60 billion years, 30 trillion cells â€“ The Science of Us

Authors: Kristin Rush Ernest Willis Roger Dodson Rick Fry Craig Ortiz

Published Date: 07-15-2014

Biola University

School of Chemistry

From Physical Chemistry, Indian Express , December 11, 2011:

In 2008, Elizabeth Ward, a graduate student of the Viral Immunology Division of the Emory University School of Medicine in Atlanta, who was working in memory of her deceased father, started taking three blood samples a day from him, in four-day-long intervals, and also from other family members.

He swabbed the blood of the family and used DNA sequencers to compare the sequences between each sample to a library of about 11,000 lines of genetic information and discovered genetic variation associated with HIV, a virus that causes AIDS.

In late 2009, he obtained more samples from the family and compared them. He found that older individuals in the family â€” the individuals he was able to find the greatest genetic differences from â€” had substantially more of their DNA sequences that was associated with HIV/AIDS in their blood samples than those samples collected from later and the youngest individuals in the family. (https://bit.ly/gnyuPi)

The causes of the mitochondrial DNA differences has not been discovered yet, as Wardâ€™s next sequencing studies are yet to be completed, but he suspects that instead of inheriting the mutations naturally â€” through mutations in mitochondrial DNA or other mechanisms â€” the ancient ancestral woman had viruses that spread from her blood cells to her mitochondria in a similar way as HIV/AIDS.

A Fire Hydrant In The Middle Of A Forest