

THE LANCET Microbe

Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed.
We post it as supplied by the authors.

Supplement to: Rhee S-Y, Kassaye SG, Jordan MR, Kouamou V, Katzenstein D, Shafer RW.
Public availability of HIV-1 drug resistance sequence and treatment data: a systematic
review. *Lancet Microbe* 2022; published online Jan 19. [https://doi.org/10.1016/
S2666-5247\(21\)00250-0](https://doi.org/10.1016/S2666-5247(21)00250-0).

Appendix 1. Search terms and strategy

PubMed search terms

Search conducted 2020-03-01:

HIV[Text Word] AND (pol[Text Word] OR protease[Text Word] OR RT[Text Word] OR "reverse transcriptase"[Text Word] OR integrase[Text Word]) AND (sequenc*[Text Word] OR genotyp*[Text Word]) AND (resistance[Text Word] OR resistant[Text Word]) NOT review[Publication Type] AND english[Language] AND ("2010"[Date - Publication] : "2019"[Date - Publication]).

GenBank search strategy[†]

Search conducted 2020-05-01:

Step 1: Downloaded GenBank-format flat files of viral sequences (v. 237, released on 2020-04-15)
Step 2: Conversion to BLAST searchable database using MAKEBLASTDB (in NCBI blast+ package)
Step 3: TBLASTN (in NCBI blast+ package) search using HIV-1 group M *pol* consensus amino acid sequence
Step 4: Sequences containing RT +/- protease +/- integrase and accompanying annotations retrieved
Step 5: Search results grouped into submission sets containing the same "Title" and "Authors"

[†]The same procedure was used and described in the publications below:

Rhee S-Y, Shafer RW. Geographically-stratified HIV-1 group M *pol* subtype and circulating recombinant form sequences. *Sci. Data* 5:180148 doi: 10.1038/sdata.2018.148(2018)

Rhee, S-Y, Margeridon-Thermet S, Nguyen MH, Liu TF, Kagan RM, Beggle B, et al, Hepatitis B virus reverse transcriptase sequence variant database for sequence analysis and mutation discovery. *Antiviral Res.* (2010), doi:10.1016/j.antiviral.2010.09.012

Appendix 2. Complete list of 934 studies meeting inclusion criteria

PMID	AuthorYr	Trial name (ClinicalTrials.gov Identifier)	Region	Median Sample Year	#Persons with sequences				Availability	
					Total	Children	ART/INSTI Naive	ART	Seq	Seq linked to Rx
26529365	Abdellaziz16		Middle East/North Africa	2013	152		89	63	GB	NA
27412696	Abdoel16		Latin America/Caribbean	2009	100		100		GB	Naive
31416460	Abongwa19		Sub-Saharan Africa	2016	81		81		GB	Naive
25157501	Acharya14		Asia	2013	206			206	GB	HIVDB
29126456	Adawaye17		Sub-Saharan Africa	2011	50			50		
22952625	Afonso12		Sub-Saharan Africa	2010	101		101		GB	Naive
31024744	Agapki19		FSU	NA	324		324			
21860346	Aghokeng11		Sub-Saharan Africa	2007	206		206		GB	Naive
23374858	Aghokeng13		Sub-Saharan Africa	2009	65			65	GB	Same Rx
24076968	Aghokeng14		Multiple	2010	433			433	GB	NA
24248638	Agyingi14		Sub-Saharan Africa	2010	108		93	15	GB	HIVDB
30648124	Ahmed19		Europe	NA	1			1		
21568761	Ajoge12		Sub-Saharan Africa	2007	28		28		GB	Naive
29884219	Alaoui18		Middle East/North Africa	2014	77		77		GB	Naive
31307042	Alaoui19		Middle East/North Africa	2014	78		78		GB	Naive
22877156	Alcalde12		Latin America/Caribbean	2007	293		211	82	GB	NA
22317908	Alcantara12		Latin America/Caribbean	2009	83	83			GB	HIVDB
31242157	Aleman-Campos18		Latin America/Caribbean	2011	926		342	584		
23507660	Alencar13		Latin America/Caribbean	2009	300		300		GB	Naive
25652746	Alexiev15		Europe	2011	305		305		GB	Naive
27221346	Alexiev17		FSU	2010	117		99	18	GB	Naive
29091197	Alidjinou17		Europe	2014	48		48			
27798676	Alvarez16		Europe	2013	38			38	GB	NA
31024510	Alves19		Latin America/Caribbean	2016	48		27	48	GB	HIVDB
28591401	Amaral17		Latin America/Caribbean	2012	247		118	129	GB	NA
23052354	Ambrosioni12		Europe	2009	142		142			
27624569	Ambrosioni17		Europe	2016	36		36			
31090546	Ambrosioni19		Europe	2016	67		67			
25114163	Amiel14		Europe	2012	61			70		
26881451	Amogne16		Sub-Saharan Africa	2008	133		133		GB	Naive
22933290	An12		Asia	2009	39		39		GB	Naive
29369826	Andersson18		Europe	2013	1713		1713			
28333295	Andrade17		Latin America/Caribbean	2012	117	117				
25397420	Andrea14		Europe	2013	276		276			
28732792	Andreis17		Europe	2014	750		750			
22519709	Anquetil12		Asia	2010	79			79	GB	Same Rx
22842995	Antal3		Europe	NA	1064			1064		
24059291	Antoniadou14		Europe	2010	98		98		GB	Naive
25559593	Anworanich15		Asia	2011	120		120			
21087198	Anz11		Middle East/North Africa	2008	87		87		GB	Naive
31076722	Araujo19		Europe	2015	34		34		GB	Naive
25116676	Ariffin14		Asia	2012	26		26		GB	Naive
30304061	Arimide18		Sub-Saharan Africa	2012	67		67		GB	Naive
25712318	Armenia15		Europe	2010	120			120		
20055590	Arruda10		Latin America/Caribbean	2008	76		76		GB	Naive
20929346	Arruda11		Latin America/Caribbean	2008	74		74		GB	Naive

29504269	Arruda18		Latin America/Caribbean	2015	1566		1566		GB	Naive
23404192	Assoumou13		Europe	2009	506			506		
28333232	Assoumou17		Europe	2014	566			566		
30517632	Aulicino19		Latin America/Caribbean	2014	115	115			GB	Naive
20964489	Avi11		Europe	2008	145		145		GB	Naive
24025024	Avi14		Europe	2010	244		244		GB	Naive
23469241	Avidor13		Middle East/North Africa	2009	237		237		GB	Naive
22358416	Avila-Rios11		Latin America/Caribbean	2010	145		145			
22110765	Avila-Rios11		Latin America/Caribbean	2008	1648		1648		GB	Naive
25347163	Avila-Rios15		Latin America/Caribbean	2011	1084		1084			
26558396	Avila-Rios15		Latin America/Caribbean	2014	746		365	381		
27658867	Avila-Rios16		Latin America/Caribbean	2015	264		264			
30597094	Avila-Rios19		Latin America/Caribbean	2017	2006		2006			
23888308	Azam13		Asia	2011	102		43	59	GB	NA
24423716	Azam14		Asia	2010	54		54			
24142273	Azam14		Asia	2011	103		44	59	GB	HIVDB
25479241	Bvrtolo14		Sub-Saharan Africa	2009	140		140		GB	Naive
28521719	Babajide17		Sub-Saharan Africa	2012	35			35		
24740443	Baesi15		Middle East/North Africa	2011	100		30	70	GB	NA
20950147	Bansode11		Sub-Saharan Africa	2008	57		40	17	GB	NA
21995490	Bansode11		Sub-Saharan Africa	2007	75		65	65		
31273377	Barabo19		Sub-Saharan Africa	2017	158		47	111	GB	NA
27875905	Barral17		Latin America/Caribbean	NA	210		105	105	GB	NA
23744572	Barrow13		Latin America/Caribbean	2011	75		75		HIVDB	Same Rx
22297391	Barth12		Europe	NA	26		23	26		
23979153	Bartlett13		North America	NA	1			1		
27458715	Baudi17		Sub-Saharan Africa	2014	164		164		GB	Naive
25711326	Baxter15	START (NCT00867048)	Multiple	2012	1946		1946			
21857316	Bermudez-Aza11		Latin America/Caribbean	2009	143		99	44	GB	NA
24813637	Bertuccio14		Europe	NA	116			116		
23455469	Bessong13		Sub-Saharan Africa	2008	88		88		GB	Naive
22889300	Betancor12		Europe	2007	222		118	104	GB	NA
27697032	Bhusal16		Asia	2011	35		15	20	GB	HIVDB
23935858	Bila13		Sub-Saharan Africa	2007	265		265		GB	Naive
23991142	Billong13		Sub-Saharan Africa	2009	139		139	7	GB	HIVDB
24964358	Blanco15	SPIRAL (NCT00528892)	Europe	2009	74			74		
26240203	Boender15		Sub-Saharan Africa	2008	2579		2579		GB	Naive
27402780	Boender16		Sub-Saharan Africa	NA	32			32	GB	Same Rx
27342546	Boender16		Sub-Saharan Africa	2008	119	56		63	GB	HIVDB
27836020	Boerma16		Sub-Saharan Africa	2012	82	82			GB	Naive
26413848	Boillot16		Sub-Saharan Africa	2011	55			55	GB	Same Rx
23966745	Bonney13		Sub-Saharan Africa	2008	60		60			
25106410	Bonora14		Europe	2011	10			10		
21620998	Bontell12		Asia	2008	63		63		GB	Naive
20707733	Bonura10		Europe	2008	109		109		GB	Naive
26424460	Boyd15	Second-Line (NCT00931463)	Multiple	2010	129		72	129		
24091696	Bracho14		Europe	2009	41		41		GB	Naive
28494325	Bradley-Stewart17		Europe	2015	91		91		GB	Naive
21360548	Brenner11		North America	2009	244		220	24	GB	NA
27029845	Brenner16		North America	2015	2			2	GB	Same Rx

20950149	Brigido11		Latin America/Caribbean	2007	1270		230	1040	GB	NA
27291892	Brites16		Latin America/Caribbean	NA	1520			1520		
24171696	Brooks13		North America	2009	274		274		GB	Naive
27231099	Brooks16		Sub-Saharan Africa	2013	35			35	GB	HIVDB
25970260	Bruzzone15		Sub-Saharan Africa	2007	65		65		GB	Naive
26279669	Budambula15		Sub-Saharan Africa	2012	121		53	68	GB	NA
30714528	Budayanti18		Asia	2009	47		30	17	GB	HIVDB
22024527	Bunupuradah11		Asia	2009	225			225	HIVDB	HIVDB
25674767	Bure15		Asia	2010	46	46			GB	NA
23830355	Cahn13	Sailing (NCT01231516)	Multiple	2012	19			19		
28094565	Calva17		Latin America/Caribbean	2012	974			974		
23186249	Caplinskas13		FSU	2008	27		27		GB	Naive
21732793	Cardoso11		Latin America/Caribbean	2009	27			27	GB	NA
25397494	Carganico14		Europe	2013	1			1		
22433277	Caron12		Sub-Saharan Africa	2008	107		107		GB	Naive
21417758	Carvalho11		Latin America/Caribbean	2008	52		52		GB	Naive
25694526	Carvalho15		Europe	2008	289		289		GB	Naive
29077927	Castagna18		Europe	2010	12			16		
20929349	Castelbranco10		Sub-Saharan Africa	2008	35		35		GB	Naive
22358417	Castillo11		Latin America/Caribbean	2009	72	25	47			
22666853	Cavalcanti12		Latin America/Caribbean	2008	108		108			
25386009	Cavalcanti15		Latin America/Caribbean	2012	92			92	HIVDB	Same Rx
26034768	Cazave15		Europe	2013	5			5		
22431019	Ceccarelli12		Sub-Saharan Africa	2008	227		49	178		
20817922	Ceccherini-Silberstein10		Europe	NA	448		448			
31037930	Cecchini19		Latin America/Caribbean	2014	67			67		
25518712	Chabadova15		Europe	2010	144		144		GB	Naive
28222757	Chaillon17		Europe	2012	342		342		GB	Naive
26572102	Chakravarty15		Asia	2013	16			16	GB	NA
22158948	Chamberland12		Sub-Saharan Africa	2008	127		127		GB	Naive
20954831	Chan11		North America	2007	35		35			
31535044	Chan19		North America	2010	206		206			
27779200	Chang16		Asia	2010	1370		1307	66		
30601598	Chang18		Asia	2012	178		178		GB	Naive
20964479	Chaplin11		Sub-Saharan Africa	2007	338			338	GB	HIVDB
29084434	Chaplin18		Sub-Saharan Africa	2013	788			788	GB	NA
20160635	Charpentier10		Europe	2008	91		91			
20802293	Charpentier10	ANRS 139 TRIO (NCT00460382)	Europe	2007	14			14	GB	Same Rx
21555827	Charpentier11		Sub-Saharan Africa	2009	187		187		GB	Naive
20977359	Charpentier11		Sub-Saharan Africa	2008	75			75	GB	NA
21599597	Charpentier11		Sub-Saharan Africa	2010	69	69			HIVDB	HIVDB
22155917	Charpentier11		Sub-Saharan Africa	2009	77	77				
23749952	Charpentier13		Europe	2007	9586			9586		
25755001	Charpentier15	ANRS 139 TRIO (NCT00460382)	Europe	2008	80			80		
29091218	Charpentier17		Europe	NA	27			27		
20704495	Chaturbhuj10		Asia	2007	34		34		GB	Naive
30937190	Chauhan19		Asia	2015	37		37			
25976289	Chehadeh15		Middle East/North Africa	2013	30		30		GB	Naive
29212076	Chehadeh17		Middle East/North Africa	2016	53		53		GB	Naive
29506011	Chehadeh18		Middle East/North Africa	2014	42			42	GB	NA

30160141	Chehadeh18		Middle East/North Africa	2013	128		64	64	GB	NA
23270497	Chen12		Asia	2010	299		299		GB	Naive
23144953	Chen12		Asia	2009	157		63	94	GB	NA
24489829	Chen14		Asia	2012	129		129		GB	Naive
25207977	Chen14		Asia	2010	285		285		GB	Naive
26895182	Chen16		Asia	2013	29			29	GB	NA
27973597	Chen16		Middle East/North Africa	2014	36		36		GB	Naive
27574950	Chen17		Asia	2013	31		31		GB	Naive
28384058	Chen17	HPTN 061 (NCT00951249)	North America	2010	165		165		GB	Naive
29698467	Chen18		Asia	2014	179		179		GB	Naive
31018203	Chen18		Asia	2015	183		183		GB	Naive
29534773	Chen18		Asia	2014	271		271		GB	Naive
29892199	Cheng18		Asia	2013	71			71		
26414430	Cheriro15		Sub-Saharan Africa	2010	59		59		GB	Naive
21806486	Chibo11		Oceania	2008	209		209		GB	Naive
24522911	Chikata14		Asia	2009	363		363		GB	Naive
29435471	Chimbetete18		Sub-Saharan Africa	NA	86			86		
27894862	Chimukangara17		Multiple	2015	25			25	GB	HIVDB
30430843	Chimukangara19		Sub-Saharan Africa	2014	1845		1845			
20156103	Chin10		Asia	2007	76		76		GB	Naive
25826122	Chin15		Asia	2013	131		131		GB	Naive
27109046	Cho16		Asia	2011	37		37			
24680255	Choi14		Asia	2007	535			535		
27575746	Chow16		Sub-Saharan Africa	2013	154		154		GB	Naive
27058353	Chung16		Sub-Saharan Africa	2010	954		954			
28859436	Clutter17		North America	2010	61		61		GB	Naive
30569276	Coelho19		Latin America/Caribbean	2015	596		596		GB	Naive
29244809	Coetzee17		Sub-Saharan Africa	2016	119		95	24	GB	NA
27802846	Colby16		Asia	2011	229		229			
18650513	Cooper8	BENCHMARK-1 & -2 (NCT00293267; NCT00293254)	Multiple	2007	94		94	94		
28301548	Corado17		Latin America/Caribbean	2013	73		12	61	GB	NA
29140932	Corrigan18		Sub-Saharan Africa	2015	47	47				
27345268	Court16		Sub-Saharan Africa	2011	134			134		
26681241	Courtney16		Sub-Saharan Africa	2011	108		108		GB	Naive
24798614	Crawford14		Sub-Saharan Africa	2011	56			56		
31498798	Crispim19		Latin America/Caribbean	2015	227		227		GB	Naive
26899538	Crouzat16		North America	2009	143		143			
28198788	Crowell17		Sub-Saharan Africa	2011	120	120				
27742812	Cunningham17		Europe	2012	442		442		GB	Naive
28641707	D'Costa17		Oceania	2010	772		772			
21482490	d'Ettorre11		Europe	NA	40			40		
21790471	da12		Latin America/Caribbean	2008	49		49		GB	Naive
23968204	da13		Latin America/Caribbean	2011	87		87		GB	Naive
27091699	da16		Latin America/Caribbean	2011	305			305	GB	NA
29925490	Daar18	GS-US-380-1878 (NCT02603107)	Multiple	2016	7			7		
21663632	Dagnra11		Sub-Saharan Africa	2008	46			46	GB	Same Rx
27009561	Darcissac16		Latin America/Caribbean	2009	304		304		GB	Naive
26715861	Davanos15		Europe	2009	150		112	38		

28986714	Davarpah18		Middle East/North Africa	NA	59		29	30		
30134298	Davy-Mendez18		North America	2008	3682			3682		
21871090	de11		Europe	2010	98		98		GB	Naive
25249214	de14		Latin America/Caribbean	2009	329		329			
24359837	de14		Latin America/Caribbean	2011	69			69		
24112468	de14		North America	2011	47	47			GB	NA
29631420	De18		Europe	2014	341		48	179		
21366425	Dean11		Asia	2008	92		92		GB	Naive
29149197	deCamp17	HVTN 505 (NCT00865566)	North America	2012	47		47		GB	Naive
27392995	Delatorre17		Latin America/Caribbean	2013	87		87		GB	Naive
28325060	Delatorre17		Latin America/Caribbean	2014	140			140	GB	NA
26599410	Delgado15		Europe	2011	62		62		GB	Naive
22293432	Delwart12		North America	2007	319		319		GB	Naive
30380053	Derache19		Sub-Saharan Africa	2014	1287		1193	94		
30321314	Derache19	ANRS 12249 (NCT01509508)	Sub-Saharan Africa	2014	1148		1148		GB	Naive
20334569	Deshpande10		Asia	2009	27			27	GB	Same Rx
21453163	Deshpande11		Asia	2010	54		54		GB	Naive
20236364	Di10		Europe	NA	5011			5011		
22493752	Diallo12		Latin America/Caribbean	2007	76			76	GB	NA
25582324	Diallo15		Sub-Saharan Africa	2008	271		271		GB	Naive
26509441	Diaz15		Latin America/Caribbean	2009	7491			7491	GB	NA
19665910	DiazGrados10		Latin America/Caribbean	NA	180		103	77		
30535228	Dimeglio19		Europe	NA	489		489			
23620062	Dimonte13		Europe	NA	335		335			
27334566	Dinesha16		Asia	2014	167			167	GB	Same Rx
24122937	Diouara14		Sub-Saharan Africa	2008	52			52	GB	NA
25527333	Diouara14		Sub-Saharan Africa	2011	70			70	GB	Same Rx
20718620	Djoko10		Sub-Saharan Africa	2008	41		41		GB	Naive
20954909	Djoko11		Sub-Saharan Africa	2007	94		94		GB	Naive
23711895	Dolling13		Europe	NA	322			322		
30643108	Dong19		Asia	2013	5512			5512		
26529282	Dos16		Latin America/Caribbean	2014	97		97		GB	Naive
28797181	Dow17		Sub-Saharan Africa	2013	65	65			GB	Naive
26311843	Doyle15		Europe	2011	788		533	255	HIVDB	HIVDB
22544201	Duc12		Asia	2007	73		73		HIVDB	Naive
29428459	Dunn18	PIVOT (NCT01230580)	Europe	2008	3			3		
20180140	Dutta10		Asia	2008	44		27	17	GB	NA
22585715	Dvali12		North America	2007	153		126	27	GB	HIVDB
25879553	Dvali15		North America	2009	193			193		
31601544	Eholie19	ANRS 12269 (NCT02025868)	Sub-Saharan Africa	2014	175			175		
25333961	Ekici14		Multiple	2007	192		192			
21516199	Ekstrand11		Asia	NA	92			92		
21919803	EI12		Middle East/North Africa	2008	45			45	GB	NA
25397484	EI14		Europe	NA	306			306		
27402006	EI16		Europe	2009	36			36		
27856703	EI16		Europe	NA	386			386		
20453629	El-Khatib10		Sub-Saharan Africa	2008	139			139	GB	HIVDB
23044036	Elmi12		Sub-Saharan Africa	2009	35		19	16		
23225901	Eron13	VIKING (NCT00950859)	Multiple	2011	9			9		

31279073	Eron19	EMERALD (NCT02269917)	Multiple	2014	6			6		
27353350	Escoto-Delgadillo16		Latin America/Caribbean	2011	124		124		GB	Naive
28750647	Etta17		Sub-Saharan Africa	2014	35			35		
26270824	Fabeni15		Europe	2013	534		534		GB	Naive
29091206	Fabeni17		Europe	2010	4323		4323			
24318486	Fall-Malick14		Sub-Saharan Africa	2010	65			65	GB	NA
27974715	Farrokhi16		Middle East/North Africa	NA	78		28	50		
29026792	Farrokhi17		Middle East/North Africa	2014	29			29	GB	NA
31143232	Farrokhi19		Middle East/North Africa	2016	90		90			
28575385	Fearnhill17		FSU	2014	876		876			
20156105	Ferreira10		Latin America/Caribbean	2007	41	41			GB	Naive
21678433	Ferreira11		Latin America/Caribbean	2008	92		92		GB	Naive
28539254	Ferreira17		Latin America/Caribbean	2014	43		43			
28363087	Filho17		Latin America/Caribbean	2011	1300			1300		
30058269	Fily18		Sub-Saharan Africa	2016	70			70	GB	NA
20377427	Fish10		Sub-Saharan Africa	2009	73		73		GB	Naive
25894830	Flynn15		North America	NA	93			93		
23833185	Fofa13		Europe	NA	267		267			
24855120	Fofa14		Sub-Saharan Africa	2011	84			84		
21460326	Fogell11	PEPI-Malawi (NCT00115648)	Sub-Saharan Africa	2007	37	37			GB	Naive
21487249	Fogell11	PEPI-Malawi (NCT00115648)	Sub-Saharan Africa	2009	108	108			GB	Naive
23249916	Fogell13	HPTN 046 (NCT 00074412)	Sub-Saharan Africa	2011	38	38			GB	Naive
21817951	Fokam11		Sub-Saharan Africa	2009	92	92			GB	HIVDB
26602836	Fokam16		Sub-Saharan Africa	2014	53		53		GB	Naive
22695298	Fourati12		Asia	2011	601			601	GB	NA
25558077	Fourati15		Europe	NA	502			502		
25885327	Frange15		Europe	2009	1318		1318			
29846602	Frange18		Europe	2011	84	84				
25037229	Franzetti14		Europe	2008	5246			5246		
23551870	Frentz13		Europe	2007	1630		1630		GB	Naive
29933437	Fulcher18		North America	NA	1			1		
21260991	Gafarova10		FSU	2007	43		43		GB	Same Rx
29977967	Gagliardini18		Europe	NA	8			8		
28867497	Gallant17	GS-US-380-1489 (NCT02607930)	Multiple	2015	5			5		
21326075	Gallien11	ANRS 138-Easier (NCT00454337)	Europe	2008	39			39		
25397497	Garcia-Diaz14		Europe	NA	107		107			
28961972	Garcia-Morales17		Latin America/Caribbean	2012	1947		1947			
20007331	Garrido10		Europe	2007	418		418		GB	Naive
21439330	Garrido11		Europe	2008	638		535	103		
22450969	Garrido12		Europe	2009	61		21	40	GB	HIVDB
21457126	Garrido12		Europe	2008	89			89	GB	Same Rx
25738513	Gashnikova15		FSU	2014	46		46		GB	Naive
27957489	Gashnikova16		FSU	2015	71		71		GB	Naive
27761744	Gashnikova17		FSU	2015	50		50		GB	Naive
22850992	Gaspareto12		Latin America/Caribbean	2009	49		49		GB	Naive
25397540	Gazaignes14		Europe	2012	7			7		
26566057	Gazaignes16		Europe	2012	9			9		
24284781	Geretti14		Multiple	2009	193		193			

19933171	Germaud10		Sub-Saharan Africa	2007	30	30			HIVDB	Same Rx	
28589513	Ghafari17		Middle East/North Africa	2013	52		52		GB	Naive	
21632754	Gianella11		North America	NA	32		32				
29202874	Gibson17		Sub-Saharan Africa	NA	262			262			
31751433	Gill19		Asia	2014	61			61			
20166821	Gingelmaier10		Europe	2007	40			40			
27279571	Girard17	PROTEA (NCT01448707)	Europe	2014	3			3			
31860167	Giron-Callejas19		Sub-Saharan Africa	2016	638		171	467			
21457055	Goldsamt11		North America	2007	347		31	316	GB	NA	
28795954	Golmohammadi17		Middle East/North Africa	2013	122			122			
21037251	Gonzalez11		Europe	2007	56			56			
29309418	Gonzalez-Domenech18		Europe	2016	57			57	GB	Naive	
21157296	Goodman11		North America	NA	476			476			
30695102	Gopalan19		Asia	2012	97	97			GB	NA	
21622023	Graf11		Latin America/Caribbean	2008	82			82	GB	Naive	
21819257	Green11		Sub-Saharan Africa	2008	94	94			GB	HIVDB	
22906365	Grgic13		Europe	2007	119			119	GB	Naive	
27342228	Guichet16	2LADY (NCT00928187)	Sub-Saharan Africa	2011	446			446	GB	Same Rx	
25826640	Guimaraes15		Latin America/Caribbean	2013	217			217	GB	Naive	
25879488	Guo15		Asia	2010	130			130	GB	Naive	
28407682	Guo17		Asia	2015	93			93			
25256391	Gupta14	CASTLE (NCT00272779)	Multiple	2007	204			204			
23372110	Gutierrez13		Europe	2008	83			83			
25956162	Hachiya15		Asia	2013	577			531	46	GB	HIVDB
20146734	Haidara10		Sub-Saharan Africa	2007	101			101			
20585262	Hamers10		Sub-Saharan Africa	2008	548			548	GB	Naive	
21802367	Hamers11		Sub-Saharan Africa	2008	2474			2474	GB	Naive	
22474222	Hamers12		Sub-Saharan Africa	2009	149			149	GB	HIVDB	
22049946	Hamilton12		Latin America/Caribbean	2009	92			71	21	GB	NA
20610954	Hamkar10		Middle East/North Africa	2009	42			42	GB	NA	
20104106	Han10		Asia	2007	84			84	GB	Naive	
26018591	Han15		Asia	2010	30			20	9	GB	NA
30944175	Hanke19		Europe	2013	183			183	GB	Naive	
28325065	Hao17		Asia	2015	237			237	GB	Naive	
25281399	Hardy15		North America	2011	1			1			
22900472	Hassan13		Sub-Saharan Africa	2008	211			211	GB	Naive	
24456757	Hassan14		Sub-Saharan Africa	2010	55			55	GB	Same Rx	
30562356	Hassan18		Sub-Saharan Africa	2010	97			97	GB	Naive	
30759103	Hassan19		Sub-Saharan Africa	2009	50			50	9	GB	NA
20300008	Hatano10		North America	2007	29			29	GB	HIVDB	
20692295	Hattori10		Asia	2007	1934			1934	GB	Naive	
26428230	Hattori16		Asia	2010	2205			2205	GB	Naive	
26469189	Hauser15		Sub-Saharan Africa	2008	30			30			
28105988	Hauser17		Europe	2013	809			809			
30408827	Hauser18		Europe	2014	1885			1885	GB	Naive	
27076106	Hawkins16	TOV3 (NCT00383669)	Sub-Saharan Africa	2007	149			43	106	GB	NA
27330069	Hayashida16		Asia	2013	6			6			
29620931	Herndez-Sanchez18		Latin America/Caribbean	2013	51			51		GB	Naive
21185530	Hightow-Weidman11		North America	2007	145			145			

27468776	Hobbs15		Oceania	2009	210		210			
24789308	Hodcroft14		Europe	NA	8483		8483		GB	Naive
26967154	Hoenigl16		Europe	2011	259		259		GB	Naive
23751421	Hoffmann13		Sub-Saharan Africa	2010	40			40	GB	Same Rx
28329390	Hofstra17		Latin America/Caribbean	2012	104		104			
21326132	Holguin11		Latin America/Caribbean	2010	80	80			GB	NA
23782115	Holguin13		Latin America/Caribbean	2010	88		88		GB	Naive
25564107	Hong15		Sub-Saharan Africa	2009	398		384	14		
26077516	Hou15		Asia	2012	419		106	313		
22096044	Hsieh11		Asia	2007	53			53		
24831493	Hua15		Asia	2009	447		447			
21840743	Huaman11		North America	2007	133		133			
21770741	Hue11		Sub-Saharan Africa	2008	153		121	32	GB	HIVDB
31125356	Huik19		Europe	2013	209		209		GB	Naive
22544199	Hunt12		Sub-Saharan Africa	2008	345		345		GB	Naive
28981637	Hunt17		Sub-Saharan Africa	2013	115			115	HIVDB	HIVDB
31526373	Hunt19		Sub-Saharan Africa	2011	220	220			GB	Naive
25649964	Huruy15		Sub-Saharan Africa	2010	83		83		GB	Naive
30286160	Huruy18		Sub-Saharan Africa	2010	41		41		GB	Naive
29264355	Ikomey17		Sub-Saharan Africa	2015	55	55				
24164431	Imade14		Sub-Saharan Africa	2011	34		34		GB	Naive
29732988	Indriati18		Asia	2014	60		7	53	GB	NA
29462322	Inzaule18		Sub-Saharan Africa	2008	425		425		GB	Naive
28961680	Inzaule18		Sub-Saharan Africa	2014	430	430			GB	Naive
30560686	Irias19		Latin America/Caribbean	2016	41		41		GB	Naive
22189822	Iweriebor12		Sub-Saharan Africa	2007	47		47		GB	Naive
24609015	Jacobs14		Sub-Saharan Africa	2009	84		58	26	GB	NA
28088769	Jaffre17		Europe	2014	92		92			
29244859	Jagdagsuren17		Asia	2014	123		123		GB	Naive
23626742	Jahanbakhsh13		Middle East/North Africa	2010	47		47		GB	Naive
20085464	Jakobsen10		Europe	2009	61		61			
20844809	Jamjoom10		Middle East/North Africa	2007	63			63		
30229661	Jeong19		Asia	2016	99		58	9	GB	NA
30044302	Jespersen18	PIONA (NCT01192035)	Sub-Saharan Africa	2012	56			56	GB	NA
25006240	Jeulin14		Europe	2012	238		127	111		
20174661	Ji10		North America	NA	96		96			
21900719	Ji11		Latin America/Caribbean	NA	48		48			
31228958	Jia19		Asia	2015	409		409		GB	Naive
25141905	Jiamsakul14		Asia	2009	105			105	GB	HIVDB
25685169	Jiamsakul15		Asia	2008	28		28		GB	Naive
21041915	Johannessen10		Sub-Saharan Africa	2007	34			34		
21115444	Johannessen11		Sub-Saharan Africa	NA	36			36		
23943851	Johnston14		Sub-Saharan Africa	2008	127			127	GB	NA
29020335	Jordan17		Sub-Saharan Africa	2012	1450	1450				
20578518	Jullaksorn10		Asia	2008	39		17	22	GB	NA
26700639	Kaleebu15		Sub-Saharan Africa	2012	474		425	35	HIVDB	HIVDB
20350879	Kanizsai10		Europe	NA	56		56			
26296335	Kanngai15		Asia	2012	127		127		GB	Naive
30134290	Kantor18		Sub-Saharan Africa	2011	105			105		
21235402	Kao11		Asia	2009	381		381		GB	Naive

26573132	Karade16		Asia	2014	52		52		GB	Naive
27631260	Karade16		Asia	2014	80			80	GB	NA
28763465	Karade17		Asia	2016	75			75	GB	NA
30793915	Karade19		Asia	2018	58		58		GB	Naive
29587492	Karamov18		FSU	2015	62		62		GB	Naive
29905958	Karkashadze19		Europe	2015	120			447	GB	NA
22448246	Karlsson12		Europe	2007	208		208		GB	Naive
21886779	Kasang11		Sub-Saharan Africa	2008	86		86		GB	Naive
27287235	Katlama16		Europe	2014	3			3		
24773167	Kazenova15		FSU	2011	201		152	56	GB	NA
28443684	Kazenova17		FSU	2014	143		143		GB	Naive
22860571	Kebe13		Sub-Saharan Africa	2009	52	52			GB	Same Rx
24439027	Kebe14		Sub-Saharan Africa	NA	25	25				
25348045	Khairunisa15		Asia	2014	66			66	GB	Same Rx
29589465	Khairunisa18		Asia	2017	43			43	GB	NA
31117863	Khan19		Asia	2014	50			50		
26828876	Kiertiburakul16		Asia	2015	265		265		GB	Naive
23826076	Kiertiburanakul13		Asia	2009	1798		1798		GB	Naive
20946407	Kim11		Asia	2007	75		75		GB	Naive
23952717	Kim13		Asia	2011	84		50	34	GB	HIVDB
29915524	Kim18		Asia	2014	106		106			
30305354	Kinloch19		Sub-Saharan Africa	2015	341		341		GB	Naive
30061964	Kinyua18		Sub-Saharan Africa	2012	382			190	GB	NA
26723018	Kityo16		Sub-Saharan Africa	2010	330	279			GB	Naive
28129253	Kityo17	EARNEST (NCT00988039)	Sub-Saharan Africa	2011	787			787	GB	NA
28673027	Kityo17		Sub-Saharan Africa	2010	278	278			GB	NA
30513108	Kityo18	REALITY (NCT01825031)	Sub-Saharan Africa	2014	120		87	120		
27999036	Kletenkov17		Europe	2008	515			515		
24473489	Kleyn14		North America	2009	428		428			
25487529	Koigi14		Sub-Saharan Africa	2013	60			60	GB	NA
25259833	Kolomeets14		FSU	2012	193			193	GB	HIVDB
23365432	Kondo13		Asia	2007	477		477		GB	Naive
26617663	Konou15		Sub-Saharan Africa	2012	67			65	GB	NA
26558549	Konou15		Sub-Saharan Africa	2012	173			173	GB	NA
27235597	Konou16		Sub-Saharan Africa	2013	79		79		GB	Naive
29684083	Kostrikis18		Europe	2011	100		82	18	GB	NA
24328535	Kotaki14		Asia	2012	43		43		GB	Naive
28561075	Kotaki15		Asia	2013	58		58		GB	Naive
31361272	Kouamou19		Sub-Saharan Africa	2017	159			159	GB	HIVDB
26137563	Kouri15		Latin America/Caribbean	2008	92		92		GB	Naive
21453134	Kousiappa11		Europe	2008	74		74		GB	Naive
21900725	Kozall11		Middle East/North Africa	NA	411		411			
30096068	Kroon18		Asia	2014	439		439		GB	Naive
24785949	Kuhn14		Sub-Saharan Africa	2011	230	230			GB	Naive
25350960	Kulkarni14	GS-US-236-0103 (NCT01106586)	Multiple	2010	708		708	40		
28891788	Kulkarni17	WAVES (NCT01705574)	Multiple	2014	575		575	39		
24387706	Kumar14		Asia	2010	27	27			GB	Naive
25845390	Lagal5		FSU	2009	78		67	11	GB	HIVDB
26404079	Lai16		Asia	2010	440		440			

27033350	Lakhikumar16		Asia	2012	110			110		
27346600	Lam16	Second-Line (NCT00931463)	Multiple	2011	491			491	GB	HIVDB
22396434	Lambert-Niclot12	Monoi (NCT00421551)	Europe	2009	9			9		
22733652	Lambert-Niclot12		Europe	2008	72			72		
23361642	Lambert-Niclot13		Europe	2009	1729		1729			
24302653	Lambert-Niclot14		Europe	2010	4731			4731		
26702926	Lambert-Niclot16	NEAT 001/ANRS143 (NCT01066962)	Europe	2011	110		110	110		
24873898	Lapovok14		Asia	2012	166		166		GB	Naive
28814231	Lapovok17		FSU	2009	502		275		GB	Naive
22355307	Lataillade12	CASTLE (NCT00272779)	Multiple	2007	36			36		
21311113	Lathouwers11	Artemis (NCT00258557)	Multiple	2007	689		689	77		
23558157	Lathouwers13	ODIN (NCT00524368)	Multiple	2009	102			102		
28146591	Lavu17		Oceania	2013	122		122		GB	Naive
22039450	Lazaro11		Asia	2008	105		105		GB	Naive
22431018	Le12		Asia	2009	126		104	22		
30863382	Lebedev19		FSU	2014	896			896	GB	NA
30793914	Ledwaba19		Sub-Saharan Africa	2007	2225		1109	257	GB	NA
24960249	Lee14		Sub-Saharan Africa	2007	572		572		GB	Naive
25171915	Lel14		Sub-Saharan Africa	2011	53	53			GB	Naive
25285539	Lennox14	ACTG A5257 (NCT 00811954)	North America	2009	295		294	239	HIVDB	HIVDB
28375875	Lepik17		North America	2015	14			14		
22427821	Levison12		Sub-Saharan Africa	2007	33			33		
23144802	Li12		Asia	2007	451		97	354	GB	NA
23121221	Li13		Asia	2009	76		76		GB	Naive
23341369	Li13		Asia	2009	211		211		GB	Naive
24098398	Li13		Asia	2009	1159		1159			
23788482	Li13		Asia	NA	803		542	261		
24009694	Li13		Asia	2010	609		94	515		
23800338	Li14		Asia	2009	98		98		GB	Naive
24994115	Li14		Asia	2012	216		216			
25560398	Li15		Asia	2009	284		284		GB	Naive
25501612	Li15		Asia	2009	444		444			
26577039	Li15		Asia	2010	1205		1205		GB	Naive
26121491	Li15		Asia	2012	1265		1265		GB	Naive
26381060	Li16		Asia	2009	118		118		GB	Naive
27698457	Li16		Asia	2011	1152		1152			
27782811	Li16		Asia	2009	478		478		GB	Naive
26990626	Li16		North America	2010	1070		1070			
28795354	Li17		Asia	2015	120		100	20	GB	HIVDB
30150680	Li18		Asia	2013	229		229		GB	Naive
30621727	Li19		Asia	2012	88			88		
26108001	Librelotto16		Latin America/Caribbean	2011	149		40	109	GB	NA
27037910	Lima16		Latin America/Caribbean	2010	95		95		GB	Naive
27218259	Lima16		Latin America/Caribbean	2008	167		167		GB	Naive
27381205	Lima16		Latin America/Caribbean	2009	192		96	96	GB	NA
29373694	Lima18		Latin America/Caribbean	2010	651			651		
26038447	Lin13		Asia	2011	122		122		GB	Naive

31491787	Liu19		Asia	2016	358		358			
22719231	Lockman12	OCTANE A5208 (NCT00089505)	Sub-Saharan Africa	2007	38			38	HIVDB	HIVDB
26543866	Lopes15		Latin America/Caribbean	2009	377			377		
26703695	Lopez16		North America	2007	945			945	GB	NA
26872331	Lopez-Cortes16		Europe	2011	158			158		
24946849	Loubet14		Sub-Saharan Africa	2013	211		211		GB	Naive
25698771	Loubet15		Sub-Saharan Africa	2013	66			66		
30640198	Louis19		Latin America/Caribbean	2013	304	304				
26200883	Lu15		Asia	2013	48		48		GB	Naive
28114955	Lu17		Asia	2012	332		118	214		
27750023	Lu17		Asia	2013	145		145		GB	Naive
28946751	Lu18		Asia	2013	317		317		GB	Naive
31595767	Lu19		Asia	2018	138		138		GB	Naive
22573849	Luebbert12		Sub-Saharan Africa	2009	32			32	HIVDB	Same Rx
26599538	Luk15		Sub-Saharan Africa	2007	25		25		GB	Naive
22860694	Lur13		Europe	2008	145		145		GB	Naive
29698470	Lur18		Europe	2014	168		168		GB	Naive
30682549	Lur19		Europe	2009	353		353		GB	Naive
22264071	Luu12		Asia	2008	56		56		GB	Naive
22985307	Machado13		Latin America/Caribbean	2010	199		199		GB	Naive
28403828	Machado17		Latin America/Caribbean	2007	34			34		
31479466	Machado19		Latin America/Caribbean	2017	141		141		GB	Naive
28562612	Machnowska17		Sub-Saharan Africa	2013	49			49		
30650082	Machnowska19		Europe	2012	2052		2052		GB	Naive
22888273	Maiga12		Sub-Saharan Africa	NA	93			93		
22823755	Maiga13		Sub-Saharan Africa	2010	51		51			
28010730	Makoola16		Sub-Saharan Africa	2013	110			110		
21474479	Malet11		Europe	NA	734		650	84		
26205139	Malet15		Europe	2011	1			1		
23724311	Mamadou11		Sub-Saharan Africa	2009	96		96			
22251009	Manasa11		Sub-Saharan Africa	2010	71		71		GB	Naive
25865972	Mani15		Asia	2010	53			53	GB	NA
22180722	Manolescu11		Europe	2007	38			38	GB	NA
20507208	Manosuthi10		Asia	2007	134			134	HIVDB	HIVDB
23161095	Manosuthi13		Asia	2010	330		330			
19901096	Marcelin10		Europe	NA	243			243		
22267476	Marcelin12		Europe	NA	42			42		
23562640	Marcelin13		Europe	NA	63			63		
27873586	Marcelin14		Europe	NA	416			416		
30789205	Marcelin19		Europe	2015	674			674	HIVDB	HIVDB
29627709	Margot18	GS-US-292-0104 (NCT01780506); GS-US-292-0111 (NCT01797445)	Multiple	2013	1733		1733	44		
31389026	Margot19		Multiple	2013	1820		1820		GB	Naive
27992788	Mariro17		Europe	NA	19			19		
28959068	Martin-Odoom17		Sub-Saharan Africa	NA	26		26			
30223845	Martin-Odoom18		Sub-Saharan Africa	2011	116			116		
23991055	Masa13		Sub-Saharan Africa	2011	222			222	GB	HIVDB
27002368	Masa16		Sub-Saharan Africa	2011	701		701			
23806135	Masimba13		Sub-Saharan Africa	2007	226		226		GB	Naive

24629078	Mata-Munguia14		Latin America/Caribbean	2008	151		22	129	GB	NA
28969448	Matsuda18		Latin America/Caribbean	2014	319			319	GB	NA
31518723	Mazzuti19		Europe	2011	668		668			
30309385	Mbange18		Sub-Saharan Africa	2015	85		85		GB	Naive
30534981	Mbisa18		Europe	2012	835		835		GB	Naive
29635462	Mbunkah18		Sub-Saharan Africa	2015	289		289			
21963935	McConnell11		Europe	2009	41			41		
25397492	McFaul14		Europe	2012	1705		1705			
31112033	Megasari19		Asia	2017	48			48	GB	NA
31699942	Megasari19		Asia	2018	38		38		GB	Naive
25492218	Meini15		Sub-Saharan Africa	2008	81	81			GB	NA
26628902	Meintjes15		Sub-Saharan Africa	2009	152			152		
24920768	Meixenberger14		Europe	2008	2203		2203		GB	Naive
29255731	Meloni17		Sub-Saharan Africa	2017	191			191	GB	NA
25962088	Memarnejadian15		Middle East/North Africa	2011	40		40		GB	Naive
28983848	Memarnejadian18		Middle East/North Africa	2016	41		41		GB	Naive
31311021	Memarnejadian19		Middle East/North Africa	2016	44			44	GB	NA
27119150	Mendoza16		Latin America/Caribbean	2010	717		250	467	GB	NA
22966822	Menezes13		North America	2008	367		38	329		
28991024	Menza17		North America	2013	2784		2784			
24589279	Meresse14	Stratall ANRS12110 (NCT00301561)	Sub-Saharan Africa	2008	45			45		
31751428	Meriki19		Sub-Saharan Africa	2011	239		169	70		
23797690	Messou13		Sub-Saharan Africa	2007	398			398		
25036184	Metzner14		Europe	2010	208			208		
21453184	Mezei11		Europe	2010	30		30		GB	Naive
25867913	Mills15	GS-US-299-0102 (NCT01565850)	North America	2013	153		153	5		
30946148	Milne19		Sub-Saharan Africa	2009	170			170	GB	NA
22145994	Miri12		Middle East/North Africa	2007	162		162		GB	Naive
26801790	Misbah16		Asia	2011	102		37	65	GB	NA
30461149	Modica19		Europe	2013	462			462		
30861512	Mohraz18		Middle East/North Africa	2015	38			38		
22015077	Molina12	GS-US-183-0145 (NCT00708162)	Multiple	2010	167		143	167	HIVDB	HIVDB
29925489	Molina18	GS-US-380-1844 (NCT02603120)	Multiple	2016	5			5		
31740348	Molina19	DRIVE- FORWARD (NCT02275780); DRIVE-AHEAD (NCT02403674)	Multiple	2016	7			7		
23016666	Monge12		Europe	2008	1864		1864			
24637804	Monge14		Europe	2009	2781		2781			
22236055	Monleau12		Multiple	2007	97		97		GB	Naive
27842871	Montag15		Europe	2008	1730		803	927		
21087197	Monteiro-Cunha11		Latin America/Caribbean	2007	58		10	48	GB	NA
21258105	Moorthy11	NEVEREST (NCT01146873)	Sub-Saharan Africa	2010	124	124				
28799325	Mosco17		Middle East/North Africa	2007	80		80			
28272247	Mossoro-Kpindel17		Sub-Saharan Africa	2011	58	58			GB	NA
25649362	Moura15		Latin America/Caribbean	2012	89		89		GB	Naive
25411830	Moura15		Latin America/Caribbean	2012	106		106		GB	Naive
30946161	Moyo19		Sub-Saharan Africa	2015	1207		1069	138		

21107269	Mueller11		Europe	NA	38		2	36		
24655349	Mulu14		Sub-Saharan Africa	2009	156		156		GB	Naive
26626277	Mulu15		Sub-Saharan Africa	2008	43		43		GB	Naive
22930496	Murillo12		Latin America/Caribbean	2008	119		119		GB	Naive
23308370	Musiime13		Sub-Saharan Africa	2007	142	142				
26458150	Mutagoma16		Sub-Saharan Africa	2011	57		57			
25239368	Mutsvangwa14		Sub-Saharan Africa	2010	38	38			GB	Naive
24352189	Mutwa14		Sub-Saharan Africa	2010	52	57				
21857282	Muwonga11		Sub-Saharan Africa	2008	950		283	93		
24635391	Muyldermans14		Europe	2008	1055		1055			
21851324	Myers12		Latin America/Caribbean	2008	103		103		GB	Naive
26866979	Naeger16	VIKING-4 (NCT01568892)	North America	2013	6			6		
26562173	Ndahimala16		Sub-Saharan Africa	2012	30			30	GB	Same Rx
27125473	Ndahimana16		Sub-Saharan Africa	2011	70			70	GB	Same Rx
29353487	Ndashimye18		Sub-Saharan Africa	2015	410		366	330	GB	HIVDB
21399479	Ndembi11		Sub-Saharan Africa	2009	70		70		GB	Naive
23742654	Ndiaye13		Sub-Saharan Africa	2007	60		60		GB	Naive
28298145	Negi17		Asia	2015	40			40	GB	NA
26186128	Nelson15		North America	2007	78	78			GB	Naive
21453185	Neogi11		Asia	2010	39		39		GB	Naive
21505320	Neogi11		Asia	NA	92			92		
23443042	Neogi13		Asia	2010	88		56	32	GB	NA
24699043	Neogi14		Asia	2011	297		297		HIVDB	Naive
26518047	Neogi16		Multiple	NA	19713		5963	13750		
26413747	Neogi16		Sub-Saharan Africa	2013	384			384	GB	HIVDB
31001987	Nesakumar19		Asia	2011	52		52		GB	Naive
24929754	Newman14		Sub-Saharan Africa	2013	300			300		
28034359	nfack16		Sub-Saharan Africa	2009	66		18	48	GB	NA
28659324	nfack17		Sub-Saharan Africa	2011	61		61		GB	Naive
21235306	Ng11		Asia	2008	199		199		GB	Naive
23840653	Ng13		Asia	2009	459		459		GB	Naive
29117130	Ngcapu17		Sub-Saharan Africa	2008	140		28	112		
28745207	Ngo-Malabo17		Sub-Saharan Africa	2015	167			103	GB	NA
29873733	Nguyen18		Europe	2015	134			134	GB	HIVDB
22818969	Nicot12		Europe	2007	27		27			
25542465	Nicot15		Europe	2009	131		131			
25369079	Niculescu14		FSU	2012	138		138		GB	Naive
23977189	Nii-Trebi13		Sub-Saharan Africa	2009	101		69	30	GB	HIVDB
24358257	Nishizawa13		Asia	2008	149		149			
21094281	Nouhin11		Asia	2007	49		49		GB	Naive
24404149	Nunes14		Latin America/Caribbean	2009	47			47	GB	NA
21957668	Nwobegahay11		Sub-Saharan Africa	2008	54		54		GB	Naive
21837878	Nwobegahay11		Sub-Saharan Africa	2008	58		58		GB	Naive
23080485	Nwobegahay12		Sub-Saharan Africa	2008	81		81		GB	Naive
25397501	Obermeier14		Europe	2010	220			220		
22497664	Oliveira12		Sub-Saharan Africa	2010	57		57		GB	Naive
26244386	Olson15	IMPAACT P1032 (NCT00109 590)	Asia	2007	50			50		
31257432	Omooja19		Sub-Saharan Africa	2016	97			97	GB	NA
24127302	Ong14		Asia	2009	100		100		GB	Naive
31889319	Onoriode19		Sub-Saharan Africa	2016	48		48		GB	Naive

26401720	Onsongo16		Sub-Saharan Africa	2012	63		63		GB	Naive
28178281	Onywera17		Sub-Saharan Africa	2012	87		87		GB	Naive
31833849	Orkin20	AMBER (NCT02431247)	Multiple	2014	725		725	17		
31754119	Oroz19		Europe	2015	404		404		GB	Naive
27897226	Otecko16		Sub-Saharan Africa	2008	100		100		GB	Naive
20954462	Oumar10		Europe	2007	61			61		
23138836	Oyomopito13		Asia	2008	1105		1105		GB	Naive
29293156	Palumbo18	HPTN 052 (NCT00074581)	Multiple	2011	211			211	GB	NA
20860532	Pando11		Latin America/Caribbean	2007	214		214			
24892582	Paolucci14		Europe	2008	61		61		GB	Naive
20509797	Papathasopoulos10		Sub-Saharan Africa	2007	36		36		GB	Naive
29016621	Paraschiv17		FSU	2014	86		86		GB	Naive
25397487	Paraskevis14		Europe	2008	2499		2499			
29137167	Paraskevis17		Europe	2009	3428		3428			
21739439	Parboosing11		Sub-Saharan Africa	2009	56		56		GB	Naive
23259737	Parczewski12		Europe	2010	92		80	12	GB	HIVDB
25397498	Parczewski14		Europe	2010	833		833			
25248322	Parczewski15		Europe	2012	837		837		GB	Naive
26851192	Parczewski16		Europe	2010	1219		998	221	GB	NA
28017912	Parczewski17		Europe	2012	172		172			
23585827	Parikh13		Sub-Saharan Africa	2010	352		352			
27873613	Parisi13		Europe	2008	1882		1882			
25397557	Pasquau14		Europe	NA	33			33		
28152089	Patino-Galindo17		Europe	2009	1806		1806		Fasta file	Naive
30924679	Pei19		Asia	2018	84			84	GB	NA
27895013	Penrose17		Sub-Saharan Africa	NA	112		12	100		
29566538	Penrose18		Sub-Saharan Africa	NA	112		12	100		
21942692	Pere12		Sub-Saharan Africa	2009	34			34	GB	Same Rx
23416260	Perez13		Latin America/Caribbean	2007	401		401			
28002469	Perez-Parra16		Europe	2008	50		50		GB	Naive
29084239	Perez-Parra17		Europe	2008	693		693		GB	Naive
29077926	Perrier18		Europe	2014	110		110			
30768160	Perrier19		Europe	2014	19			19		
25401747	Pessoa14		Latin America/Caribbean	2010	26		26		GB	Naive
25413141	Pessoa15		Latin America/Caribbean	2010	43		43		GB	Naive
27031505	Pessoa16		Latin America/Caribbean	2010	198		198		GB	Naive
28953964	Pessoa17		Latin America/Caribbean	NA	128		128			
30401010	Petersen18		Europe	2010	1815		1815			
23372113	Pham13		Asia	2008	87			87		
25970090	Pham15		Asia	2012	61		61		GB	Naive
25332224	Pham16		Asia	2010	86	86			GB	Same Rx
20156106	Phan10		Asia	2008	184		184		GB	Naive
21970343	Phuphuakrat12		Asia	2010	118		108			
24444369	Pillay14		Sub-Saharan Africa	2012	89	89			GB	NA
29791608	Pimenta18		Latin America/Caribbean	2010	38		18	20	GB	HIVDB
28474534	Pinto17		Oceania	2008	6901		3299	349		
21453487	Piralla11		Europe	2008	95		41			
22697883	Pircher12		Sub-Saharan Africa	2011	100		41	57	GB	HIVDB
28746086	Poppe17		Sub-Saharan Africa	2011	219	219				

25777187	Porter15	GS-US-264-0110 (NCT01309243)	North America	2011	33			33		
27400403	Pouran16		Europe	2008	1159		1159		GB	Naive
20057310	Poveda10		Europe	NA	1343			1343		
24908550	Pozniak14	STRATEGY- NNRTI (NCT01495702)	Multiple	2012	2			2		
21449850	Praparattanapan11		Asia	2010	420		295	125	GB	NA
22299468	Praparattanapan11		Asia	2008	59			59		
27355415	Prasitsuebsai16	TASER-P (NCT01788891)	Asia	2011	48	48				
21091377	Price11		Sub-Saharan Africa	2008	408		408		GB	Naive
22380531	Pulido12	Monet (NCT00458302)	Europe	2008	54			54		
23869225	Qi13		Asia	2008	65		65		GB	Naive
24074642	Raffi13	SPRING-2 (NCT01227824)	Multiple	2010	30		30	30		
29546333	Ragonnet-Cronin18		Europe	2015	104		104		GB	Naive
21149999	Rajesh10		Asia	2007	26			26		
26122980	Ramkissoon15		Latin America/Caribbean	2010	40	40			GB	HIVDB
20704494	Rangel10		Latin America/Caribbean	2009	57		24		GB	Naive
30555720	Rasmussen18		Sub-Saharan Africa	2011	212		212		GB	Naive
24069209	Rawizza13		Sub-Saharan Africa	2010	61			61	GB	Same Rx
29244143	Raymond18		Europe	2013	541		541			
22615779	Recordon-Pinson12		Asia	2010	45		18	27	GB	NA
23184711	Reigadas13		Europe	2008	590		590		GB	Naive
26746222	Reinheimer16		Europe	2009	4509			4509		
24037943	Reis14		Latin America/Caribbean	2009	98			98	GB	NA
29091580	Ren17		Asia	2016	88			88	GB	NA
22443282	Reynolds12		Sub-Saharan Africa	2007	42			42	GB	HIVDB
23270482	Reynolds12		Sub-Saharan Africa	2008	109			109	GB	Same Rx
28365230	Rheel17		North America	2012	2873			2873	GB	Same Rx
29846534	Rheel19		North America	2011	4253		4253		HIVDB	Naive
23714781	Rimsky13	ECHO(NCT00540 449); THRIVE (NCT00543725)	Multiple	2009	128		128	128		
26267615	Robineau15		Europe	2010	547		547			
24093951	Rodriguez-Rodrigues13		Latin America/Caribbean	2010	152		152			
27021341	Rojas16		Europe	NA	1			1		
28991889	Rojas18		Europe	2009	240	240			GB	NA
25273080	Rokx15		Europe	2008	88			88	GB	Same Rx
20380480	Ross10		North America	NA	106		106			
24586911	Ross14		North America	2007	690		690		GB	Naive
29932313	Rossetti18		Europe	2011	3573		3573			
23458243	Rossi13		Latin America/Caribbean	2009	201	201			GB	NA
24838991	Rossotti14		Europe	NA	8067		1914	6153		
22412066	Rottinghaus12		Sub-Saharan Africa	2008	25			25		
25303690	Rottinghaus14		Sub-Saharan Africa	2010	26			26	GB	NA
29211835	Rouet17		Asia	2014	209		209		GB	Naive
20868414	Ruan10		Asia	2007	38			38		
25585528	Ruane15	INROADS (NCT01199939)	North America	2011	2			2		
30165451	Rudovick18		Sub-Saharan Africa	2013	235		235		GB	Naive
23621421	Rusconi13		Europe	NA	2854			2854		
29957545	Rusconi18		Europe	NA	89			89		

22905148	Rusine12		Sub-Saharan Africa	2008	138		138			
23950859	Rusine13		Sub-Saharan Africa	2008	109		109	8	GB	HIVDB
28149058	Sachithandham16		Asia	2013	102		102		GB	Naive
26892382	Saeng-Aroon16		Asia	2008	158		158		GB	Naive
28569550	SahBandar17		Asia	2013	109		109		GB	Naive
21990611	Saini12		Asia	2007	33			33	GB	NA
26192603	Salimo15		Sub-Saharan Africa	2014	232	232				
27125320	Saloul6		Sub-Saharan Africa	2014	125	125			GB	NA
27167115	Saloul6		Sub-Saharan Africa	2012	201	201			GB	Naive
28602726	Salvana14		Asia	2013	81		81		GB	Naive
25940687	Samuel15		Sub-Saharan Africa	2011	44			44		
21975076	Santos11		Latin America/Caribbean	2007	168		168		GB	Naive
22431669	Santos12		Europe	NA	195			195		
26490727	Santos15		Europe	2010	33			33		
28585361	Sapozhnikov17		North America	2013	105		105			
27704010	Saran16	ACTG A5230 (NCT00357552)	Multiple	2009	34			34		
21876445	Saravan11		Asia	NA	582		58	524		
22323567	Saravan12		Asia	2009	45			45		
25839730	Saravan15		Asia	2014	546			546	GB	Same Rx
27869478	Saravan17		Asia	2012	97	97				
23045961	Saravanan13		Asia	2011	87			87	GB	NA
28867499	Sax17	GS-US-380-1490 (NCT02607956)	Multiple	2016	12			12		
23883841	Sayan13		Europe	2012	117		117		GB	Naive
25397495	Sayan14		Middle East/North Africa	2011	774		774			
27125365	Sayan16		Europe	2014	169		169			NA
26414663	Sayan17		Europe	2012	1306		1306		GB	Naive
23189194	Scherrer12		Europe	NA	228			228		
31330378	Scutari19		Europe	NA	39			39		
26016726	Seal16		North America	2010	226		226			
31751353	Seatla19		Sub-Saharan Africa	2014	45		45		GB	Naive
31770425	Sebastiao19		Sub-Saharan Africa	2018	34		34		GB	Naive
24215971	Sebunya13		Sub-Saharan Africa	2008	109	109				
29662875	Segeeral18	ANRS 12276 (NCT01801618)	Asia	2013	54			54		
25754408	Seu15		Sub-Saharan Africa	2010	68			68	GB	HIVDB
24976142	Sey14		North America	2008	1414		1414			
21591988	Shah11		Middle East/North Africa	2008	42		31	11		
24729604	Shao14		Sub-Saharan Africa	2011	46	46			GB	Naive
30315192	Sharma18		Asia	2017	56		18	38	GB	NA
25035709	Shen14		Asia	2011	133		133			
25025900	Shiino14		Asia	2007	243		243		GB	Naive
29633077	Shu18		Asia	2015	51		51		GB	Naive
21475993	Sierra11		Europe	NA	427		427			
21694603	Sigaloff11		Sub-Saharan Africa	2008	173			173	GB	HIVDB
22149307	Sigaloff12		Sub-Saharan Africa	2009	73		73		GB	Naive
23517497	Sigaloff13		Sub-Saharan Africa	2010	44	44			GB	Same Rx
30198436	Sili18		Middle East/North Africa	2013	36		36			
29040633	Silverman17		Sub-Saharan Africa	2014	987		987			
22496972	Sinha12		Asia	2007	31		31		GB	Naive
22716105	Sinha12		Asia	2009	128			128		
30046244	Sinha18		Asia	2014	115		115			

25525199	Sirivichayakul15		Asia	2009	284		284			
27460519	Sivamalar17		Asia	2010	101			101	GB	NA
25659108	Skhosa15		Sub-Saharan Africa	2011	160			160	GB	HIVDB
28379449	Smit17		Europe	NA	4220			4220		
23822819	Smolen-Dzirba13		Europe	2009	54		54		GB	Naive
28167814	Smolen-Dzirba17		FSU	2012	56		56		GB	Naive
31574109	Soldi19		Latin America/Caribbean	2015	1696			1696	GB	NA
22544195	Somda12		Sub-Saharan Africa	2008	48		48		GB	Naive
29345606	Song18		Asia	2014	932		932			
31146045	Soodla19		Europe	2013	224		224			
21819256	Sorial2		Latin America/Caribbean	2008	37		37		GB	Naive
30560685	Sorial19		Latin America/Caribbean	2014	122		122		GB	Naive
29371105	Sorstedt18		Europe	NA	7			7		
23542639	Souda13		Sub-Saharan Africa	2008	54			54	GB	NA
25420695	Soulie15		Europe	2014	96			96	GB	NA
29945251	Spertilli18		Europe	2012	1365		1365			
22616647	Ssemwanga12		Sub-Saharan Africa	2007	72		72		GB	Naive
22544200	Ssemwanga12		Sub-Saharan Africa	2009	42		42		GB	Naive
24635515	Stanojevic14		FSU	2009	103		103		GB	Naive
24816790	Steegen14		Sub-Saharan Africa	2011	370	354			GB	HIVDB
27907009	Steegen16		Sub-Saharan Africa	2014	277		277		GB	Naive
27923946	Steegen16		Sub-Saharan Africa	2014	350			350	GB	Same Rx
27659733	Steegen17		Sub-Saharan Africa	2014	788			788	GB	HIVDB
31433056	Steegen19		Sub-Saharan Africa	2017	43			43	GB	Same Rx
21827673	Steinberg11		North America	2007	987		987			
24831260	Stekler15		North America	2010	69		69		GB	Naive
22237471	Sterrantino12		Europe	2008	118			118		
22067663	Sterrantino12		Europe	2008	1104			1104		
30769200	Sterrantino19		Europe	NA	6893			6893		
21916807	Su12		Asia	2008	124		124		GB	Naive
25160759	Su14		Asia	2011	375		104	271		
30668734	Su19		Asia	2014	50		50			
25838288	Suaysod15	NCT00433030	Asia	2009	53	53			GB	NA
30681000	Sun19		Asia	2016	110		110		GB	Naive
22410286	Sungkanuparph12		Asia	2008	466		466			
22739389	Sunpath12		Sub-Saharan Africa	2011	38			38	HIVDB	HIVDB
28582463	Sv√\$rd17		Sub-Saharan Africa	2013	82		13	69	GB	HIVDB
20739898	Svicher10		Europe	NA	352			352		
31307909	Sylla19		Asia	NA	33	33				
29136032	Szubert17	ARROW (NCT02028676)	Sub-Saharan Africa	2010	110	110			GB	Same Rx
29389912	Tadesse18		Sub-Saharan Africa	2017	90	90			GB	Same Rx
31546824	Tadesse19		Sub-Saharan Africa	2018	93	93			GB	Naive
20163340	Taiwo10		Sub-Saharan Africa	NA	91			91		
21857490	Taiwo11	ACTG A5262(NCT00830 804)	North America	2009	137		112	25		
30804893	Taka19		Latin America/Caribbean	2014	149		149		GB	Naive
30799830	Takassi18		Sub-Saharan Africa	2014	36	36				
25873310	Tamalet15		Europe	2009	73		73		GB	Naive
29797570	Tamalet18		Europe	2013	48		48		GB	Naive
20854144	Tambuyzer10	Duet-1 & Duet-2 (NCT00359021)	Multiple	2010	93			93		

26566161	Tambuyzer16	PIANO (NCT00665847)	Multiple	2010	41	41				
24815852	Tanuma14		Asia	2010	1390		1390		GB	Naive
25926858	Tashima14	GS-US-216-0130 (NCT01440569)	North America	2011	295		295	15		
21345162	Taylor11		Sub-Saharan Africa	NA	244	244				
29931063	Tchouwa18		Sub-Saharan Africa	2015	337		337		GB	Naive
31193678	Tchouwa18		Sub-Saharan Africa	2015	221			221	GB	HIVDB
25397485	Teeraipong14		Asia	2007	2086			2086		
23959846	Telan13		Asia	2011	174		174		GB	Naive
29765082	Telele18		Sub-Saharan Africa	2010	461		461		GB	Naive
31262272	Telele19		Sub-Saharan Africa	2010	76			76	GB	NA
23592112	Temereanca13		Europe	2007	61		61		GB	Naive
29213206	Temereanca17		Europe	2012	61		61		GB	Naive
26831472	TenoRes16		Sub-Saharan Africa	2012	1926			1926	GB	Same Rx
29074854	Teto17		Sub-Saharan Africa	2011	141		109	32	GB	NA
25704446	Theys15		Europe	NA	1212			1212		
26651266	Theys16		Europe	NA	4631		4631			
23241378	Thiam13		Sub-Saharan Africa	2009	72			72	GB	NA
30060027	Thompson19	EARNEST(NCT0 0988039)	Multiple	2012	363			363	GB	Same Rx
22327248	Thomson12		Europe	2010	41		41		GB	Naive
21568760	Thorat11		Asia	2008	47		47		GB	Naive
31190911	Tien19		Asia	2008	47			47		
25614045	Todesco15		Europe	NA	26			26		
28444829	Todesco17		Europe	2010	140		140			
30585843	Todesco19		Europe	2012	70		70			
21875619	Toor11		Asia	2009	149		129	20		
24913409	Torres-Cornejo15	MonDAR (NCT01606722)	Europe	2011	42			42		
23470353	Tramuto13		Europe	2009	46		46		GB	Naive
22264087	Tran12		Asia	2008	107		107		GB	Naive
31773888	Trebelcock19		Latin America/Caribbean	2014	471		471			
29861843	Tsai18		Asia	2014	178		178			
30122963	Tsai18		Asia	2016	39		8	31		
29081666	Tshabalala17		Asia	2011	280			280		
21698125	Tully11		Sub-Saharan Africa	2007	206		206		GB	Naive
27163788	Turriziani16		Multiple	2008	71		71		GB	Naive
22214532	Ueda12		Sub-Saharan Africa	NA	33		33			
30229669	Vahabpour18		Asia	2016	42			42	GB	NA
28181034	Vairo17		Middle East/North Africa	2016	42		42		GB	Naive
21239995	van11		Sub-Saharan Africa	NA	33			33		
21837793	Van11		Sub-Saharan Africa	2008	167			167	GB	Same Rx
24053581	van13		Sub-Saharan Africa	2010	97		97			
26595539	van16		Asia	2013	359		359		GB	Naive
28857824	van17		Sub-Saharan Africa	2016	59		59		GB	Naive
31088600	Van19		Europe	2015	1417		1417			
23840622	varro13		Sub-Saharan Africa	2010	1416	1416			GB	HIVDB
26200738	Vaz15		Latin America/Caribbean	2012	41	41			GB	NA
30723941	Vaz19		Europe	2016	1			1		
22544205	Verheyen12		Sub-Saharan Africa	2008	112	112			GB	HIVDB
20834103	Verhofstede10		Europe	NA	58		58			
29187159	Verhofstede17		Europe	2014	539		539		GB	Naive

29522828	Verhofstede19		Europe	2014	1479		1479		GB	Naive
31779195	Vicia19		Europe	2015	927		927			
30951600	Vidal19	IMPAACT P1093 (NCT01302847)	Multiple	2007	6	6		6		
26483513	Villabo-Ares16		Europe	NA	30		30		GB	Naive
21670925	Vingerhoets11		Latin America/Caribbean	2007	171			171		
27603287	Volz16		Sub-Saharan Africa	NA	3736		2137	1599		
22951490	von13	ECHO (NCT00540449); THRIVE (NCT00543725)	Multiple	2009	1796		1796			
29506269	Vrancken18		Europe	2009	6912		6912			
29771783	Wadonda-Kabondo18		Sub-Saharan Africa	2015	315		152	163	GB	NA
28427935	Wainberg17		North America	2010	1055		1055		GB	Naive
22544197	Wallis12		Sub-Saharan Africa	2007	109		109			
21750100	Wang11		North America	2007	204		204		GB	Naive
24795328	Wang14	ACTG A5230 (NCT00357552)	Multiple	2009	148			148	GB	NA
26129754	Wang15		Asia	2010	175		175		GB	Naive
29870534	Wang18		Asia	2015	525		525		GB	Naive
30961560	Wang19		Asia	2017	80		80		GB	Naive
27922196	Weng15		Asia	2008	223		223		GB	Naive
30086369	Weng18		Asia	2014	270		270		GB	Naive
31443633	White19		Asia	2011	377		377			
25315212	Wijting16		Asia	2010	161		161		HIVDB	Same Rx
25321623	Wilhelmson15	GS-US-236-0102 (NCT01095796)	North America	2010	700		700	49		
29617822	Witaningrum18	DOMONO (NCT02401828)	Europe	2016	8			8		
30379960	Wright18		Sub-Saharan Africa	2017	54		54		GB	Naive
21289112	Wu11		Sub-Saharan Africa	2008	73		73		GB	Naive
27009513	Wu16		Asia	2014	41		41		GB	Naive
31248372	Wu19		Asia	2017	362		362		GB	Naive
26123125	Xu15		Asia	2013	99		99		GB	Naive
23372706	Xuan13		Asia	2011	133		133		GB	Naive
29637428	Yabar18		Asia	2016	153		153		GB	Naive
22559065	Yan12		Latin America/Caribbean	2009	244			244	GB	NA
29739342	Yan18		Asia	2008	32		32		GB	Naive
22587343	Yang12		Asia	2010	119		119		GB	Naive
24945273	Yang14		Asia	2012	35			35	GB	NA
25653132	Yang15		Asia	2012	52		52		GB	Naive
23224760	Ye13		Asia	2010	489		489			
25919896	Ye15		Asia	2011	254			254		
21830915	Yendewa12		Asia	2007	139		139		GB	Naive
20950146	Youmans11		Asia	2007	39		39		GB	Naive
30989237	Yuan19		Sub-Saharan Africa	2017	215		64	151		
21206421	Zain11		North America	2007	1277		1277			
28107870	Zeng17		Asia	2015	41		41		GB	Naive
28622345	Zeng17		Asia	2013	205		205		GB	Naive
31651864	Zeng19		Asia	2014	734			734		
22044422	Zhang12		Asia	2009	113		113		GB	Naive
22563717	Zhang12		Asia	2007	40			40	GB	NA
23943429	Zhang13		Asia	2009	159		159		GB	Naive
25330204	Zhang14		Asia	2010	130			130		

25899877	Zhang15		Asia	2013	200		200		GB	Naive
26020400	Zhang15		Asia	2011	216		216		GB	Naive
29066776	Zhang17		Asia	2013	311		311			
21417755	Zhao11		Asia	2008	217		217			
25469530	Zhao15		Asia	2012	367		367			
30115986	Zhao18		Asia	2015	4704		4704			
30192818	Zhao18		Sub-Saharan Africa	2013	461			461	GB	NA
29985265	Zhao18	HPTN 068 (NCT01233531)	Sub-Saharan Africa	2013	198		198		GB	Naive
27352965	Zhou16		Asia	2011	1316		1316		GB	Naive
25333965	Ziri14		Asia	2011	357		357		GB	Naive
27807537	Zuckerman16		Asia	2012	196			196		
27997554	Zuo16		Asia	2014	64			64		
27368990	Zuo16		Middle East/North Africa	2014	102		40	62	GB	NA
23173702	Zziwa13		Sub-Saharan Africa	2010	48		48		GB	Naive
30325775	Zziwa19		Middle East/North Africa	2012	560		560		GB	Naive

Appendix 3. Clinical Trials

PMID	AuthorYr	Trial	#Pts With Seqs	Seq-RX Link Availability	Regimens	Sponsor	Journal
<i>Studies with publicly available sequences</i>							
27342228	Guichet16	2LADY	446	Same RX	WHO first-line	French National Agency for Research on AIDS and Viral Hepatitis	Clin. Infect. Dis
22719231	Lockman12	ACTG 5208	38	RX in HIVDB	WHO first-line vs. LPV/r-containing regimen in women with history of single-dose NVP	AIDS Clinical Trials Group	AIDS Res. Hum. Retroviruses
24795328	Wallis14	ACTG 5230	148	NA	WHO first-line	AIDS Clinical Trials Group	J. Acquir. Immune Defic. Syndr
25285539	Lennox14	ACTG 5257	295	RX in HIVDB	First-line ART: ATV/r, DRV/r, vs. RAL-containing regimen	AIDS Clinical Trials Group	Clin. Infect. Dis
30321314	Derache19	ANRS 12249	1148	ART-Naïve	PrEP study	French National Agency for Research on AIDS and Viral Hepatitis	AIDS
20802293	Charpentier10	ANRS 139	14	Same RX	Salvage ART: RAL + ETR + DRV/r + optimized background	French National Agency for Research on AIDS and Viral Hepatitis	Pediatr. Infect. Dis. J
29136032	Szubert17	ARROW	110	Same RX	First-line ART: ABC-containing regimen in children	Medical Research Council	PLoS ONE
28129253	Kityo17	EARNEST	787	NA	WHO first-line	Justine Boles	Ann. Intern. Med
30060027	Thompson19	EARNEST	363	Same RX	Second-line ART: LPV/r + 2 NRTIs vs. LPV/r monotherapy vs. LPV/r + RAL	Justine Boles	PLoS Med
22015077	Molina12	GS-US-183-0145	167	RX in HIVDB	Salvage ART: EVG- vs. RAL-containing regimens	Gilead Sciences	AIDS Res. Hum. Retroviruses
23249916	Fogel13	HPTN 046	38	ART-Naïve	PMTCT: Infected infants while receiving extended single-dose NVP or placebo	National Institute of Allergy and Infectious Diseases	AIDS Res. Hum. Retroviruses
29293156	Palumbo18	HPTN 052	211	NA	First-line ART: EFV, ATV/r, LPV/r-containing regimen in index patients in serodiscordant couples	National Institute of Allergy and Infectious Diseases	AIDS
28384058	Chen17	HPTN 061	165	ART-Naïve	PrEP study	HIV Prevention Trials Network	Clin. Infect. Dis

29985265	Zhang18	HPTN 068	198	ART-Naïve	PrEP study	HIV Prevention Trials Network	PLoS Med
29149197	deCamp17	HVTN 505	47	ART-Naïve	Vaccine trial	National Institute of Allergy and Infectious Diseases	Clin. Infect. Dis
25838288	Suaysod15	NCT00433030	53	NA	Second-line ART: PI-containing regimens in children	Institut de Recherche pour le Developpement	J. Antimicrob. Chemother
21460326	Fogel11	PEPI-Malawi	37	ART-Naïve	PMTCT: Infected infants while mothers were receiving ART	Johns Hopkins Bloomberg School of Public Health	Clin. Infect. Dis
21487249	Fogel11	PEPI-Malawi	108	ART-Naïve	PMTCT: Infected infants while receiving extended NVP or NVP + AZT	Johns Hopkins Bloomberg School of Public Health	J. Acquir. Immune Defic. Syndr
30044302	Jespersen18	PIONA	56	NA	First-line ART: NVP/EFV-containing vs. LPV/r-containing regimen	University of Aarhus	J. Acquir. Immune Defic. Syndr
27346600	Lam16	Second-Line	491	RX in HIVDB	WHO first-line	Kirby Institute	J. Acquir. Immune Defic. Syndr
27076106	Hawkins16	TOV3	149	NA	First-line ART (Sequences pre- and post-ART)	Harvard School of Public Health	
<i>Studies without publicly available sequences</i>							
27704010	Saran16	ACTG 5230	34	NA	Second-line ART: LPV/r monotherapy	AIDS Clinical Trials Group	Open Forum Infect Dis
21857490	Taiwo11	ACTG 5262	137	NA	First-line ART: DRV/r + RAL (sequences were pre- and post-ART)	AIDS Clinical Trials Group	AIDS
31833849	Orkin20	AMBER	725	NA	First-line ART: single tablet DRV/co/FTC/TAF (D/C/F/TAF) vs. two tablets (D/C + F/TDF) (Sequences pre- and post-ART)	Janssen Sciences Ireland UC	AIDS
24589279	Meresse14	ANRS 12110	45	NA	WHO first-line	French National Agency for Research on AIDS and Viral Hepatitis	HIV Med
31601544	Eholie19	ANRS 12269	175	NA	WHO second-line	French National Agency for Research on AIDS and Viral Hepatitis	Lancet HIV
29662875	Segeral18	ANRS 12276	54	NA	WHO second-line	French National Agency for Research on AIDS and Viral Hepatitis	Front Public Health

21326075	Gallien11	ANRS 138	39	NA	Simplification: RAL + optimized background	French National Agency for Research on AIDS and Viral Hepatitis	AIDS
25755001	Charpentier15	ANRS 139	80	NA	Sequences before starting a salvage therapy	French National Agency for Research on AIDS and Viral Hepatitis	J. Antimicrob. Chemother
26702926	Lambert-Nielot16	ANRS 143	110	NA	First-line ART: DRV/r + RAL vs. DRV/r + NRTIs (Sequences pre- and post-ART)	French National Agency for Research on AIDS and Viral Hepatitis	J. Antimicrob. Chemother
21311113	Lathouwers11	Artemis	689	NA	First-line ART: DRV/r + TDF + FTC vs. LPV/r + TDF + FTC (Sequences pre- and post-ART)	Tibotec Pharmaceuticals, Ireland	Antivir. Ther. (Lond.)
18650513	Cooper08	BENCHMARK 1 & 2	94	NA	Salvage ART: RAL + optimized background (Sequences pre- and post-ART)	Merck Sharp & Dohme Corp.	N Engl J Med
22355307	Lataillade12	CASTLE	36	NA	First-line ART: LPV/r + TDF + FTC vs. ATV/r + TDF + FTC	Bristol-Myers Squibb	PLoS ONE
25256391	Gupta14	CASTLE	204	NA	Sequences before starting an initial ART	Bristol-Myers Squibb	Viruses
29617822	Wijting18	DOMONO	8	NA	Simplification: DTG monotherapy	Erasmus Medical Center	J. Infect. Dis
31740348	Molina20	DRIVE-FORWARD; DRIVE-AHEAD	7	NA	First-line ART: DOR-containing regimen (Primary resistance data from IAS 2018 by Lai M)	Merck Sharp & Dohme Corp	Lancet HIV
20854144	Tambuyzer10	Duet 1 & 2	93	NA	Salvage ART: ETR + DRV/r + NRTI	Tibotec Pharmaceuticals, Ireland	AIDS Res. Hum. Retroviruses
23714781	Rimsky13	ECHO & THRIVE	128	NA	First-line ART: RPV+ NRTIs vs. EFV + NRTIs (Sequences pre- and post-ART)	Tibotec Pharmaceuticals, Ireland	Antivir. Ther. (Lond.)
22951490	Vingerhoets13	ECHO & THRIVE	1796	NA	Sequences before starting an initial ART	Tibotec Pharmaceuticals, Ireland	Antivir. Ther. (Lond.)
31279073	Eron19	EMERALD	6	NA	Simplification: DRV/cobi + TAF + FTC	Janssen R&D Ireland	Antiviral Res
25926858	Tashima14	GS-216-0130	295	NA	First-line ART: DRV/cobi + NRTIs (Sequences pre- and post-ART)	Gilead Sciences	AIDS Res Ther
25321623	White15	GS-236-0102	700	NA	First-line ART: EVG/cobi + TDF + FTC vs. EFV + TDF + FTC (Sequences pre- and post-ART)	Gilead Sciences	Antivir. Ther. (Lond.)

25350960	Kulkarni14	GS-236-0103	708	NA	First-line ART: EVG/cobi + TDF + FTC vs. ATV/r + FTC + TDF (Sequences pre- and post-ART)	Gilead Sciences	HIV Clin Trials
25777187	Porter15	GS-264-0110	33	NA	First-line ART: RPV + TDF + FTC vs. EFV + TDF + FTC	Gilead Sciences	HIV Clin Trials
29627709	Margot12	GS-292-0104; GS-292-0111	1733	NA	First-line ART: EVG/cobi + TAF + FTC vs. EVG/cobi + TDF + FTC (Sequences pre- and post-ART)	Gilead Sciences	J. Clin. Virol
25867913	Mills15	GS-299-0102	153	NA	First-line: single tablet DRV/co/FTC/TAF(D/C/F/TAF) vs. three tablets (D + C + F/TDF) (Sequences pre- and post-ART)	Gilead Sciences	J Acquir Immune Defic Syndr
28867497	Gallant17	GS-380-1489	5	NA	First-line: BIC + TDF + FTC vs. DTG + ABC + 3TC	Gilead Sciences	Lancet
29925489	Molina18	GS-380-1844	5	NA	Simplification: Switching to BIC + TDF + FTC from DTG + ABC + 3TC	Gilead Sciences	Lancet HIV
29925490	Daar18	GS-380-1878	7	NA	Simplification: Switching to BIC + TDF + FTC from PI/r-regimen	Gilead Sciences	Lancet HIV
28867499	Sax17	GS-380-1490	12	NA	First-line: BIC + TDF + FTC vs. DTG + TDF + FTC	Gilead Sciences	Lancet
26244386	Olson15	IMPAACT P1032	50	NA	PMTCT: AZT monotherapy	National Institute of Allergy and Infectious Diseases	AIDS
30951600	Viani19	IMPAACT P1093	6	NA	Salvage ART: DTG + optimized background	National Institute of Allergy and Infectious Diseases	J Pediatric Infect Dis Soc
25585528	Ruane15	INROADS	2	NA	First-line and salvage: DRV/r + ETR	Tibotec, Inc	HIV Med
24913409	Torres-Cornejo15	MonDAR	42	NA	Simplification: DRV/r monotherapy	Hospitales Universitarios Virgen del Rocío	HIV Med
22380531	Pulido12	Monet	54	NA	Simplification: DRV/r monotherapy	Janssen-Cilag International NV	AIDS Res. Hum. Retroviruses
22396434	Lambert-Niclot12	Monoï	9	NA	Simplification: DRV/r monotherapy vs. DRVr + NRTIs	French National Agency for Research on AIDS and Viral Hepatitis	J. Antimicrob. Chemother
21258105	Moorthy11	NEVEREST	124	NA	Induction: LPV/r + d4T + 3TC -> NVP + d4T + 3TC vs. LPV/r + d4T + 3TC in infants with history of single-dose NVP	Columbia University	Clin. Infect. Dis

23558157	Lathouwers13	ODIN	102	NA	Salvage ART: DRV/r + optimized background	Tibotec Pharmaceuticals, Ireland	Antivir. Ther. (Lond.)
26566161	Tambuyzer16	PIANO	41	NA	Salvage ART: ETR + optimized background in ART-experienced children	Tibotec Pharmaceuticals, Ireland	Antivir. Ther. (Lond.)
29428459	Dunn18	PIVOT	3	NA	Simplification: PI/r monotherapy	Medical Research Council	J. Clin. Virol
27279571	Girard17	PROTEA	3	NA	Simplification: DRV/r monotherapy vs. DRV/r + NRTIs	Janssen-Cilag International NV	HIV Med
30513108	Kityo18	REALITY	120	NA	Intensification: RAL added to first-line ART	Anna Griffiths, MRC	PLoS Med
23830355	Cahn13	Sailing	19	NA	Salvage ART: DTG + optimized background	ViiV Healthcare	Lancet
26424460	Boyd15	Second-Line	129	NA	Second-line ART: LPV/r + RAL vs. LPV/r + NRTIs	Kirby Institute	Lancet HIV
24964358	Blanco15	SPIRAL	74	NA	Sequences before starting LPV/r + NRTIs	Hospital Clinic of Barcelona	Antivir. Ther. (Lond.)
24074642	Raffi13	SPRING-2	30	NA	First-line ART: DTG + NRTIs vs. RAL + NRTIs (Sequences pre- and post-ART)	ViiV Healthcare	Lancet Infect Dis
25711326	Baxter15	START	1946	NA	Sequences before starting an initial ART	University of Minnesota	HIV Med
24908550	Pozniak14	STRATEGY-NNRTI	2	NA	Simplification: Switch to EVG/cobi + TDF + FTC from first-line EFV + TDF + FTC vs. non-switch	Gilead Sciences	Lancet Infect Dis
27355415	Prasitsuebsai16	TASER-P	48	NA	Second-line ART	The HIV Netherlands Australia Thailand Research Collaboration	J. Acquir. Immune Defic. Syndr
23225901	Eron13	VIKING	9	NA	Salvage ART: DTG + optimized background	ViiV Healthcare	J. Infect. Dis
26866979	Naeger16	VIKING-4	6	NA	Salvage ART: DTG + optimized background	ViiV Healthcare	Antivir. Ther. (Lond.)
28891788	Kulkarni17	WAVES	575	NA	First-line ART: EVG/cobi + TDF + FTC vs. ATV/r + TDF + FTC (Sequences pre- and post-ART)	Gilead Sciences	HIV Clin Trials