### Supplementary Material

**Table S1. HIV-1 primers designed using j-CODEHOP tool**

| Target | Sense | Position* | Sequence (5’→3’) |
|--------|-------|-----------|------------------|
| Protease | Forward | 1860-1879 | CCATAAAGCAAGRGTKTTRG |
|         | Reverse | 2804-2784 | CTGAGTTTCTCTTRTTRARYTC |
|         | Forward | 2013-2032 | TAGGAAAAARGGYTGTTGGA |
|         | Reverse | 2774-2754 | TACTAATTTTCTCCAYTTIGT |
|         | Reverse | 2738-2718 | TATGGCAAAAYTGGGIGTRTT |
|         | Forward | 1857-1876 | CGGCCATAARGCAAGRGKT |
|         | Reverse | 2759-2739 | TTTAGTACTGCTYTTYTT |
|         | Forward | 1866-1885 | GGCAAGAGKTTTGCTGARG |
|         | Reverse | 2651-2631 | TAATGCTTTTATYTTYTCTTC |
|         | Forward | 2136-2153 | TCAGAGCAGRCYRGARCC |
|         | Reverse | 2627-2607 | CAATGGCCATTGYTTIACYTT |
| Reverse | Forward | 2319-2338 | CTATTAGAYACAGGRGCIGA |
|        | Reverse | 3772-3754 | GCTTGCCARTAITCYVICC |
| Transcriptase | Forward | 2418-2436 | GTAAGACARTATGAIVAIR |
|          | Reverse | 3707-3687 | AGTCTTTCCCCADATIACDAT |
|          | Forward | 2469-2488 | GGTACAGTRTTRGTIGGICC |
|          | Reverse | 3673-3655 | ATTTTTGGMCIRCTCTGG |
|          | Forward | 2415-2434 | AAAGTAAGACARRATGAKVA |
|          | Reverse | 3743-3723 | CCATGTTTCTTTYGKKATRGG |
|          | Forward | 2430-2449 | GATCAGATACYRRTAGAVAT |
|          | Reverse | 3716-3696 | AAATTTAGGRRTYTTYCCCCA |
|          | Forward | 2478-2497 | TTAGTAGGACCTACVCCTR |
|          | Reverse | 2739-2759 | AAGAAAAAAAGAYAGYACYAR |
| Integrase | Forward | 4062-4081 | ATCATTCAGCACARCCIGA |
|          | Reverse | 5666-5649 | CCTAGGAAARTGICKIAC |
|          | Forward | 4152-4174 | TGGGTACCAGCACAAYAARGGIA |
|          | Reverse | 5597-5580 | TTCCCTCTIGGICCYTG |
|          | Forward | 4165-4186 | ACAAAAGGIAATTGIGGIAAYGA |
|          | Reverse | 5576-5559 | TTCTGGGGCYTGTYTCCAT |
|          | Forward | 4056-4075 | TTAGGAATCATTCAARGCACA |
|          | Reverse | 5446-5430 | GATATTCACAMCTABGD |
|          | Forward | 4077-4096 | CCAGATAGAGTGARKCAGA |
|          | Reverse | 5393-5373 | GATTCTGAAAAACARTYAAAAR |
|          | Forward | 4158-4177 | CCAGCACAYAARGGRATTTG |
|          | Reverse | 5213-5193 | GGGATGTGACTTCTGARCTT |

* Primer position according to the HIV-1 HXB2 reference strain (accession no. K03455)
| No  | Year | HIV-1 subtype | Viral load (copies/ml) | No  | Year | HIV-1 subtype | Viral load (copies/ml) |
|-----|------|---------------|------------------------|-----|------|---------------|------------------------|
| 1   | 2020 | CRF06_cpx     | 795094                 | 51  | 2019 | CRF01_AE     | 112000                 |
| 2   | 2020 | B             | 20949                  | 52  | 2019 | CRF01_AE     | 369000                 |
| 3   | 2020 | A             | 100969                 | 53  | 2019 | A             | 2630                   |
| 4   | 2021 | B             | 15479                  | 54  | 2019 | B             | 18173                  |
| 5   | 2021 | CRF02_AG      | 12168                  | 55  | 2019 | C             | 3959                   |
| 6   | 2020 | CRF01_AE     | N/A*                   | 56  | 2019 | C             | 4441                   |
| 7   | 2020 | C             | N/A                    | 57  | 2020 | C             | 1879                   |
| 8   | 2021 | CRF02_AG      | 55901                  | 58  | 2019 | CRF02_AG     | 265000                 |
| 9   | 2021 | CRF02_AG      | 17484                  | 59  | 2019 | C             | 1099                   |
| 10  | 2021 | CRF02_AG      | 151847                 | 60  | 2019 | CRF06_cpx    | 156000                 |
| 11  | 2021 | CRF02_AG      | 614643                 | 61  | 2019 | C             | 18900                  |
| 12  | 2020 | G             | N/A                    | 62  | 2019 | CRF06_cpx    | 592000                 |
| 13  | 2020 | C             | N/A                    | 63  | 2020 | CRF02_AG     | 15900                  |
| 14  | 2020 | A             | N/A                    | 64  | 2020 | CRF43_02G    | 15753                  |
| 15  | 2020 | CRF01_AE     | N/A                    | 65  | 2020 | CRF02_AG     | 14549                  |
| 16  | 2020 | CRF01_AE     | Negative               | 66  | 2019 | C             | 1750000                 |
| 17  | 2019 | CRF02_AG     | N/A                    | 67  | 2020 | CRF01_AE     | 1100000                 |
| 18  | 2020 | B             | N/A                    | 68  | 2019 | C             | 33415                  |
| 19  | 2020 | B             | 2328                   | 69  | 2019 | C             | 80655                  |
| 20  | 2020 | CRF06_cpx    | 18289                  | 70  | 2019 | CRF02_AG     | 61579                  |
| 21  | 2020 | C             | 18289                  | 71  | 2019 | C             | 141995                 |
| 22  | 2020 | CRF01_AE     | 29266                  | 72  | 2019 | B             | 20467                  |
| 23  | 2020 | CRF01_AE     | 172305                 | 73  | 2019 | CRF02_AG     | 8020                   |
| 24  | 2020 | CRF01_AE     | N/A                    | 74  | 2019 | CRF01_AE     | 49200                  |
| 25  | 2020 | CRF16_A2D    | 5860                   | 75  | 2020 | B             | 13319                  |
| 26  | 2020 | CRF06_cpx    | 555000                 | 76  | 2020 | CRF01_AE     | 27079                  |
| 27  | 2019 | CRF01_AE     | 95621                  | 77  | 2020 | CRF07_BC     | 2400                   |
| 28  | 2019 | CRF02_AG     | 1959598                | 78  | 2020 | CRF07_BC     | 58336                  |
| 29  | 2020 | CRF02_AG     | 79100                  | 79  | 2020 | CRF02_AG     | 5777                   |
| 30  | 2020 | C             | N/A                    | 80  | 2020 | CRF02_AG     | N/A                    |
| 31  | 2020 | CRF02_AG     | 24257                  | 81  | 2020 | CRF01_AE     | 1960                   |
| 32  | 2020 | CRF02_AG     | 272                    | 82  | 2020 | CRF06_cpx    | 181622                 |
| 33  | 2019 | B             | 63939                  | 83  | 2020 | B             | 41432                  |
| 34  | 2020 | B             | N/A                    | 84  | 2020 | CRF07_BC     | 4390                   |
| 35  | 2020 | B             | 49900                  | 85  | 2020 | CRF02_AG     | 47028                  |
| 36  | 2020 | C             | 95734                  | 86  | 2020 | CRF02_AG     | 24429                  |
| 37  | 2020 | C             | 16914                  | 87  | 2020 | B             | 10489                  |
| 38  | 2020 | B             | 120732                 | 88  | 2020 | CRF01_AE     | 240932                 |
| 39  | 2020 | CRF02_AG     | 17350                  | 89  | 2019 | CRF35_AD     | 1019                   |
| 40  | 2020 | CRF01_AE     | 152731                 | 90  | 2020 | CRF25_cpx    | 1184476                 |
| 41  | 2020 | C             | 124499                 | 91  | 2018 | CRF63-02A1   | 72060                  |
| 42  | 2020 | CRF01_AE     | N/A                    | 92  | 2018 | CRF50-A1D    | 521684                  |
| 43  | 2020 | B             | 90500                  | 93  | 2019 | CRF08_BC     | 13116                  |
| No | Year | HIV-1 subtype | Viral load (copies/ml) |
|----|------|---------------|-----------------------|
| 44 | 2019 | B             | N/A                   |
| 45 | 2019 | CRF01_AE      | 3194                  |
| 46 | 2019 | C             | 87259                 |
| 47 | 2021 | CRF02_AG      | 61196                 |
| 48 | 2020 | CRF02_AG      | 20526                 |
| 49 | 2020 | CRF07_BC      | 19199                 |
| 50 | 2020 | CRF02_AG      | 7706                  |
| 94 | 2019 | CRF07_BC      | 213000                |
| 95 | 2020 | B             | N/A                   |
| 96 | 2019 | CRF16_A2D     | 32982                 |
| 97 | 2018 | CRF43-02G     | 195523                |
| 98 | 2019 | CRF10_CD      | 200577                |
| 99 | 2019 | CRF02_AG      | 378346                |
| 100| 2020 | C             | 331757                |

*N/A, not available*
**Figure S1.** Analytical specificity of CODEHOP-mediated PCR amplification of protease/reverse transcriptase regions. Lane 1: human T-lymphotropic virus-1; lane 2: hepatitis B virus; lane 3: hepatitis C virus; lane 4: Epstein-Barr virus; lane 5: herpes simplex virus 1; lane 6: herpes simplex virus 2; lane 7: cytomegalovirus; lane 8: varicella-zoster virus; lane 9: coxsackievirus B4; lane 10: negative control; lane 11: HIV-1 positive control; lane 12: high DNA mass ladder.