

Single-cell vs bulk RNA-seq count matrices

Bulk (traditional)	Sample 1 (mix of cells)	Sample 2 (mix of cells)	...	Sample n (mix of cells)
Isoform 1	14	12	...	17
Isoform 2	54	58	...	61
...
Isoform n	3	0	...	2

Single-cell	Cell 1 (sample 1) (celltype A, usually unknown)	Cell 2 (sample 1) (celltype B, usually unknown)	...	Cell m (sample 1) (celltype K, usually unknown)
Isoform 1	0	10	...	0
Isoform 2	12	0	...	26
...
Isoform m	0	0	...	3

Columns in single-cell are from individual cells, whereas the columns in bulk are from a mix of very many cells (and cell types).

Consequence: Columns in single-cell are much more variable than the columns in bulk. Different distributions are needed.