



Figure S3 Mutational outcomes influence observed mutagenesis rates. *POL1* and *ILV3* are both essential genes. The guide targeting *POL1* only creates mutations that result in substitutions, which have a low chance of causing LOF of the gene. As such, both mutations can be observed after Canavanine recovery, but as expected from the Target-AID mutational frequency (Nishida *et al.* 2016), the C to G mutation is more frequent. In the case of *ILV3*, the C to G mutation creates a premature stop codon that is lethal, which explains its absence from the population after Canavanine recovery event though it should have a higher frequency than the C to T mutation.