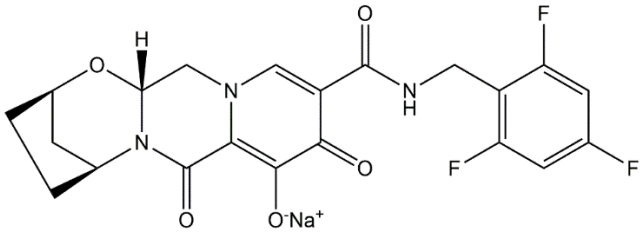
Bictegravir PK Fact Sheet

Details

Generic Name	Bictegravir
Trade Name	Biktarvy® (with emtricitabine, tenofovir alafenamide fumarate)
Class	Integrase Inhibitor
Molecular Weight	471.4
Structure	

Summary of Key Pharmacokinetic Parameters

Linearity/non-linearity	Pharmacokinetics are dose proportional over the dose range of 25 to 100 mg.
Steady state	10 days.[1]
Plasma half life	17.3 h
Cmax	6.15 µg/mL (22.9%), mean (%CV), following multiple dose administration of Biktarvy to HIV+ adults.
Ctrough	2.61 µg/mL (35.2%), mean (%CV), following multiple dose administration of Biktarvy to HIV+ adults.
AUC	102 µg.h/mL (26.9%), mean (%CV), following multiple dose administration of Biktarvy to HIV+ adults.
Bioavailability	Not determined
Absorption	Relative to fasting conditions, administration of Biktarvy with a high fat meal (~800 kcal, 50% fat) increased bictegravir AUC and Cmax by 24% and 13%. A similar effect was observed with a moderate fat meal (~600 kcal, 27% fat). Biktarvy can be taken with or without food.
Protein Binding	>99%
Volume of Distribution	15.56 L [1]
CSF:Plasma ratio	Not determined
Semen:Plasma ratio	Not determined
Renal Clearance	35% (primarily of the glucuronide and other minor oxidative metabolites and their phase II conjugates). Renal excretion of intact bictegravir is a minor pathway (~1% of dose).
Renal Impairment	No clinically relevant differences in bictegravir pharmacokinetics were observed between healthy subjects and subjects with severe renal impairment (estimated CrCl 15-29 mL/min). There are no bictegravir pharmacokinetic data in patients with CrCl <15 mL/min. No dose adjustment of Biktarvy is required in patients with estimated CrCl ≥30 mL/min. Biktarvy is not recommended in patients with estimated CrCl below 30 mL/min.
Hepatic Impairment	Clinically relevant changes in the pharmacokinetics of bictegravir were not observed in subjects with moderate (Child-Pugh Class B) hepatic impairment. No dose adjustment of Biktarvy is required in patients with mild (Child-Pugh Class A) or moderate (Child-Pugh Class B) hepatic impairment. Biktarvy has not been studied in patients with severe hepatic impairment (Child-Pugh Class C) and is not recommended for use in these patients.

Metabolism and Distribution

Metabolised by	Primarily by CYP3A and UGT1A1.
Inhibitor of	OCT2 and MATE1. At clinically relevant concentrations, bictegravir is not an inhibitor of CYP (including CYP3A) or UGT1A1 enzymes, the hepatic transporters OATP1B1, OATP1B3, OCT1, BSEP, or the renal transporters OAT1 and OAT3.
Inducer of	Does not induce CYP.
Transported by	P-gp, BCRP.

References

Unless otherwise stated (see below), information is from:

Biktarvy Summary of Product Characteristics, Gilead Sciences Ltd.

Biktarvy Prescribing Information, Gilead Sciences Inc.

1. Gallant JE, Thompson M, DeJesus E, et al. Antiviral activity, safety, and pharmacokinetics of bictegravir as 10-day monotherapy in HIV-1–infected adults. *J Acquir Immune Defic Syndr*, 2017, **75(1):** 61-66.