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(54) Title: A TARGET-VARIANT-REFERENCE PANEL FOR IMPUTING TARGET VARIANTS

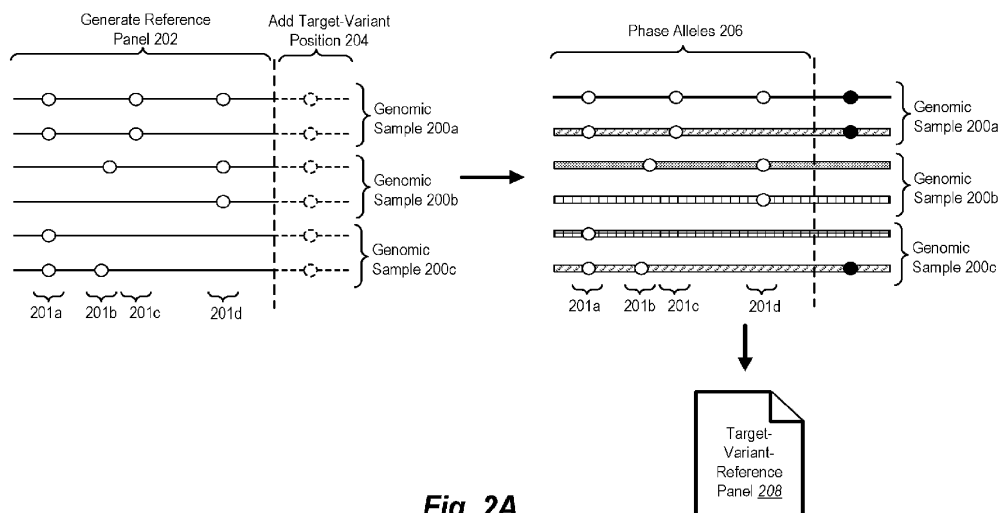


Fig. 2A

(57) **Abstract:** The present disclosure relates to systems, non-transitory computer-readable media, and methods for generating a target-variant-reference panel comprising a target-variant position with target-variant indicators or using the target-variant-reference panel to impute a genotype call for the corresponding target variant. In particular, in one or more embodiments, the disclosed systems generate an initial reference panel including a variety of phased genomic samples of different haplotypes. The disclosed systems further add a target-variant position to the initial reference panel to indicate a presence or absence of a target variant, thereby creating a target-variant-reference panel comprising a target-variant position with target-variant indicators. Additionally or alternatively, the disclosed systems can utilize the target-variant-reference panel to impute genotype calls indicating a presence or absence of a target variant within a target genomic sample based on a comparison of (i) haplotypes represented in the target-variant-reference panel and (ii) nucleotide reads corresponding to the target genomic sample.

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