



COMBINATION MEDICATIONS

WHAT ARE COMBINATION MEDICATIONS?

Combination medications are pills or tablets that contain more than one medication to fight HIV. They are listed in the tables below. Pharmaceutical companies have been working hard to make their medications easier to take. Part of this effort has been to combine more than one medication in a single pill. These combinations are referred to as fixed-dose combinations, or FDCs.

The first FDC to treat HIV was [Combivir](#) by ViiV Healthcare*. Combivir contains two nucleoside analog reverse transcriptase inhibitors. This was followed by [Trizivir](#), also by ViiV Healthcare, which includes 3 nukes. Some antiviral products are only available outside the US through the US President's Emergency Plan for AIDS Relief (PEPFAR.) For more information, see fact sheet 925 or <http://www.pepfar.gov>.

Be sure that you do not take a combination medication along with any of its components! For example, do not take Truvada with tenofovir (Viread) or emtricitabine (Emtriva); do not take Combivir along with zidovudine (Retrovir) or lamivudine (Epivir.)

WHAT ARE PK BOOSTERS?

When some medications are taken by mouth, their levels in the blood are very low. For them to fight HIV, they have to be taken at high doses. Another possibility is to "boost" their blood levels. This is done by slowing down the processing (metabolism) of these drugs. A drug that slows down the metabolism is called a "PK booster." PK stands for pharmacokinetic. This refers to the way that medications are processed by the body.

The first PK booster used in HIV was [ritonavir](#) by Abbott. Ritonavir slows down the metabolism of many drugs by the liver. This increases the blood levels of some anti-HIV medications so that a lower dose can be taken. However, it can also increase blood levels of many other drugs. In some cases, this can cause a harmful overdose.

A second FDA-approved PK booster is cobicistat (GS-9350), made by Gilead Sciences

1. COMBINATIONS OF REVERSE TRANSCRIPTASE INHIBITORS ("NUKES")

Year Approved*	Generic Name	Trade Name	Also known as:	Manufacturer
1997	Zidovudine/lamivudine	Combivir	AZT or ZDV, 3TC	ViiV Healthcare & generic
2000	Zidovudine/lamivudine/abacavir	Trizivir	AZT or ZDV, 3TC, ABC	ViiV Healthcare & generic
2004	Abacavir/lamivudine	Epzicom	ABC, 3TC	ViiV Healthcare & generic
2004	Emtricitabine/tenofovir DF	Truvada	Emtriva and Viread	Gilead Sciences & generic
2016	Emtricitabine/tenofovir AF	Descovy	FTC/TAF	Gilead Sciences

At present, the following combinations are only available outside the US due to patent protections for the original developers

2007	Lamivudine/stavudine		3TC, d4T	Generic
2008	Lamivudine/tenofovir		3TC, TDF	Generic

2. COMBINATIONS OF A NON-NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITOR AND REVERSE TRANSCRIPTASE INHIBITORS

<u>Year Approved*</u>	Generic Name	LTrade Name	Also known as:	Manufacturer
2006	Efavirenz/emtricitabine/tenofovir	Atripla	EFV, Emtriva, & TDF	Bristol-Myers Squibb and Gilead
2011	Emtricitabine/rilpivirine/tenofovir DF	Complera	Emtriva, Edurant and Viread	Gilead and Tibotec
2016	Emtricitabine/rilpivirine/tenofovir AF	Odefsey	Emtriva, Edurant and TAF;	Gilead and Tibotec

At present, the following combinations are only available outside the US due to patent protections for the original developers

2005	Nevirapine/zidovudine/lamivudine	Duovir	NVP, AZT or ZDV, 3TC	Generic
2006	Efavirenz/zidovudine/lamivudine		EFV, AZT or ZDV, 3TC	Generic
2006	Nevirapine/lamivudine/stavudine	Triomune	NVP, 3TC, d4T	Generic
2006	Efavirenz/lamivudine/stavudine		EFV, 3TC, d4T	Generic

3. COMBINATIONS WITH PROTEASE INHIBITORS (NOTE: a small dose of ritonavir is used to boost blood levels of other protease inhibitors.)

<u>Year*</u>	Generic Name	Trade Name	Also Known As:	Manufacturer
2000	Lopinavir/ritonavir	Kaletra, Aluvia	LPV/r	Abbott & generic
2015	Darunavir/cobicistat	Prezcobix	DRV/c	Janssen and Gilead

4. COMBINATIONS WITH INTEGRASE INHIBITORS NOTE: a small dose of ritonavir or cobicistat is used to boost blood levels of the integrase inhibitors.

<u>Year*</u>	Generic Name	Trade Name	Also Known As:	Manufacturer
2012	Elvitegravir/cobicistat/emtricitabine/tenofovir DF	Stribild	Quad, E/C/F/TDF	Gilead Sciences
2014	Abacavir/dolutegravir/lamivudine	Triumeq	ABC/3TC/DTG	ViiV Healthcare
2015	Elvitegravir/cobicistat/emtricitabine/tenofovir AF	Genvoya	E/C/F/TAF	Gilead Sciences

*Year of approval of the first version of the combination. More information on medications approved as part of the US President's Emergency Plan for AIDS Relief is available at <http://www.fda.gov/oia/pepfar.htm>

Revised June 7, 2016