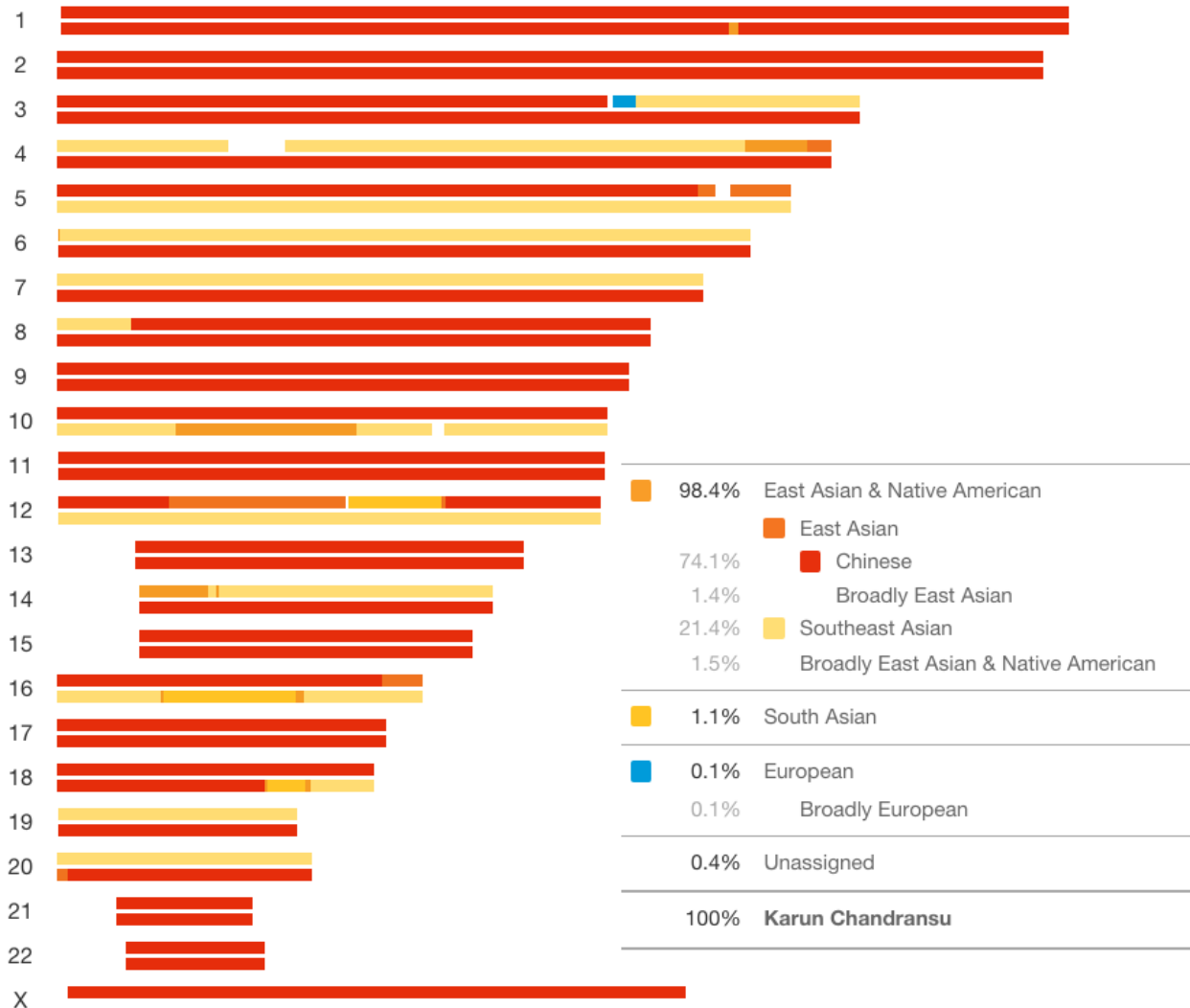


## Ancestry Composition of Dr. Karoon Chandransu

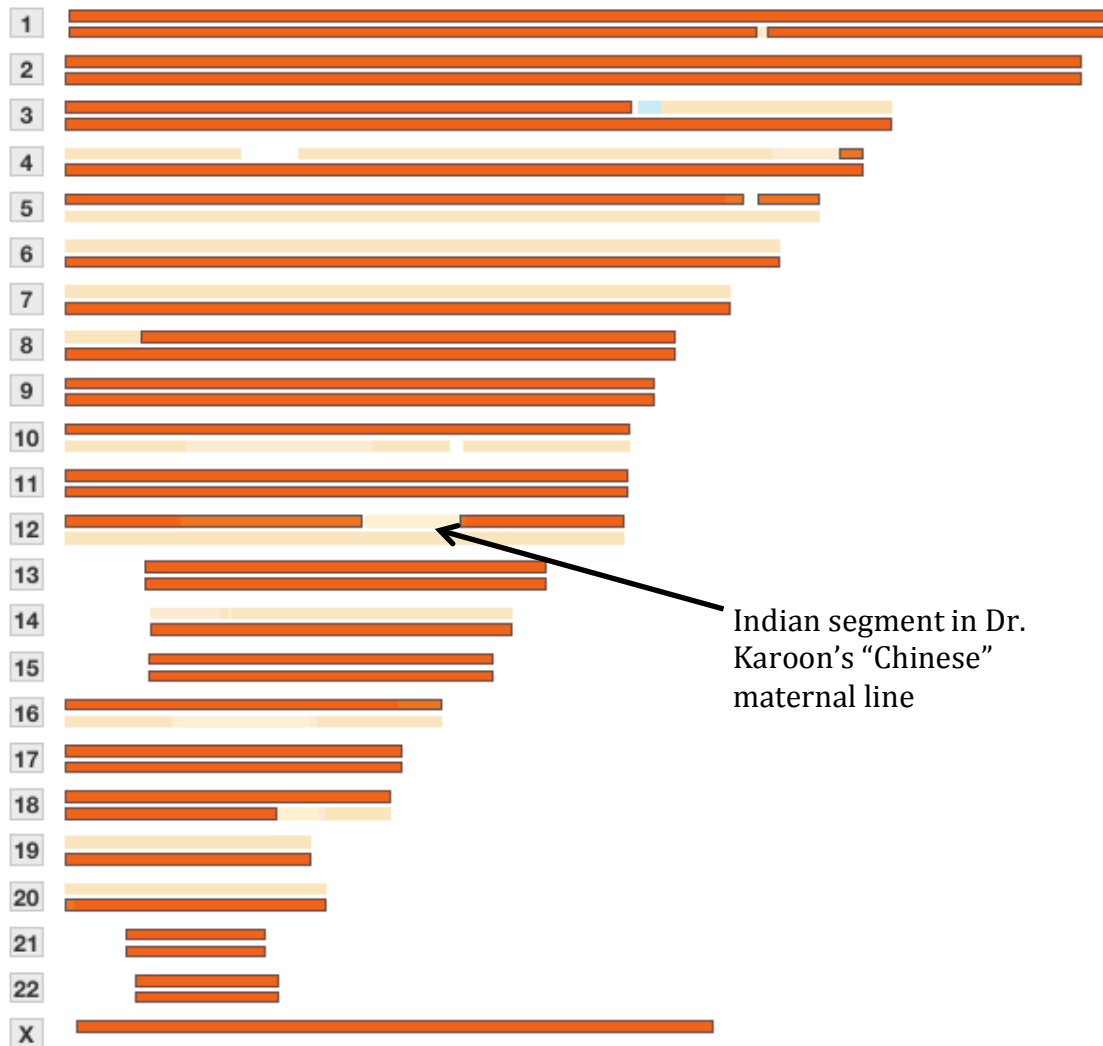
Analysis of 23andMe Report by Dr. Jarupon Sathirapongsasuti (Fah)

October 22, 2015



Ancestry composition of Dr. Karoon's genome is 75.5% Chinese, 23% Thai (South East Asian), and 1.1% Indian; the other 0.4% are unclassified. About half of his Chinese ancestry came from his mother Khun Ying Sanguansri, while his father Dr. Siriluck contributed to the other 25.5%. While Dr. Karoon received most of his Thai and Indian ancestry from his father, his mother also contributed some Indian ancestry. By first approximation, we can estimate that Dr. Siriluck was ~50% Chinese, ~46% Thai, and ~1% Indian (the rest are unaccented for).

## Chinese



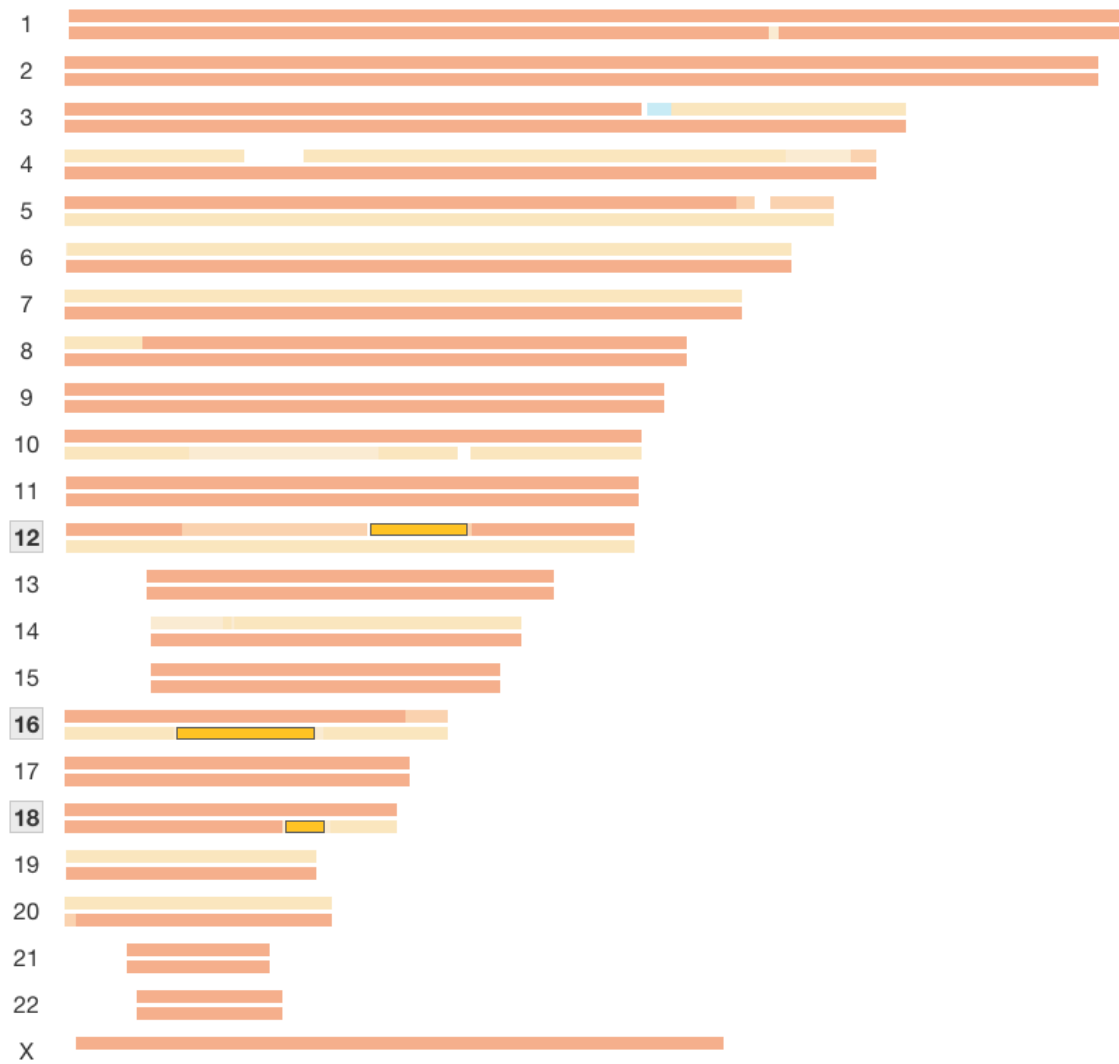
### Maternal Lineage

Because Dr. Karoon's Chromosome X is 100% Chinese, we can infer that Dr. Karoon's mother Khun Ying Sanguansri was Chinese. However, Khun Ying Sanguansri was not 100% Chinese; she had ~1% Indian ancestry, as shown in the figure above. Presence of some Indian ancestry is a common feature of the Southern Chinese population (Dr. Kreingkrui Sathirapongsasuti's genome is also 99% Chinese and 1% Indian).

### Paternal Lineage

Based on the large segment size in Dr. Karoon's paternal Chinese lineage, it is likely that one of Dr. Karoon's paternal grand parents (Dr. Siriluck's parents) was Chinese. The number of ancestral break points (the transition between Chinese and non-Chinese segments) is very small (~5), consistent with a recombination rate in a single generation.

## Indian



Indian ancestry is present in both Dr. Karoon's maternal and paternal lineages. As discussed above, the segment on Chromosome 12 likely comes from the maternal line and the segments on Chromosomes 16 and 18 are from the paternal line.

## Thai



The Thai ancestry in Dr. Karoon's genome most likely comes from his paternal lineage; that is through Dr. Siriluck and Khun Poo Tong.

## European

Dr. Karoon is 0.1% European. Although it is difficult to tell if the 0.1% European ancestry on Dr. Karoon's Chromosome 3 is real or an experimental artifact, it is possible to confirm it through comparison with other relatives, General Suchit and Khun Neilawadee. The European segment on Chromosome 3 is classified as European in both Dr. Karoon's and Gen. Suchit's DNA, confirming the validity of the finding.

