

**TRANSPLANT MEDICATIONS:
IMMUNOSUPPRESSANTS**

	INSTIs		NNRTIs		PIs
	<ul style="list-style-type: none"> • BICTEGRAVIR (<i>Biktarvy</i>) • DOLUTEGRAVIR (<i>Tivicay, Triumeq, Juluca</i>) • RALTEGRAVIR (<i>Isentress</i>) 	<ul style="list-style-type: none"> • ELVITEGRAVIR/COBICISTAT (<i>Stribild, Genvoya</i>) 	<ul style="list-style-type: none"> • DORAVIRINE (<i>Pifeltro, Delstrigo</i>) • RILPIVIRINE (<i>Edurant, Complera, Odefsey, Juluca</i>) 	<ul style="list-style-type: none"> • EFAVIRENZ (<i>Sustiva, Atripla</i>) • ETRAVIRINE (<i>Intelence</i>) • NEVIRAPINE (<i>Viramune</i>) 	Boosted with ritonavir (Norvir) or cobicistat <ul style="list-style-type: none"> • ATAZANAVIR (<i>Reyataz, Evotaz</i>) • DARUNAVIR (<i>Prezista, Prezcobix, Symtuza</i>) • LOPINAVIR (<i>Kaletra</i>)

IMMUNOSUPPRESSANTS

• Azathioprine (<i>Imuran</i>)					
• Cyclosporine (<i>Neoral</i>)		Potential for ↑ immunosuppressant		Potential for ↓ immunosuppressant	Potential for ↑ immunosuppressant
• Sirolimus (<i>Rapamune</i>)		Potential for ↑ immunosuppressant		Potential for ↓ immunosuppressant	Potential for ↑ immunosuppressant
• Mycophenolate mofetil (<i>CellCept, Myfortic</i>)				Potential for ↓ immunosuppressant	Cobicistat-boosted PIs: OK
					Ritonavir-boosted PIs: potential for ↓ immunosuppressant
• Tacrolimus (<i>Prograf, Advagraf</i>)		Potential for ↑ immunosuppressant		Potential for ↓ immunosuppressant	Potential for ↑ immunosuppressant

Mechanism of Drug Interactions, Management and Monitoring

Class	Mechanism of interaction	Main interacting ARVs	Management	Monitoring
Cyclosporine, sirolimus, tacrolimus	Substrates of CYP3A4 and Pgp. Concentrations may be increased by inhibitors and decreased by inducers.	Ritonavir- or cobicistat boosted regimens may increase immunosuppressants. NNRTIs efavirenz, etravirine, nevirapine may decrease immunosuppressants	If possible switch to non-interacting antiretroviral such as doravirine, rilpivirine, or an unboosted INSTI. Otherwise, significant dose reduction of immunosuppressant may be required. Consider changing to non-inducing NNRTI such as doravirine or rilpivirine, or an unboosted INSTI	Monitor drug concentrations of immunosuppressant and dose accordingly. Monitor drug concentrations of immunosuppressant and dose accordingly.
Mycophenolate	Substrate of UGT1A4, 1A9 Ritonavir and some NNRTIs may induce UGT enzymes.	Ritonavir-boosted PIs or enzyme inducing NNRTIs (efavirenz, etravirine, nevirapine) may decrease MMF	Consider changing to non-inducing NNRTI such as doravirine or rilpivirine, an INSTI, or a cobicistat-boosted PI.	Monitor drug concentrations of immunosuppressant and dose accordingly.

Legend:	 No dose adjustment required.
	 Use combination with caution. Adjustment in drug dose or frequency or additional/more frequent monitoring may be required. May wish to consult with a pharmacist knowledgeable in HIV drug interactions.
	 Contraindicated/avoid combination.

A MANAGEMENT TOOL FOR **HIV** DRUG-DRUG INTERACTIONS

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