[N]=1)
Creatinine	mg/dL (1 decimal) (LBCRT[N4.4])	Not Done (LBCRTSTAT[N]=1)
BUN	mg/dL(integer only) (LBBUN[N4.4])	Not Done (LBBUNSTAT[N]=1)
Total protein	g/dL (1 decimal) (LBTOTP[N4.4])	Not Done (LBTOTPSTAT[N]=1)
Albumin	g/dL (1 decimal) (LBALB[N4.4])	Not Done (LBALBSTAT[N]=1)
AST(SGOT)	IU/L(integer only) (LBAST[N4.4])	Not Done (LBASTSTAT[N]=1)
ALT(SGPT)	IU/L(integer only) (LBALT[N4.4])	Not Done (LBALTSTAT[N]=1)

Item tested	Result	ND
ALP	IU/L(integer only) (LBALP[N4.4])	Not Done (LBALPSTAT[N]=1)
Total bilirubin	mg/dL (1 decimal) (LBTBILI[N4.4])	Not Done (LBTBILISTAT[N]=1)
Direct bilirubin	mg/dL (1 decimal) (LBDBILI[N4.4])	Not Done (LBDBILISTAT[N]=1)
Na	mmol/L(integer only) (LBNA[N4.4])	Not Done (LBNASTAT[N]=1)
K	mmol/L (1 decimal) (LBK[N4.4])	Not Done (LBKSTAT[N]=1)

Item tested	Result	ND
Triglyceride	mg/dL(integer only) (LBTG[N4.4])	Not Done (LBTGSTAT[N]=1)
Total Cholesterol	mg/dL(integer only) (LBTCHOL[N4.4])	Not Done (LBTCHOLSTAT[N]=1)
HDL	mg/dL(integer only) (LBHDL[N4.4])	Not Done (LBHDSTAT[N]=1)
LDL	mg/dL(integer only) (LBLDL[N4.4])	Not Done (LBLDLSTAT[N]=1)

Item tested	Result	ND
eGFR	mL/min(integer only) (LBEGFR[N6.4])	Not Done (LBEGFRSTAT[N]=1)

Blood coagulation test

Item tested	Result	ND
Prothrombin time INR	(LBPTI[N4.4]) INR(Must enter up to 2 decimal)	Not Done (LBPTISTAT[N]=1)
Prothrombin time %	(LBPTP[N4.4]) % (integer only, round off the 1 decimal)	Not Done (LBPTPSTAT[N]=1)

Child-Pugh Score

Child-Pugh Score not done	Not Done (LBCPSSTAT[N]=1)
Ascites	None (LBASCITES[N]=1) Easily controlled (LBASCITES[N]=2) Poorly controlled (LBASCITES[N]=3)
Encephalopathy	Grade 0 (LBENC[N]=1) Grade I~II (LBENC[N]=2) Grade III~IV (LBENC[N]=3)
Score (points)	(LBSCORE[C])
Class	(LBCLASS[C])

Tumor Marker Test

Item tested	Result	ND
AFP	ng/mL (1 decimal) (LBAFP[C])	Not Done (LBAFPSTAT[N]=1)

Comment	(LBCOM[C])

Biospecimen sampling

Serum for storage	Not Done (LBSFSSTAT[N]=1)
Date of sampling (Serum)	(LBSFSDTC[D])
Buffy coat for storage	Not Done (LBBCFSSTAT[N]=1)
Date of sampling (Buffy coat)	(LBBCFSDTC[D])
Comment	(LBBSCOM[C])

도메인명(eCRF 명)	Imaging Finding

Screening	Baseline	M6	M12	M18	M24	M30	M36	M42	M48 (EOT)	UV

Imaging Finding

ND	Not Done (IFSTAT[N]=1)
Date of test	(IFDTC[D])
Replaced with the image result within 4months prior to the baseline	Replaced with the image result within 4months prior to the baseline (IFRESTAT[N]=1)
Test type	USG (IFUSG[N]=1) CT (IFCT[N]=1) MRI (IFMRI[N]=1)
Result	Normal (IFRES[N]=1) Chronic liver disease (IFRES[N]=2) Liver cirrhosis (IFRES[N]=3) Suspicious of Liver cancer (IFRES[N]=4) Other (IFRES[N]=5)
Other image finding	(IFRESOTH[C])

Fibroscan

Fibroscan not done	Not Done (IFFIBSTAT[N]=1)
Fibroscan Date of test	(IFFIBDTC[D])
Median of fibrosis	kPa (IFFIB[N4.4])
Median of CAP	dB/m (IFCAP[N4.4])

도메인명(eCRF 명)	Bone densitometry

Screening	Baseline	M6	M12	M18	M24	M30	M36	M42	M48 (EOT)	UV

Bone densitometry (DEXA)

Bone densitometry (DEXA) Not Done	☐ Not Done (BDSTAT[N]=1)
Date of test	(BDDTC[D])
Spine g/cm2	g/cm² (BDSPI[N-4.5])
T-score (Spine)	(BDSPISCO[C])
Femur Neck g/cm2	g/cm² (BDNEC[N-4.5])
T-score (Femur neck)	(BDNECSCO[C])
Femur Total g/cm2	g/cm² (BDTOT[N-4.5])
T-score (Femur total)	(BDTOTSCO[C])

도메인명(eCRF 명)	Study drug compliance

Screening	Baseline	M6	M12	M18	M24	M30	M36	M42	M48 (EOT)	UV

Study drug compliance

Dispense study drug	○ Done (EXSTAT[N]=1) ○ Not done (EXSTAT[N]=2)

Compliance

Study Drug	NA	Start Date	End date	The actual amount of drug to take	The amount of drug taken	Compliance
Tenofovir alafenamide (25 mg/day)	☐ NA (EXNA[N]=1)	(EXSTDTC[D])	(EXENDTC[D])	Tabs (EXPLAN[C])	Tabs (EXDOSE[C])	% (EXCOMP[C])

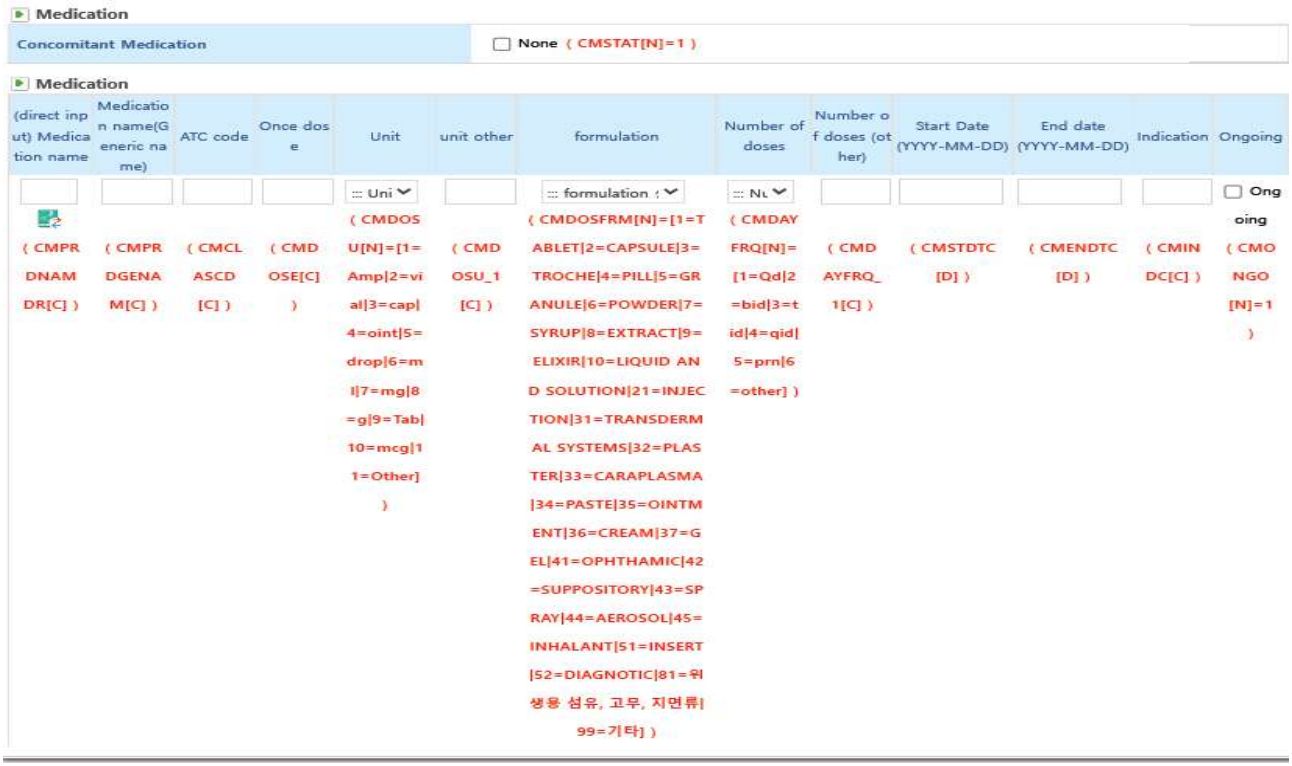
Comment	(SDCOM2[C])

Study drug return

Study Drug	Drug returned	Number of tablets returned
Tenofovir alafenamide (25 mg/day)	○ Y (SDREYN[N]=1) ○ N (SDREYN[N]=2) ○ NA (SDREYN[N]=3)	Tabs (SDRETABS[N4.4])

도메인명(eCRF 명)	Medication

Screening	Baseline	M6	M12	M18	M24	M30	M36	M42	M48 (EOT)	UV



도메인명(eCRF 명)	AE-SAE

Screening	Baseline	M6	M12	M18	M24	M30	M36	M42	M48 (EOT)	UV

Start date	(AESTDTC[D])
Ongoing	☐ Ongoing (AEONGO[N]=1)
Stop date	(AEENDTC[D])
Relationship	○ Definitely (AEREL[N]=1) ○ Probable (AEREL[N]=2) ○ Possibly (AEREL[N]=3) ○ Unlikely (AEREL[N]=4) ○ Unrelated (AEREL[N]=5) ○ Unknown (AEREL[N]=6)
Action taken with IP	○ None (AEACN[N]=1) ○ Temporary stop (AEACN[N]=2) ○ Dose Omitted (AEACN[N]=3) ○ Dose Reduction (AEACN[N]=4) ○ Dose Escalation (AEACN[N]=5) ○ Discontinuation (AEACN[N]=6)
Other actions taken for the event	○ None (AETRT[N]=1) ○ Treatment Given (AETRT[N]=2) ○ Withdraw from study (AETRT[N]=3)

Outcome	○ Recovered/resolved without sequelae (AEOUT[N]=1) ○ Recovered/resolved with sequelae (AEOUT[N]=2) ○ AE ongoing (AEOUT[N]=3) ○ Disability (AEOUT[N]=4) ○ Death (AEOUT[N]=5) ○ Unassessible/unclassifiable (AEOUT[N]=6)
Was the event serious?	○ Yes (AESER[N]=1) ○ No (AESER[N]=2)

The following data only need to entry for serious adverse events

Date AE met criteria for serious AE	(AESAEDTC[D])
Date Investigator aware of serious AE	(AESAEINVDTC[D])
AE is serious due to	○ Result in Death (AESAEDUE[N]=1) ○ Life Threatening Event (AESAEDUE[N]=2) ○ Hospitalization (AESAEDUE[N]=3) ○ Prolongation of Existing Hospitalization (AESAEDUE[N]=4) ○ Resulted in Disability or Incapacity (AESAEDUE[N]=5) ○ Congenital Abnormality or Birth Defect (AESAEDUE[N]=6) ○ Is a Medically Important Event (AESAEDUE[N]=7)
Narrative: record a detailed description of the event, including the course of event, evaluation and assessment, diagnosis and treatment	(AESAECOM[C])
SAE outcome	○ Recovered / Resolved (AESAEOUT[N]=1) ○ Recovered / Resolved with sequelae (AESAEOUT[N]=2) ○ Recovering / Resolving (AESAEOUT[N]=3) ○ Not recovered / Not resolved (AESAEOUT[N]=4) ○ Fatal (AESAEOUT[N]=5) ○ Unknown (AESAEOUT[N]=6)
SAE Resolution Date	(AESAEREDTC[D])
SUSAR	○ Yes (AESAESUSAR[N]=1) ○ No (AESAESUSAR[N]=2)
Report Type	○ Initial (AESAEREPORTTYPE[N]=1) ○ Follow up (AESAEREPORTTYPE[N]=2) ○ Final (AESAEREPORTTYPE[N]=3) ○ Initial & Final (AESAEREPORTTYPE[N]=4)
Report Date	(AESAEREPORTDTC[D])

도메인명(eCRF 명)	Case Close

Screening	Baseline	M6	M12	M18	M24	M30	M36	M42	M48 (EOT)	UV

Case Close

I have reviewed all data contained in this case report form and verified that the contents are consistent with observation and source records.
They accurately reflect the condition of the subject, before during and at completion of the study.

End of study	(DSENDTC[D])
First dose date	(DSDOSEDTC[D])
First dose date NA	NA (DSNA[N]=1)
Protocol completed	Yes (DSCOMPL[N]=1) No (DSCOMPL[N]=2)
Date of drop out	(DSDROPDTC[D])
Reason for ending data collection for this subject	Not followed by physician (DSDROP[N]=1)
	Lost to Follow-up (DSDROP[N]=2)
	Patient Decision (subject withdrew consent, etc.) (DSDROP[N]=3)
	Any serious events regardless of this study (DSDROP[N]=4)
	Adverse Event (DSDROP[N]=5)
	Subject refused due to Adverse Event (DSDROP[N]=6)
	Death (DSDROP[N]=7)
	Other (DSDROP[N]=8)
Not followed by physician (Date subject last contact)	(DSLASTDTC[D])
Adverse Event (if AE, specify)	(DSDROPAE[C])
Subject refused due to Adverse Event (if AE, specify)	(DSDROPSRAE[C])
Other (if other, specify)	(DSDROPOTH[C])

Event Follow Up	○ Yes (DSFU[N]=1) ○ No (DSFU[N]=2) ○ NA (DSFU[N]=3)
Occurrence of cancer	○ Yes (DSCOCCUR[N]=1) ○ No (DSCOCCUR[N]=2)
Occurrence of cancer Date	(DSCDTC[D])
Death	○ Yes (DSDEATH[N]=1) ○ No (DSDEATH[N]=2)
Death Date	(DSDEATHDTC[D])
Comment	(DSCOM[C])

도메인명(eCRF 명)	PI Reveiw, Sign

Screening	Baseline	M6	M12	M18	M24	M30	M36	M42	M48 (EOT)	UV

Review

Principle Investigator's Signiture

I certify that I have reviewed the case report forms for this subject and verify to the best of my knowledge that the information contained herein is true.

PI	(SNNAME[C])	Review Date	(SNDTC[D])