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Tracing HIV-1 CRF07_BC Epidemic Among Injecting Drug Users (IDUs) in Central Taiwan

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Introduction and Objectives: According to statistics from the Taiwan Centers for Disease Control, at the end of 2011 just near one-third (29.9%) of HIV-1-positive Taiwanese were injecting drug users (IDUs), representing the highest at-risk group. In the previous study, we noted higher levels of CRF07_BC circulation among IDUs. This study investigated CRF07_BC transmission origin among IDUs population. **Methods:** Blood samples and clinical data were collected from HIV-1-positive IDUs patients at a medical center in central Taiwan between 2007 and 2009. To trace origin entry times for CRF07_BC among IDUs, we performed estimations of evolutionary rates and dates of the most recent common ancestor (tMRCA). **Results:** According to Bayesian tree, the CRF07_BC viral strain went through a period of incubation in southern Taiwan prior to transmission to northern Taiwan and an immediate return to central Taiwan via a founder strain. The evolution rate of CRF07_BC is 0.78×10^{-2} (0.53×10^{-2} - 1.05×10^{-2} , 95% Highest Posterior Density (HPD)). The tMRCA of CRF07_BC were dated to 2002.3 (2000.2-2003.7, 95% HPD), and the demographic history of the population shown in the skyline plot indicated CRF07_BC in central Taiwan was increasing. **Conclusion:** The CRF07_BC strain transmission origin among IDUs was trace back 2002. Furthermore, the CRF07_BC strain was increasing in central Taiwan.

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Learning Objectives: Identify CRF07_BC transmission origin among IDUs population.

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Qualified on the content I am responsible for because: I am the PI of this research project.

Any relevant financial relationships? No

Signed on 02/06/2012 by *Yu-Ching Lan*

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