

# HIV-1 DRUG RESISTANCE MUTATIONS IN ANTIRETROVIRAL TREATED THAI PATIENTS WITH LOW VIRAL LOAD

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**Abstract.** Low-level viremia [LLV; HIV-1 viral load (VL) <2,000 copies/ml] in Thailand has risen due to the success of a program of free combined antiretroviral treatment (cART) under the country's Universal Health Coverage Scheme. However, this program resulted in increasing HIV drug resistance mutations (DRMs) in cART failure cases, but there are few or no data available of HIV DRMs in LLV from Thailand. Using a modified commercial drug resistance genotype test (DRGT) to increase sensitivity of DRM detection, the success rate of HIV *pol* amplification and the frequency of HIV DRMs in randomly collected plasma samples ( $n = 30$ ) was 80% and 47%, respectively. These plasma samples were divided into two equal groups, one group with HIV VL <1,000 copies/ml and the other with VL of 1,000-2,000 copies/ml. HIV-1 *pol* region could be amplified from all (100%) group 1 and 9/15 (60%) group 2 samples. HIV DRMs were detected in these *pol* sequences from group 1 and group 2 samples at 60% and 56%, respectively. Presence of HIV DRMs against NNRTIs, NRTIs and PIs among the patients was 54%, 37% and 9%, respectively. The most common (37%) HIV DRM against NRTIs was M184V/I. The procedure can be applied in routine screening of HIV DRMs in antiretroviral drug treatment failure patients with low VL. Such data should help to improve and develop clinical management programs towards achieving Thailand National AIDS Strategy to eliminate HIV/AIDS by 2030.

**Keywords:** antiretroviral drug resistance, genotyping, HIV-1, low viral load, LLV

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