

Table 15: Tenofovir Disoproxil Fumarate (TDF) and Tenofovir Alafenamide (TAF) Interactions (also see prescribing information)		
Class or Drug	Mechanism of Action	Clinical Comments
Adefovir [Jafari, et al. 2014]	<ul style="list-style-type: none"> Adefovir and tenofovir have similar mechanisms of action and elimination as well as overlapping adverse effect profiles. Competitive inhibition of elimination results in additive adverse effects. 	Avoid concomitant use to avoid increased risk of hepatic steatosis, lactic acidosis, and potential renal failure.
Other nephrotoxic agents [Jafari, et al. 2014]	Competitive inhibition of elimination results in additive adverse effects.	<ul style="list-style-type: none"> TDF: Avoid concomitant use or use the lowest effective dose of another medication to avoid renal impairment and kidney dysfunction. TAF: Using TAF in these instances may be preferable because TAF is less nephrotoxic.
Sofosbuvir/velpatasvir/voxiclaprevir [brand name Vosevi] [Garrison, et al. 2017]	<ul style="list-style-type: none"> TDF and TAF are substrates for BCRP and P-gP. Voxiclaprevir is a BCRP inhibitor. Velpatasvir inhibits BCRP and P-gP. 	<ul style="list-style-type: none"> TDF: Avoid concomitant use if possible to avoid TDF-associated adverse effects. TAF: Using TAF in these instances may be preferable.
Potent CYP3A4 or P-gP inducers (phenytoin, carbamazepine, St. John's wort, etc.) [Gibson, et al. 2016]	<ul style="list-style-type: none"> CYP3A4 is a minor metabolic pathway for TAF, and as such, potent inducers of this enzyme may modestly reduce concentrations. TAF is also a P-gP substrate, and inducers may decrease TAF concentrations. 	TAF: Avoid coadministration of TAF with potent inducers of CYP3A4 or P-gP.
Rifampin, rifabutin, rifapentine	<ul style="list-style-type: none"> Rifabutin: CYP3A and P-gP induction is expected to decrease TAF levels. Rifampin, rifapentine: CYP3A induction may reduce TAF concentrations. Rifampin, rifabutin, rifapentine: No clinically significant interactions with TDF are expected. 	<ul style="list-style-type: none"> TAF: <ul style="list-style-type: none"> Rifampin: Do not coadminister with TAF; consider TDF as alternative. Rifabutin, rifapentine: Do not coadminister with TAF unless benefit outweighs risk; monitor closely for virologic response. TDF + rifampin, rifabutin, rifapentine: No dose adjustments are necessary.
Zonisamide	TDF may increase concentration of zonisamide.	TDF: When using with TDF, monitor for adverse effects.
Topiramate	No significant interactions reported.	TDF: When using with TDF, monitor renal function (topiramate may cause kidney stones; TDF is associated with renal toxicity).
Mpox treatments	Cidofovir is eliminated via glomerular filtration and active renal secretion by OAT1 and OAT3.	Cidofovir: Avoid coadministration with nephrotoxic agents. Consider use of TAF in place of TDF and monitor for renal-related adverse effects.
<p>Abbreviations: BCRP, breast cancer resistance protein; CYP, cytochrome P450; OAT, organic anion transporter; P-gP, P-glycoprotein; VIGIV, vaccinia immune globulin intravenous.</p> <p>No significant interactions/no dose adjustments necessary (see guideline section Drug-Drug Interactions by Common Medication Class): Common oral antibiotics; antihypertensive medications; anticoagulants; antiplatelet medications; statins; antidiabetic medications; acid-reducing agents; polyvalent cations; asthma and allergy medications; long-acting beta agonists; inhaled and injected corticosteroids; antidepressants; benzodiazepines; sleep medications; antipsychotics; nonopioid pain medications; opioid analgesics and tramadol; hormonal</p>		

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contraceptives; erectile and sexual dysfunction agents; alpha-adrenergic antagonists for benign prostatic hyperplasia; tobacco and smoking cessation products; alcohol, disulfiram, and acamprosate; methadone, buprenorphine, naloxone, and naltrexone; immunosuppressants; COVID-19 therapeutics; gender-affirming hormones; ADHD medications and lithium.		

References

- Garrison KL, Mogalian E, Zhang H, et al. Evaluation of drug-drug interactions between sofosbuvir/velpatasvir/voxilaprevir and boosted or unboosted HIV antiretroviral regimens. 18th International Workshop on Clinical Pharmacology of Antiviral Therapy; 2017 Jun 14-17; Chicago, IL. http://www.natap.org/2017/Pharm/Pharm_19.htm
- Gibson AK, Shah BM, Nambiar PH, et al. Tenofovir alafenamide. *Ann Pharmacother* 2016;50(11):942-952. [PMID: 27465879] <https://pubmed.ncbi.nlm.nih.gov/27465879>
- Jafari A, Khalili H, Dashti-Khavidaki S. Tenofovir-induced nephrotoxicity: incidence, mechanism, risk factors, prognosis and proposed agents for prevention. *Eur J Clin Pharmacol* 2014;70(9):1029-1040. [PMID: 24958564] <https://pubmed.ncbi.nlm.nih.gov/24958564>