

POSTER PRESENTATION

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The AVESTAGENOME project™ - a discovery model for disease genomics and beyond

S N Guzder^{*}, Renuka Jain, Naveen Sharma, Chellappa Gopalkrishnan, Yasmin Shah, Viloo Morawala-Patell

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The AVESTAGENOME Project™ is a systems-biology-based study of the Parsis, a genetically homogeneous community, which aims to determine the genetic basis of longevity and age-related disorders. It also aims to discover population-validated drug targets and molecular markers for diagnostics.

The project has collected 4,500 blood samples in addition to nutritional and phenotypic data for health and disease state(s) from participants in various cities in India. A case-control study using a cohort for breast cancer has uncovered novel metabolites and proteins specific for breast cancer. Genomic analysis has shown that the Parsi population is distinct and is more closely related to the European population than are other Indian populations. Interestingly, a comparison of DNA polymorphisms with data from other populations has uncovered a unique signature for the Parsi population. Whole genome sequencing from these samples is currently ongoing to discover all the polymorphisms in this unique population that potentially bridges the eastern and western populations.

Peripheral blood mononuclear cells from the participants are to be transformed for potential therapeutic applications. Importantly, the integration of data sets from genome, transcriptome, proteome and metabolome from the same sample would enable a comprehensive

picture of both health and disease event(s) at the molecular level.

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