FIGURE S1.—Comparison of three measures of substitution rates in populations with strictly neutral mutations. The dashed, red line tracks the mean origination rate, or the rate at which mutations arise that will fix, in 10,000-generation simulations; the dotted line tracks the rate at which mutations fix in the population. Both rates converge at steady-state, but the origination rate is underestimated near the end of each simulation, and the substitution rate similarly underestimated near the beginning. Note that these transitory periods are proportional to N, as expected from coalescent theory. The error in the origination rate measurement can be fixed by simulating populations for longer than the measurement period; the solid line shows the results of measuring origination rates over 10,000 generations, but running the simulations until a mutation fixes that originated after 10,000 generations. This last method produces an accurate estimate of the substitution rate for the entirety of the observation period.