**SUPPLEMENTARY DATA**

Supplementary Table 1: Function matching table for effects present only in SnpEff and how they were categorized using SeattleSeq for denovo-db.

| SnpEff effect | SeattleSeq Annotation effect |
|---|---|
| CODON_CHANGE_PLUS_CODON_DELETION | codingComplex |
| CODON_CHANGE_PLUS_CODON_INSERTION | codingComplex |
| CODON_DELETION | codingComplex |
| CODON_INSERTION | codingComplex |
| EXON | coding |
| FRAME_SHIFT | frameshift |
| INTRON | intron |
| NON_SYNONYMOUS_CODING | missense |
| NON_SYNONYMOUS_START | missense |
| SPLICE_SITE_ACCEPTOR | splice-acceptor |
| SPLICE_SITE_DONOR | splice-donor |
| SPLICE_SITE_REGION | intron-near-splice |
| START_GAINED | coding unknown |
| START_LOST | coding unknown |
| STOP_GAINED | stop-gained |
| STOP_LOST | stop-lost |
| SYNONYMOUS_CODING | synonymous |
| SYNONYMOUS_STOP | synonymous |
| UTR_3_PRIME | 3-prime-UTR |
| UTR_5_PRIME | 5-prime-UTR |
| NONE | |