

## Case Reports of Sequentially Expressed Dual Infection (Apparent Superinfection and Source-Partner Identified Superinfection)

	<i>Duration of First Infection</i>	<i>Antiviral Treated</i>	<i>Viral Subtypes</i>	<i>Drug Resistance of First Virus</i>	<i>Drug Resistance of Second Virus</i>	<i>Risk Factors</i>	<i>Source Partner Identified</i>	<i>Location</i>	<i>Reference</i>
<b>1</b>	<12 weeks	No	B after AE	Unknown	Unknown	IDU	No	Thailand	Ramos, A., D. J. Hu, et al. (2002). "Intersubtype human immunodeficiency virus type 1 superinfection following seroconversion to primary infection in two injection drug users." <i>J Virol</i> 76(15): 7444-52.
<b>2</b>	<44 weeks	No	AE after B	Unknown	Unknown	IDU	No	Thailand	
<b>3</b>	<152 weeks	Yes, intermittent	B after AE	Wildtype	Unknown	MSM	No	Switzerland	Jost, S., M. C. Bernard, et al. (2002). "A patient with HIV-1 superinfection." <i>N Engl J Med</i> 347(10): 731-6.
<b>4</b>	<128 weeks	Yes, intermittent	B after A	Unknown	Unknown	MSM	No	Boston	Altfeld, M., T. M. Allen, et al. (2002). "HIV-1 superinfection despite broad CD8+ T-cell responses containing replication of the primary virus." <i>Nature</i> 420(6914): 434-9.
<b>5</b>	<16 weeks	No	B after B	MDR	Wildtype	MSM	No	San Diego	Koelsch, K. K., D. M. Smith, et al. (2003). "Clade B HIV-1 superinfection with wild-type virus after primary infection with drug-resistant clade B virus." <i>AIDS</i> 17(7): F11-6.
<b>6</b>	<68 weeks	No	B after B	Unknown	Unknown	MSM	No	U.S., MACS	Gottlieb, G. S., D. C. Nickle, et al. (2004). "Dual HIV-1 infection associated with rapid disease progression." <i>The Lancet</i> 363: 619-22.
<b>7</b>	84-432 weeks	No	AC after A	Unknown	Unknown	FSW	No	Nairobi	Fang, G., B. Weiser, et al. (2004). "Recombination following superinfection by HIV-1." <i>AIDS</i> 18: 153-159.
<b>8</b>	<104 weeks	No	B after CRF-11	Unknown	Unknown	IDU	No	Switzerland	Yerly, S., S. Jost, et al. (2004). "HIV-1 co/super-infection in intravenous drug users." <i>AIDS</i> 18: 1413-1421.
<b>9</b>	<260 weeks	No	CRF-11 after B	Unknown	Unknown	IDU	No	Switzerland	
<b>10</b>	<156 weeks	No	CRF-11 after B	Unknown	Unknown	IDU	No	Switzerland	
<b>11</b>	>56 weeks	No	Unknown subtype after CRF02-AG	Unknown	Unknown	FSW	No	Burkina Faso	Manigart, O., V. Courgnaud, et al. (2004). "HIV-1 superinfections in a cohort of commercial sex workers in Burkina Faso as assessed by an autologous heteroduplex mobility procedure." <i>AIDS</i> 18(12): 1645-1651.
<b>12</b>	>32 weeks	No	CRG06-cpx after CRF02-AG	Unknown	Unknown	FSW	No	Burkina Faso	
<b>13</b>	<40 weeks	No	B after B	MDR	MDR	MSM	No	Montreal	Brenner, B., J. P. Routy, et al. (2004). "Persistence of multidrug-resistant HIV-1 in primary infection leading to superinfection." <i>AIDS</i> 18(12): 1653-1660.
<b>14</b>	<52 weeks	No	B after B	Drug resistance	Wildtype	MSM	No	San Diego	Smith, D., J. Wong, et al. (2004). "Incidence of HIV superinfection following primary infection." <i>JAMA</i> 292(10): 1777-8.
<b>15</b>	<52 weeks	No	B after B	Wildtype	Drug resistance	MSM	No	San Diego	
<b>16</b>	<180 weeks	No	M (CRF-02_AG) after O	Unknown	Unknown	FSM	Yes	France	Plantier, J., V. Lemée, et al. (2004). "HIV-1 group M superinfection in an HIV-1 group O-infected patient." <i>AIDS</i> 18(18): 2444-2446.
<b>17</b>	<16 weeks	No	B after B	MDR	Wildtype	MSM	No	Los Angeles	Yang, O.O., E.S. Daar, et al. (2005). "Human immunodeficiency virus type 1 clade B superinfection: evidence for differential immune containment of distinct clade B strains." <i>J Virol</i> 79(2): 860-868.

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18	131-177 weeks	No	B after B	Wildtype	Possible NNRTI resistance	MSM	No	San Francisco	
19	16-44 weeks	No	B after B	Wildtype	Wildtype	MSM	No	San Francisco	Grant, R. M., J. McConnell, et al. (2005). "Higher frequency of apparent HIV-1 superinfection -- sequentially expressed dual infection (SEDI) -- in recent infection compared to chronic infection." <i>12th CROI</i> .
20	29-39 weeks	No	B after B	Wildtype	Wildtype	MSM	No	San Francisco	
21	43-53 weeks	No	B after B	MDR	Wildtype	MSM	No	San Francisco	
22	38-55 weeks	No	A after D	Unknown	Unknown	FSW	No	Kenya	
23	43-84 weeks	No	CA after C	Unknown	Unknown	FSW	No	Kenya	Chohan, B., L. Lavreys, et al. (2005). "Evidence for Frequent Reinfection with Human Immunodeficiency Virus Type 1 of a Different Subtype." <i>J Virol</i> 79(16): 10701-10708.
24	14-69 weeks	No	A after D	Unknown	Unknown	FSW	No	Kenya	
25	24-54 weeks	No	AC after ACD	Unknown	Unknown	FSW	No	Tanzania	MCCutchan, F.E., M. Hoelscher, et al. (2005). "In-depth analysis of a heterosexually acquired HIV type 1 superinfection . . ." <i>J Virol</i> 79(18): 11693-11704.
26	<120 weeks	Unknown	AE/B after B	Unknown	Unknown	MSM	No	Netherlands	Van der Kuyl, A., K. Kozaczynska, et al. (2005). "Triple HIV-1 infection." <i>N Eng J Med</i> 352(24): 2557-2559.
27	624 weeks	Yes, intermittent	B after B	Wildtype	NRTI resistance	IDU	No	Spain	Pernas, M., C. Casado, et al. (2006). "A dual superinfection and recombination within HIV-1 subtype B 12 years after primo-infection." <i>J Acquir Immune Defic Syndr</i> 42(1): 12-8.
28	348-392 weeks	Yes, intermittent	B after B	MDR	MDR	MSM	Yes	Connecticut	Blick, G., R.M. Kagan, et al. (2007). "The Probable Source of Both the Primary Multidrug-Resistant (MDR) HIV-1 Strain Found in a Patient with Rapid Progression to AIDS and a Second Recombinant MDR Strain Found in a Chronically HIV-1-Infected Patient." <i>JID</i> 195:1250-1259.
29	107-147 weeks	No	A*D after AD	Unknown	Unknown	FSW	No	Kenya	
30	240-293 weeks	No	A1 after D/A2	Unknown	Unknown	FSW	No	Kenya	
31	7-10 weeks	No	D after A	Unknown	Unknown	FSW	No	Kenya	
32	262-280 weeks	No	C after A	Unknown	Unknown	FSW	No	Kenya	Piantadosi, A., B. Chohan, et al. (2007). "Chronic HIV-1 superinfection fails to protect against superinfection." <i>PLOS Pathogens</i> 3(11): 1745-1760.
33	102-144 weeks	No	A after A	Unknown	Unknown	FSW	No	Kenya	

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<b>34</b>	43-208 weeks	No	A after A	Unknown	Unknown	FSW	No	Kenya	
<b>35</b>	8-22 weeks	No	A after C/A	Unknown	Unknown	FSW	No	Kenya	
<b>36</b>	676 weeks	No	B after B	Unknown	Unknown	MSM	Yes	Netherlands	Rachinger, A. M. Navis, et al. (2008). "Regain of Viremic Control after Superinfection of an Elite Controller of HIV-1 Infection." <i>15th CROI</i> .
<b>37</b>	>264 weeks	Yes	B after B, limited	Unknown	Unknown	MSM	Yes	Seattle	
<b>38</b>	>236 weeks	Yes, intermittent	B after B, limited	Unknown	Unknown	MSM	Yes	Seattle	Campbell, M. S., G. S. Gottlieb, et al. (2008). "Transmission of HIV-1 in Seroconcordant Couples." <i>15th CROI</i> .
<b>39</b>	212-246 weeks	Unknown	A after D	Unknown	Unknown	FSW	No	Kenya	
<b>40</b>	62-180 weeks	Unknown	A after A	Unknown	Unknown	FSW	No	Kenya	Piantadosi, A., M.O. Ngayo, et al. (2008) "Examination of a second region of the HIV type 1 genome reveals additional cases of superinfection." <i>AIDS Res Hum Retroviruses</i> 24(9):1221-1224.
<b>41</b>	Unknown	Unknown	C after ?	Unknown	Unknown	MSF	No	Zambia	
<b>42</b>	Unknown	Unknown	C after ?	Unknown	Unknown	FSM	No	Zambia	Kraft, C.S., P. Hawkins, et al. (2008) "HIV-1 Superinfection in Cohabiting Zambian Heterosexual Couples." <i>48th Interscience Conference on Antimicrobial Agents and Chemotherapy</i> .
<b>43</b>	Unknown	Unknown	C after ?	Unknown	Unknown	MSF	Yes	Zambia	
<b>44</b>	>71 weeks	Unknown	Unknown	Unknown	Unknown	Unknown	No	Boston	Streeck H., B. Li, et al.(2008) "Immune-driven recombination and loss of control after HIV superinfection." <i>J Exp Med</i> 205(8):1789-96.

*IDU = intravenous-drug user; MSM = men who have sex with men; MDR = multidrug resistance; FSW = female sex workers; NNRTI = nonnucleoside reverse transcriptase inhibitor; MSF = men who have sex with females; FSM = females who have sex with men*