

| | Pr(r reads from UMI will produce ≥ 2 UEIs of ≥ 2 reads each) | | | | | | | | Mean error UMI-variants | | | |
|----------|---|---------|---------|---------|---------|---------|---------|----------|----------------------------|----------|----------|----------------|
| | SSD of same | | | | | | | | Mean reads per UMI-variant | | | |
| | ≤ 3 reads | 4 reads | 5 reads | 6 reads | 7 reads | 8 reads | 9 reads | 10 reads | 1 errors | 2 errors | 3 errors | FPR |
| Sample 1 | 0.0E+00 | 1.6E-01 | 3.5E-01 | 5.3E-01 | 6.6E-01 | 7.5E-01 | 8.2E-01 | 8.6E-01 | 9.4E-01 | 1.4E-02 | 4.8E-05 | 9.5E-05 |
| | 0.0E+00 | 4.2E-04 | 4.9E-04 | 4.6E-04 | 4.1E-04 | 2.9E-04 | 4.6E-04 | 2.9E-04 | 1.7E+00 | 1.2E+00 | 1.0E+00 | |
| Sample 2 | 0.0E+00 | 1.7E-01 | 3.7E-01 | 5.5E-01 | 6.8E-01 | 7.7E-01 | 8.4E-01 | 8.8E-01 | 9.4E-01 | 1.3E-02 | 3.1E-05 | 9.3E-05 |
| | 0.0E+00 | 6.3E-04 | 5.7E-04 | 3.5E-04 | 3.9E-04 | 4.0E-04 | 3.7E-04 | 4.3E-04 | 1.7E+00 | 1.2E+00 | 1.0E+00 | |
| Sample 3 | 0.0E+00 | 1.1E-01 | 2.5E-01 | 3.9E-01 | 5.0E-01 | 6.0E-01 | 6.7E-01 | 7.3E-01 | 6.3E+00 | 3.6E-01 | 3.5E-03 | 1.3E-03 |
| | 0.0E+00 | 1.1E-03 | 1.7E-03 | 1.2E-03 | 2.3E-03 | 1.8E-03 | 9.2E-04 | 1.1E-03 | 3.2E+00 | 1.1E+00 | 1.0E+00 | |
| Sample 4 | 0.0E+00 | 1.5E-01 | 3.2E-01 | 4.7E-01 | 5.9E-01 | 6.7E-01 | 7.4E-01 | 7.8E-01 | 3.1E+00 | 6.2E-02 | 1.8E-04 | 3.3E-04 |
| | 0.0E+00 | 7.4E-04 | 7.8E-04 | 1.0E-03 | 7.0E-04 | 9.9E-04 | 8.0E-04 | 9.8E-04 | 2.0E+00 | 1.1E+00 | 1.0E+00 | |
| Sample 5 | 0.0E+00 | 1.5E-01 | 3.3E-01 | 4.8E-01 | 5.9E-01 | 6.7E-01 | 7.4E-01 | 7.8E-01 | 7.5E+00 | 2.4E-01 | 1.6E-03 | 1.5E-03 |
| | 0.0E+00 | 8.8E-04 | 1.9E-03 | 1.8E-03 | 1.2E-03 | 1.2E-03 | 1.6E-03 | 9.2E-04 | 2.5E+00 | 1.2E+00 | 1.1E+00 | |

TABLE S4: False-positive rate estimates for each sample using equation 3, related to Figures 2, 4-6, and 5. “Mean error UMI-variants” corresponds to quantity μ_k , with k being the number of errors, and “mean reads per UMI-variant” corresponds to quantity $\mu_{R,k}$. FPR is then the estimated fraction of UMIs that are mistakenly identified as real in the final data set.