

## **Comparison of V3 loop sequences of maternal and infant-derived HIV strains.**

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Objective: To determine and compare the nucleotide sequence of the gp120 V3 loop of HIV DNA and RNA derived from HIV-infected mothers and their infected infants. Methods: Maternal and infant blood samples were collected, fractionated into mononuclear cells (PBMC) and plasma, and frozen at -70 C. A 102-nucleotide sequence of gp120 encompassing the V3 loop was amplified from PBMC DNA and cDNA from plasma viral RNA, using nested PCR. Between 7 and 15 discrete PCR products were sequenced from each sample. Results: Samples have been obtained from 9 HIV-infected maternal-infant pairs. To date, sequence data is available from one pair, in which the infant had rapidly progressive HIV disease in the first year of life. Sequences from infant PBMC DNA and plasma RNA are derived from a blood sample obtained when the infant was 18 months of age; maternal plasma RNA sequences are from a maternal blood sample when the infant was 20 months of age. The maternal RNA sequences demonstrate two predominate genotypes which differ by 11.8%. The infant RNA and DNA sequences each demonstrate a single genotype which differ by 9.8%. The infant DNA is similar to one of the two maternal sequences (2.9% and 10.8% difference respectively) whereas the infant RNA sequences differ from both maternal strains (10.8% and 8.8% difference).

Conclusions: The sequence data suggests that the HIV strain infecting the infant was derived from one of the two predominant maternal strains (reflected by the infant DNA sequence) with subsequent divergence of the replicating strain in the infant (reflected by RNA sequences). Analysis of additional maternal-infant samples will provide further insight into the pathogenesis of maternal-infant transmission of HIV.

\*DNA, Viral/BLOOD \*HIV/GENETICS \*HIV Infections/TRANSMISSION \*RNA, Viral/BLOOD

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