

## Supplementary Figures

### Origin Matters: Using a Local Reference Genome Improves

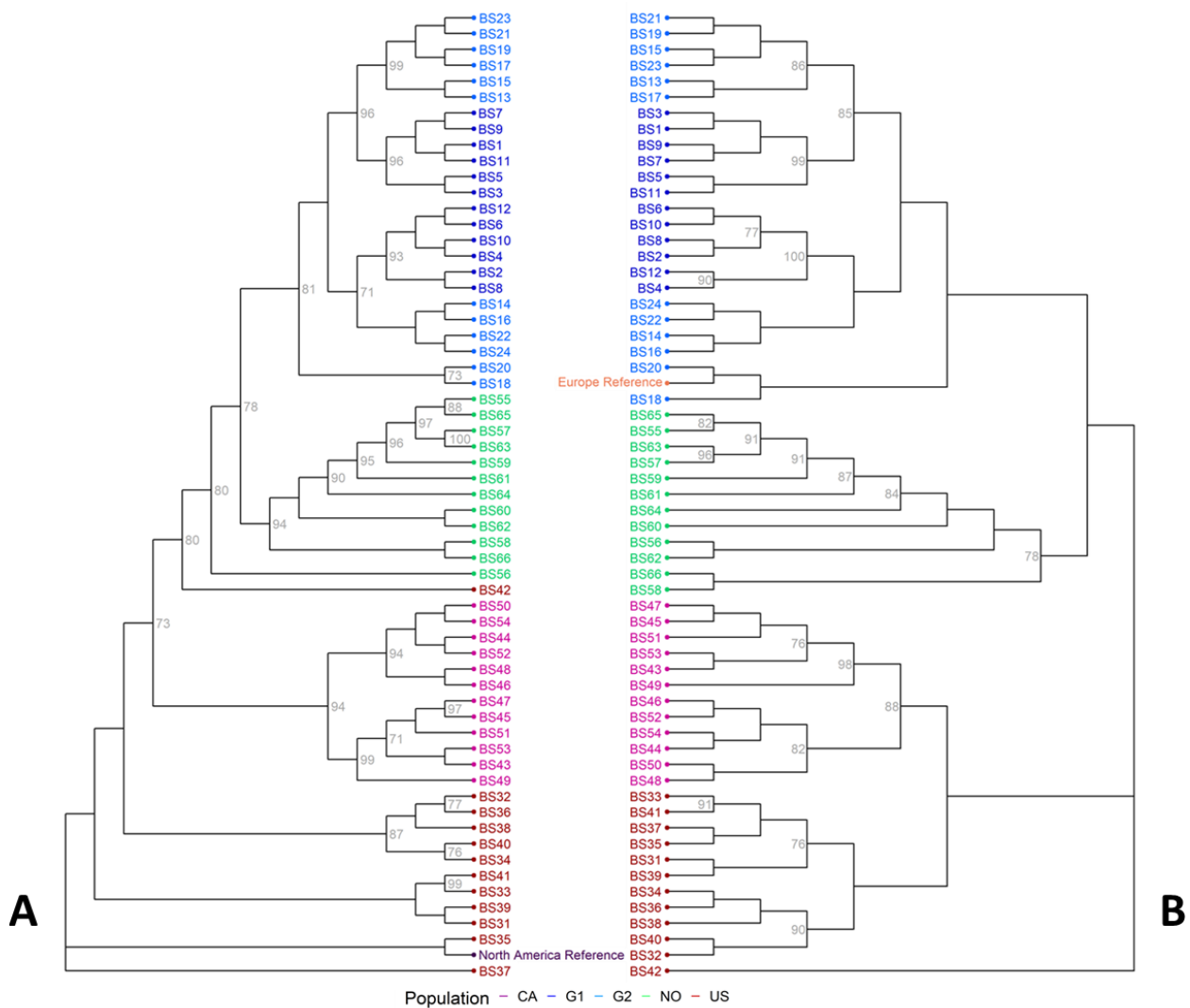
#### Measures in Population Genomics

*Doko-Miles J. Thorburn*<sup>1,2+</sup>, *Kostas Sagonas*<sup>1,3</sup>, *Mahesh Binzer-Panchal*<sup>4</sup>, *Frederic J.J. Chain*<sup>5</sup>, *Philine G.D. Feulner*<sup>6,7</sup>, *Erich Bornberg-Bauer*<sup>8</sup>, *Thorsten BH Reusch*<sup>9</sup>, *Irene E. Samonte-Padilla*<sup>10</sup>, *Manfred Milinski*<sup>10</sup>, *Tobias L. Lenz*<sup>11,12</sup>, *Christophe Eizaguirre*<sup>1</sup>

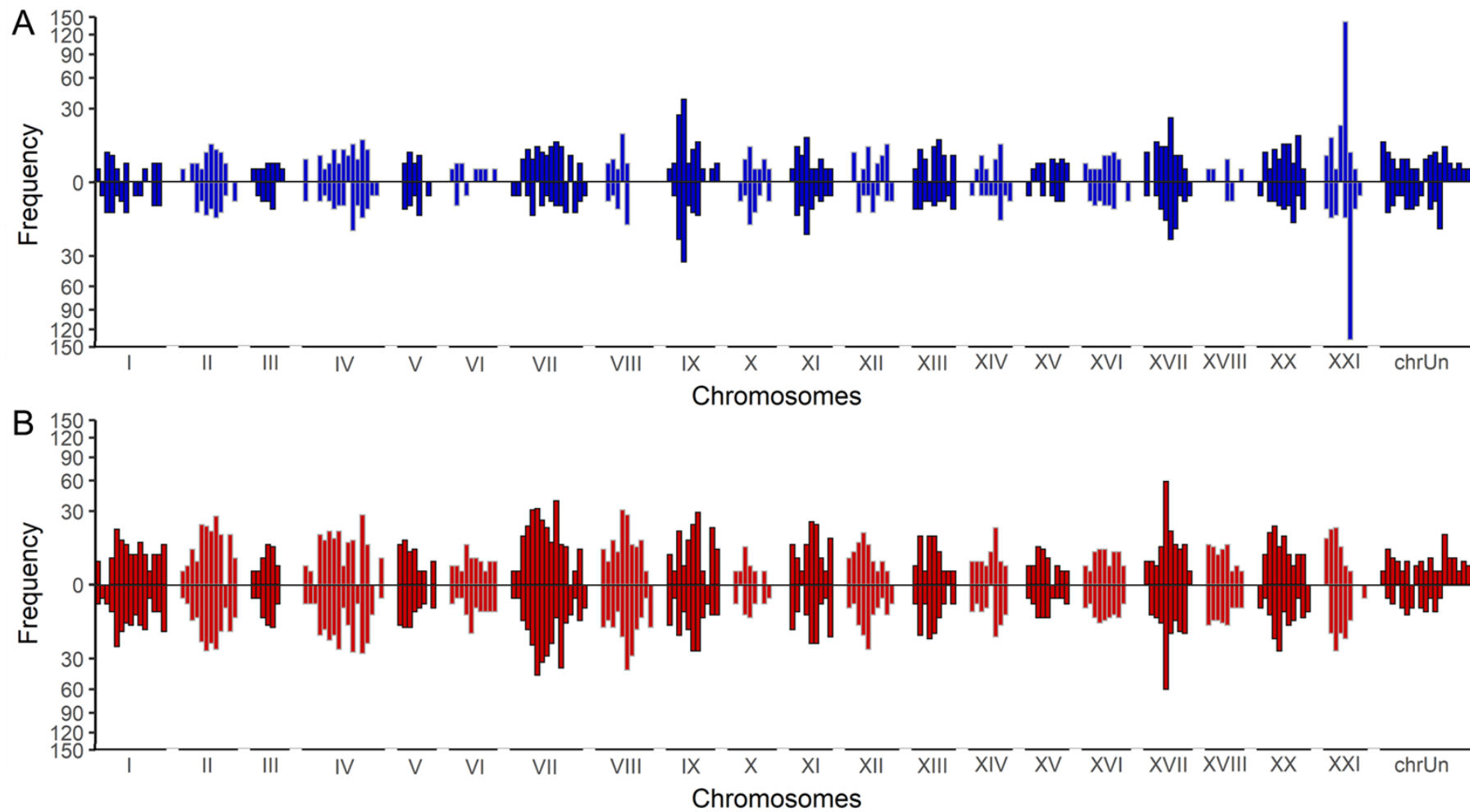
Reference Genome	ATGGCGCGATCGA
Individual 1	ATCGCGCGAGCGA
	ATCGCTCGACCGA
	↑ ↑ ↑ ↑
	1 2 3 4

1. Homozygote Reference
2. Homozygote Non-reference
3. Heterozygote Reference/Non-reference
4. Heterozygote Non-reference/Non-reference

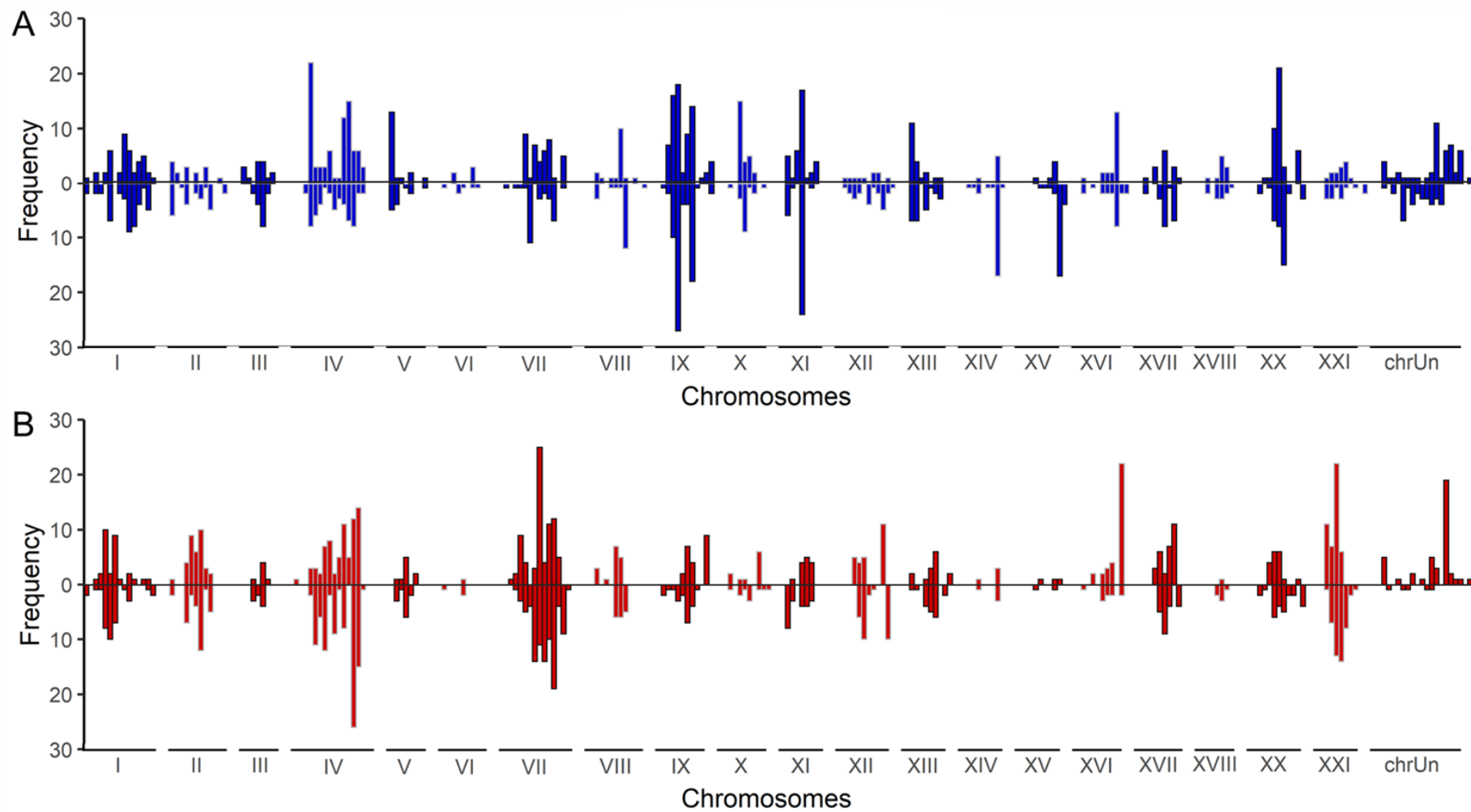
**Supplementary figure S1.** Theoretical representation of the genotype classes included in the genotype bias analysis for a diploid organism.



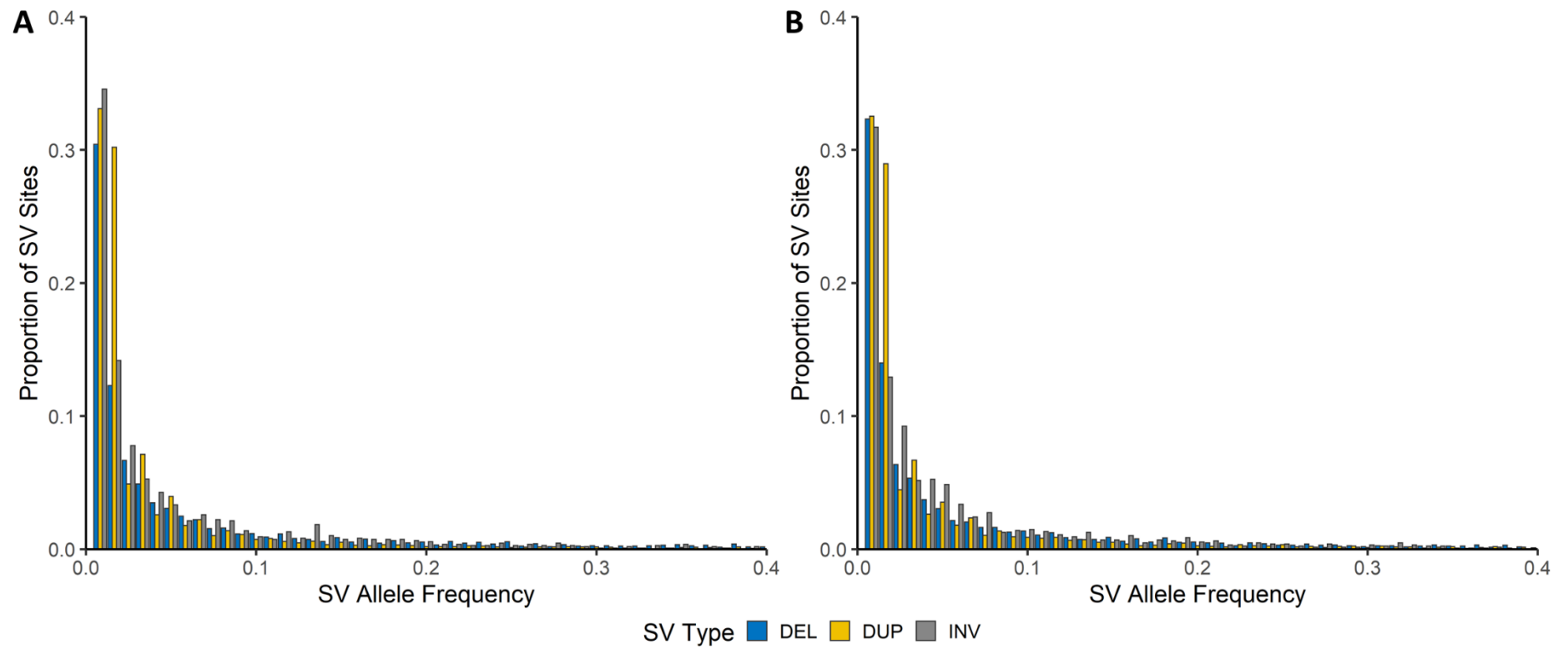
**Supplementary Figure S2.** Maximum likelihood tree based on polymorphism data called from [A] the North American reference genome and [B] the European reference genome. Both reference genomes were added to the phylogeny by randomly sampling 1% (~100k) of segregating sites across the genome. Nodes with higher than 70% bootstrap support are shown in grey at the node. Individuals are coloured by population-pair



**Supplementary Figure S3.** Comparing distributions of outlier Tajima's  $D$  windows across the genome for (top) European and (bottom) North American populations mapped to the (A) European or (B) North American reference genome. Axes are square root transformed.



**Supplementary Figure S4.** Comparing distributions of outlier  $F_{ST}$  windows across the genome for (top) European and (bottom) North American populations mapped to the (A) European or (B) North American reference genome. Axes are square root transformed.



**Supplementary Figure S5.** The allele frequency spectrum of bi-allelic SVs across all 60 individuals, exhibiting that the majority of deletions (blue), duplications (yellow) and inversions (grey) occur at low frequencies when using both the (A) European or the (B) North American reference genomes.