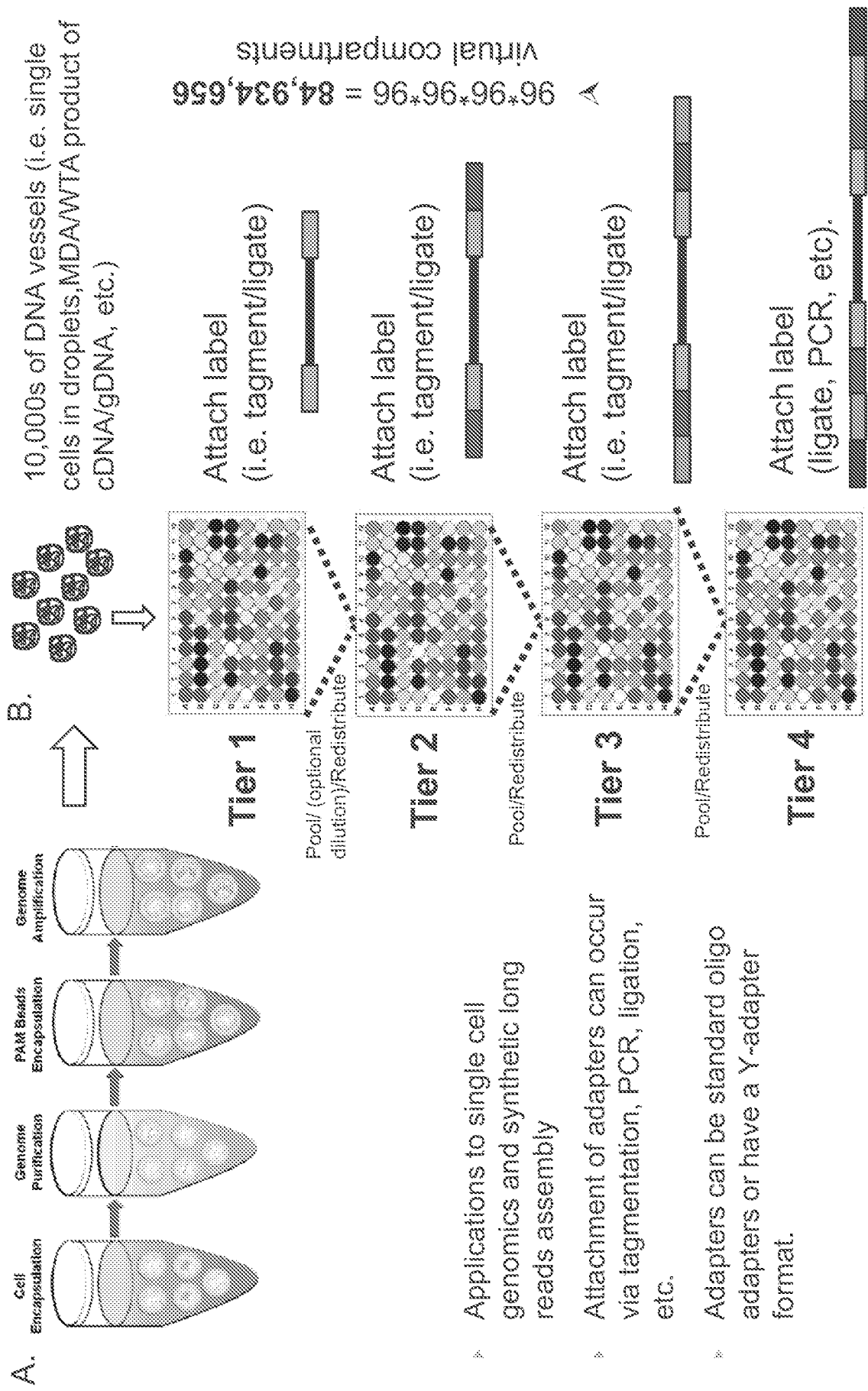


Fig. 1: Four tier combinatoric indexing



- Applications to single cell genomics and synthetic long reads assembly
- Attachment of adapters can occur via tagmentation, PCR, ligation, etc.
- Adapters can be standard oligo adapters or have a Y-adapter format.

Fig. 2: Two tier Combinatoric Indexing for Single Cell Libraries

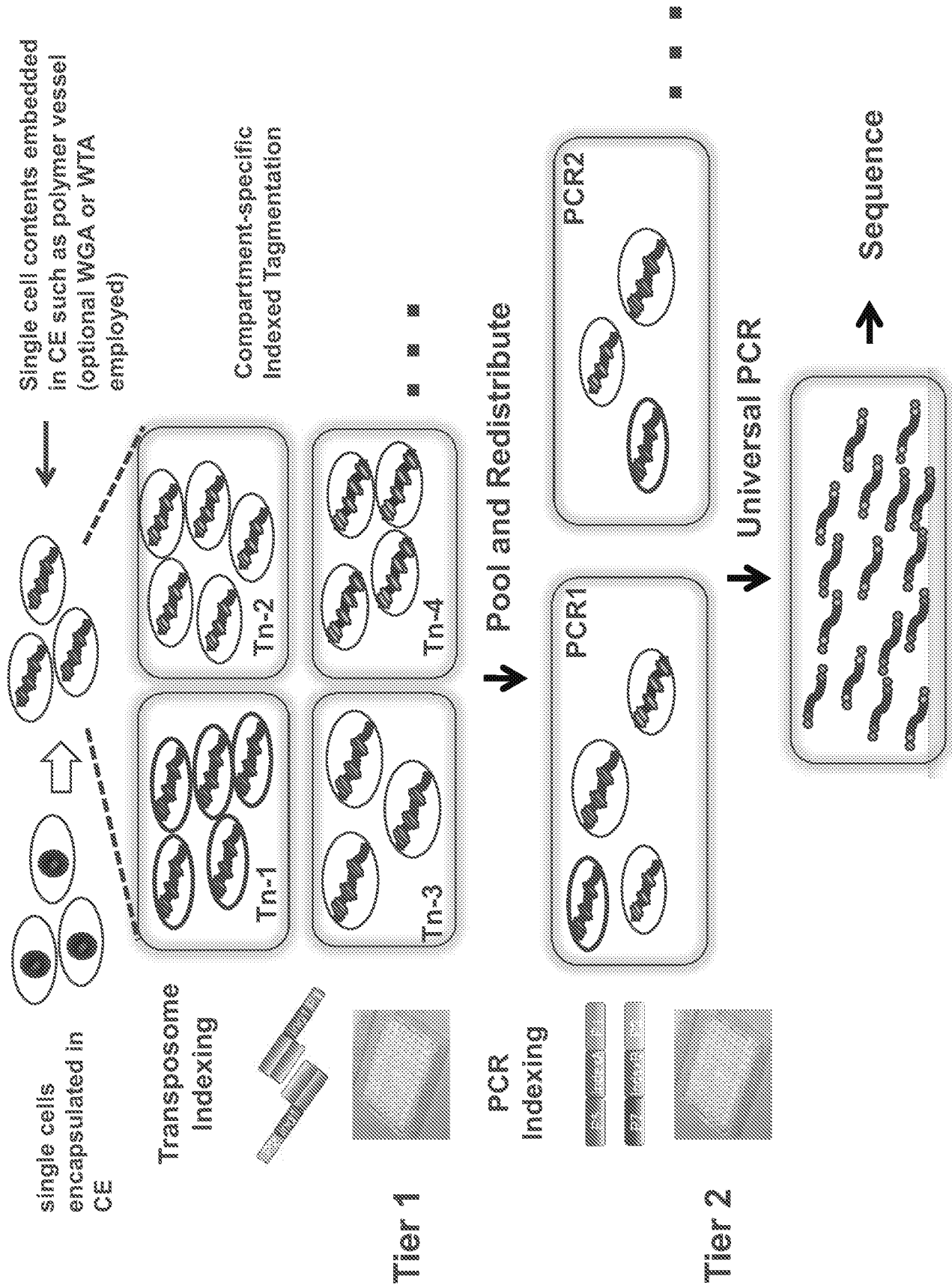
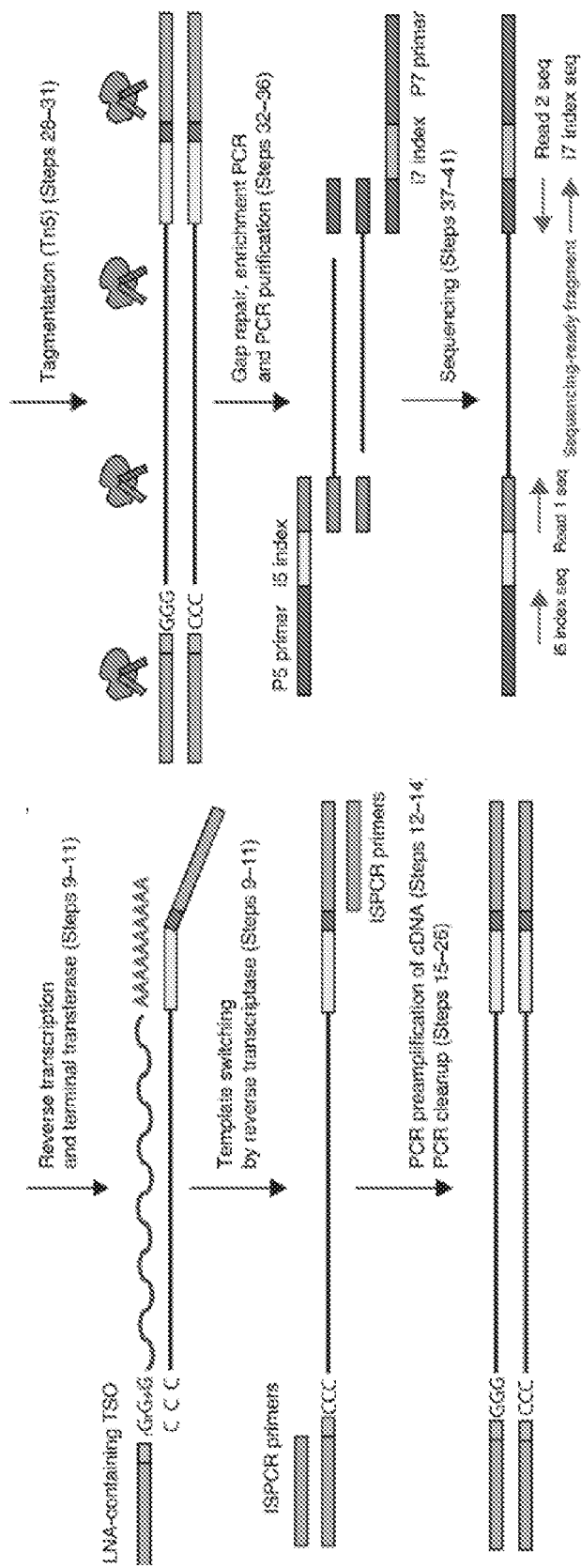
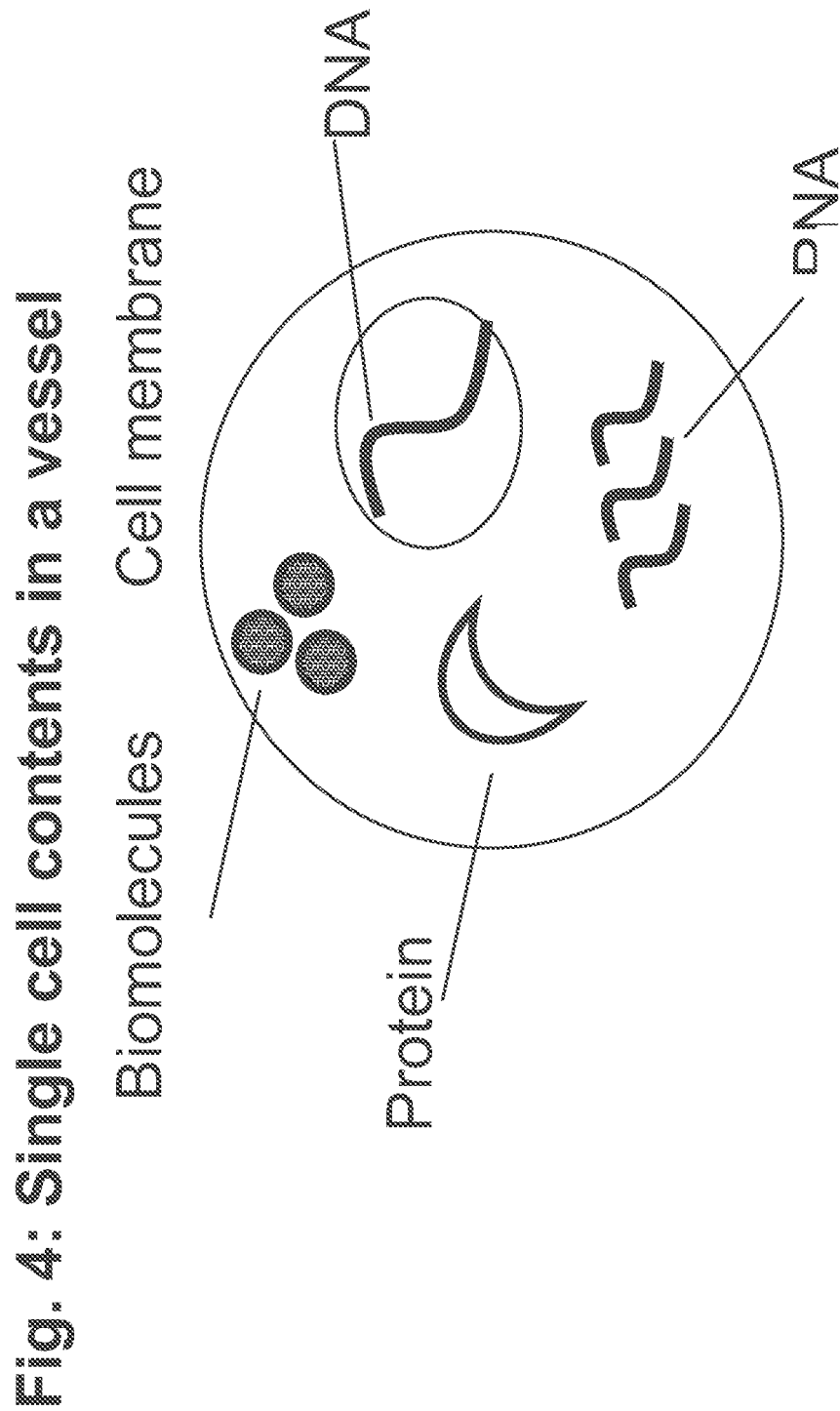


Fig. 3: Single cell gene expression in CE (e.g., droplet)





Cross-section of a cell showing the various biomolecules

Fig. 5A: Formation of a Contiguity Element (CE)

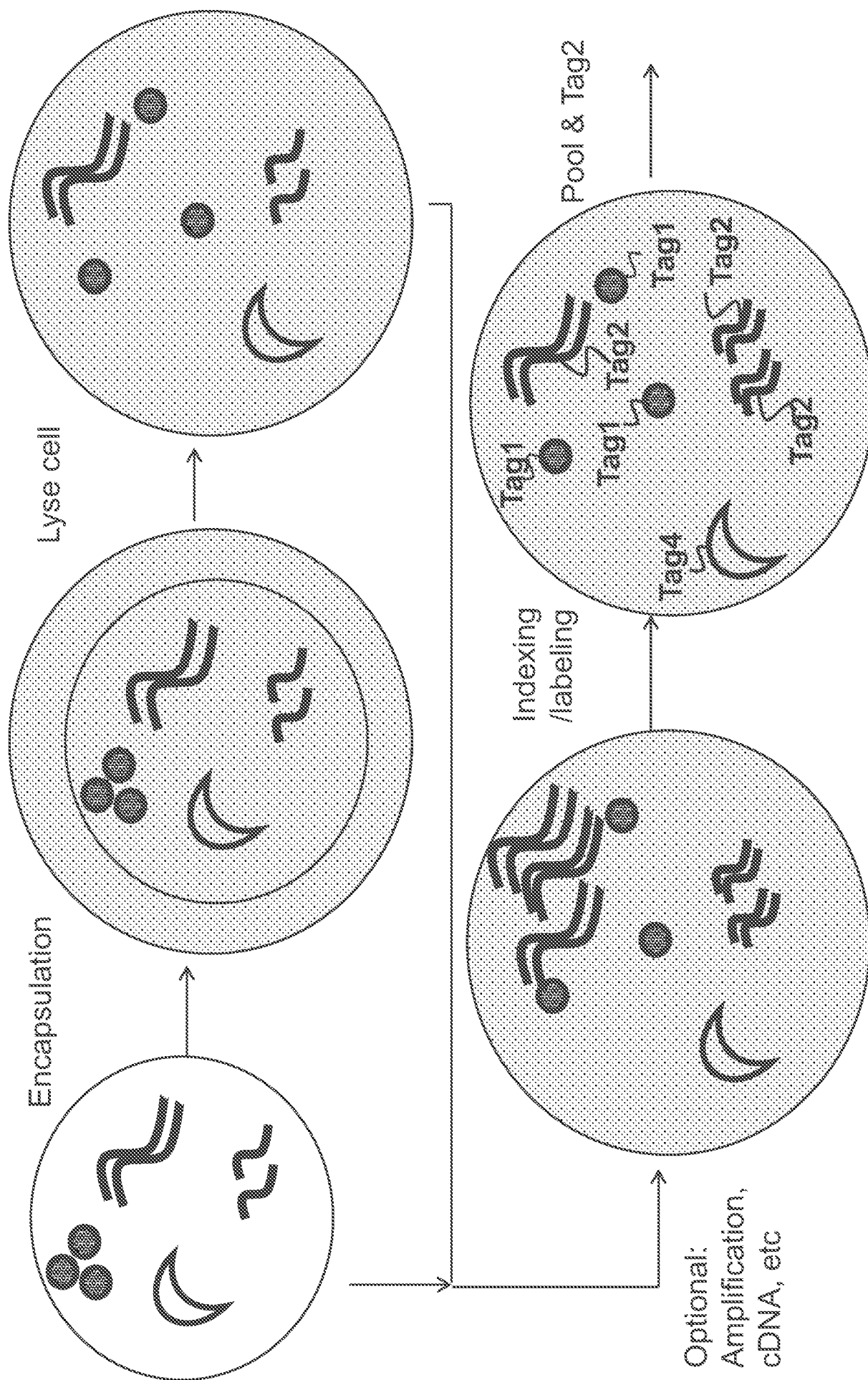
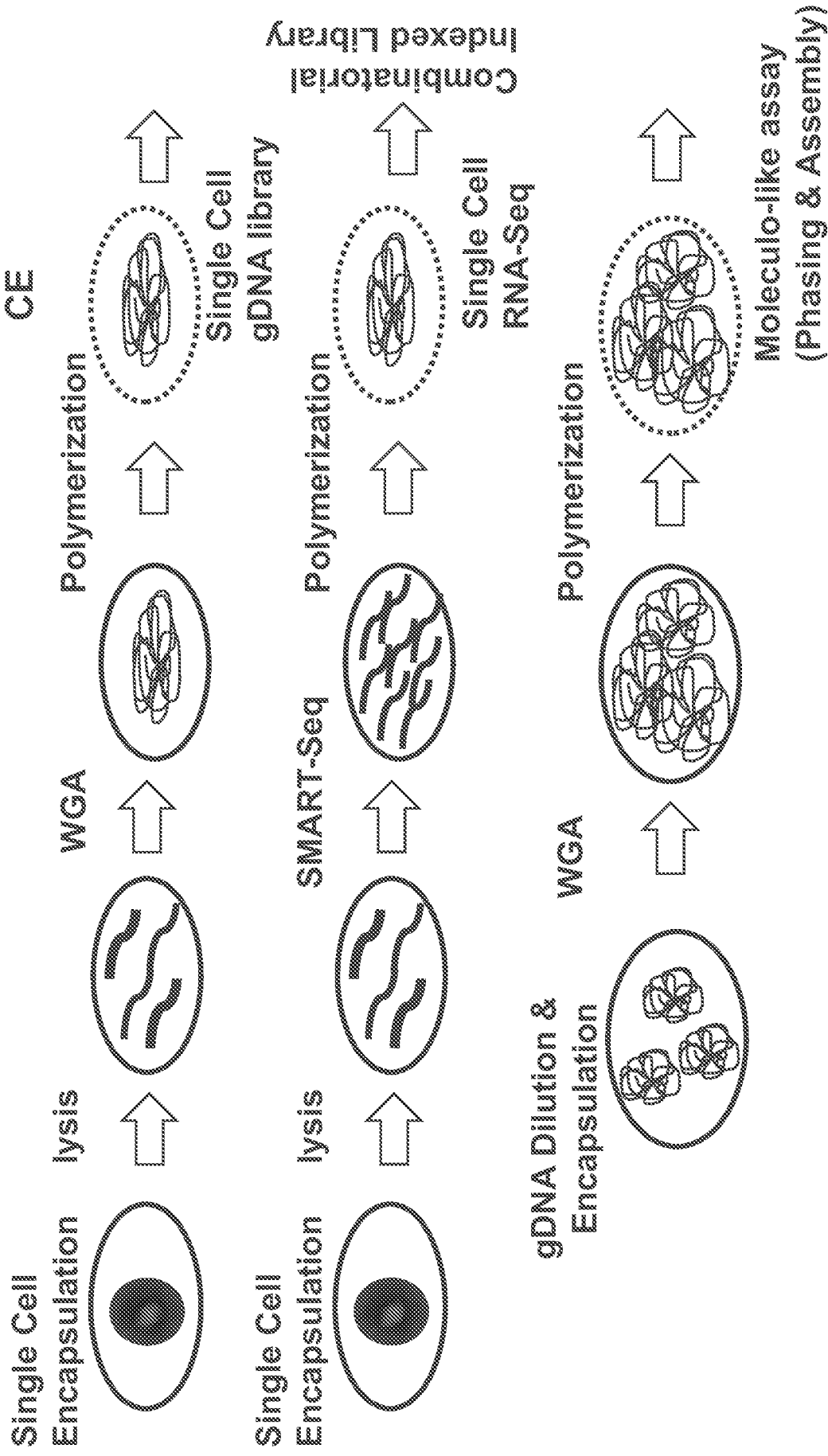


Fig. 5B: Assays customized by creation of Contiguity Elements (CE)



» Same assay framework allows single cell libraries, phasing, and assembly.

Fig. 5C: Formation of a Contiguity Element (CE)

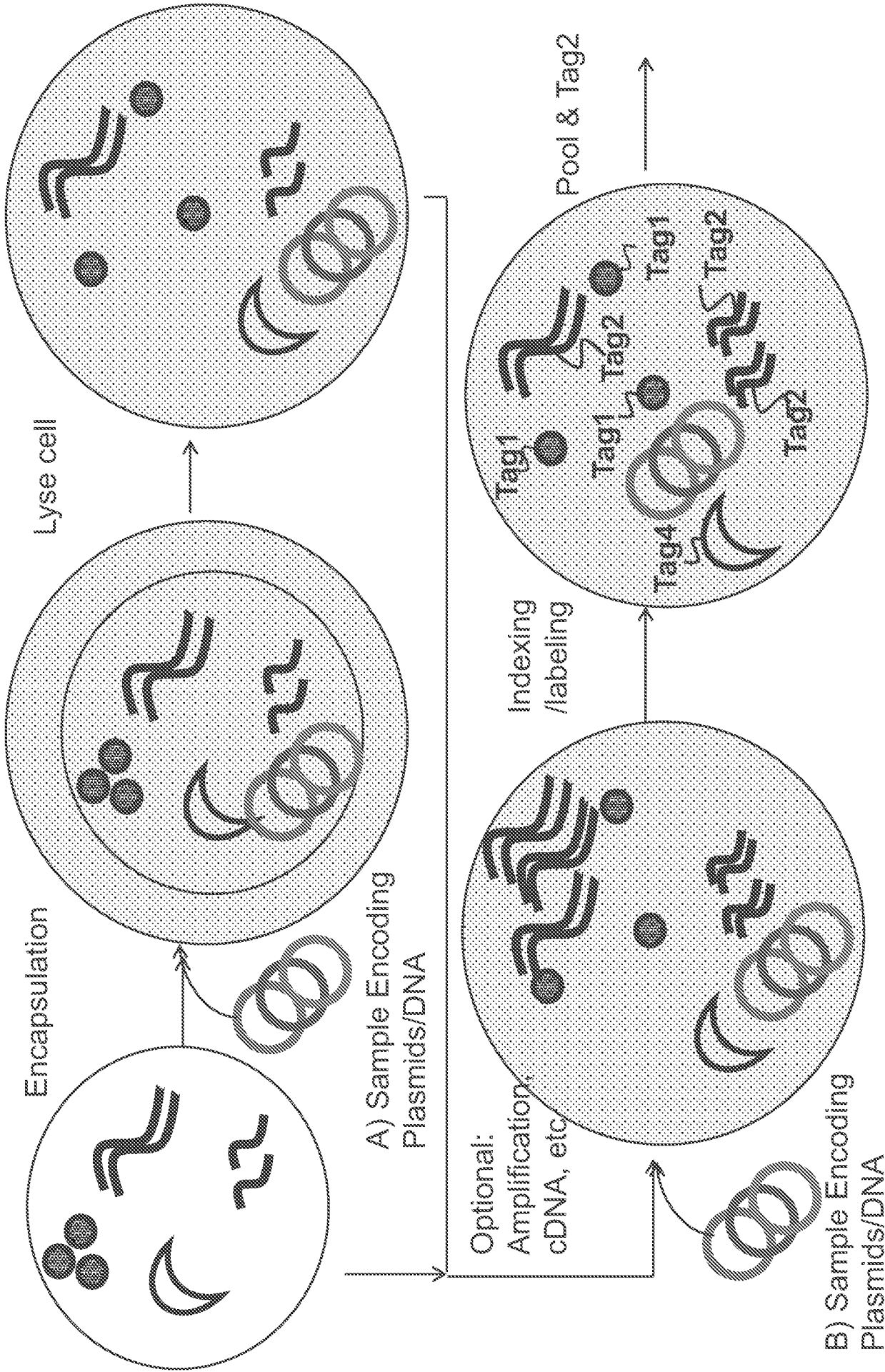
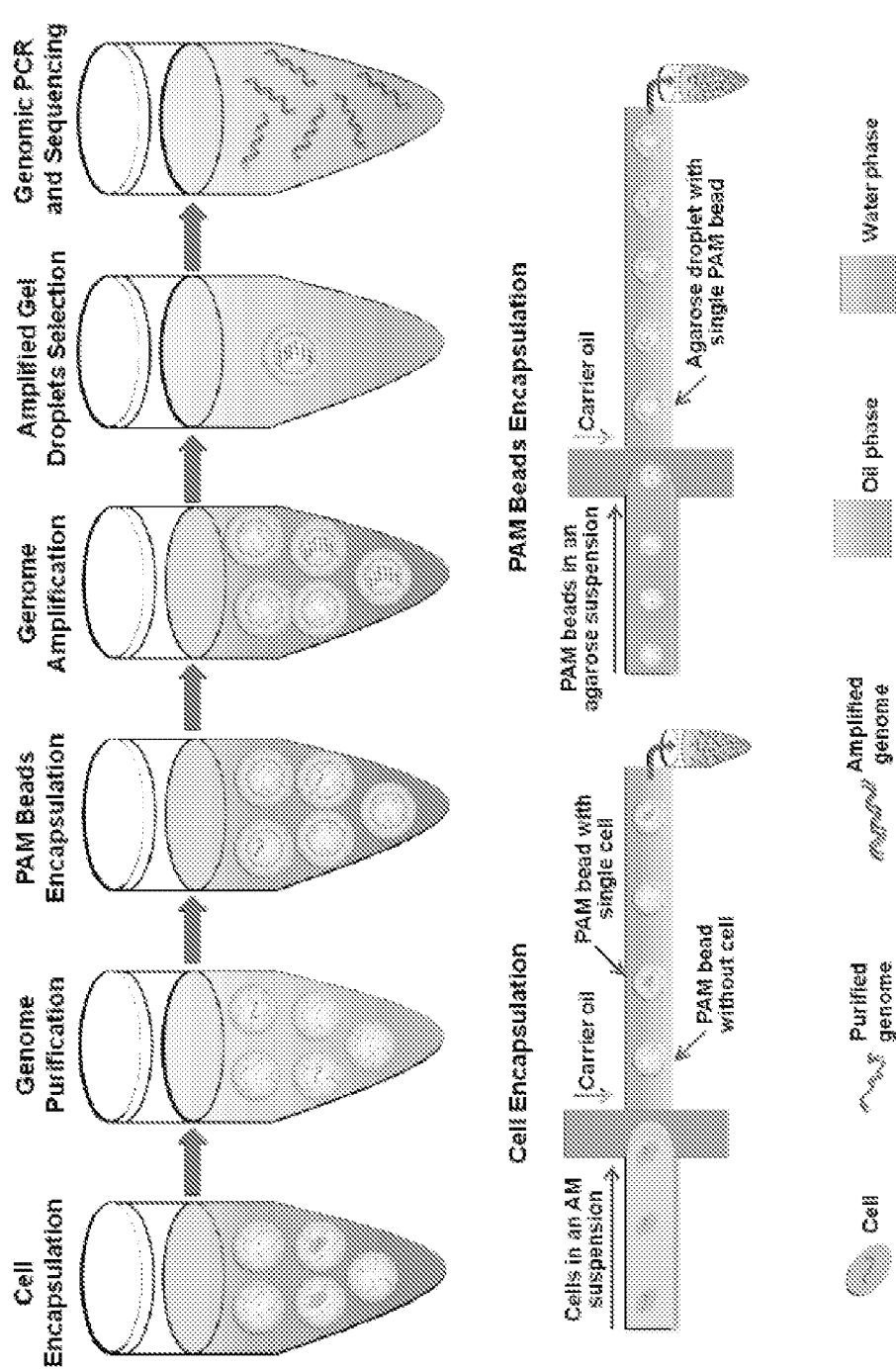


Fig. 6. Single Cell Encapsulation and Amplification



Scheme 1. Workflow diagram of strategy for high-throughput single-cell genomic sequencing

Fig. 7. High throughput analysis of cellular components by direct surface capture.

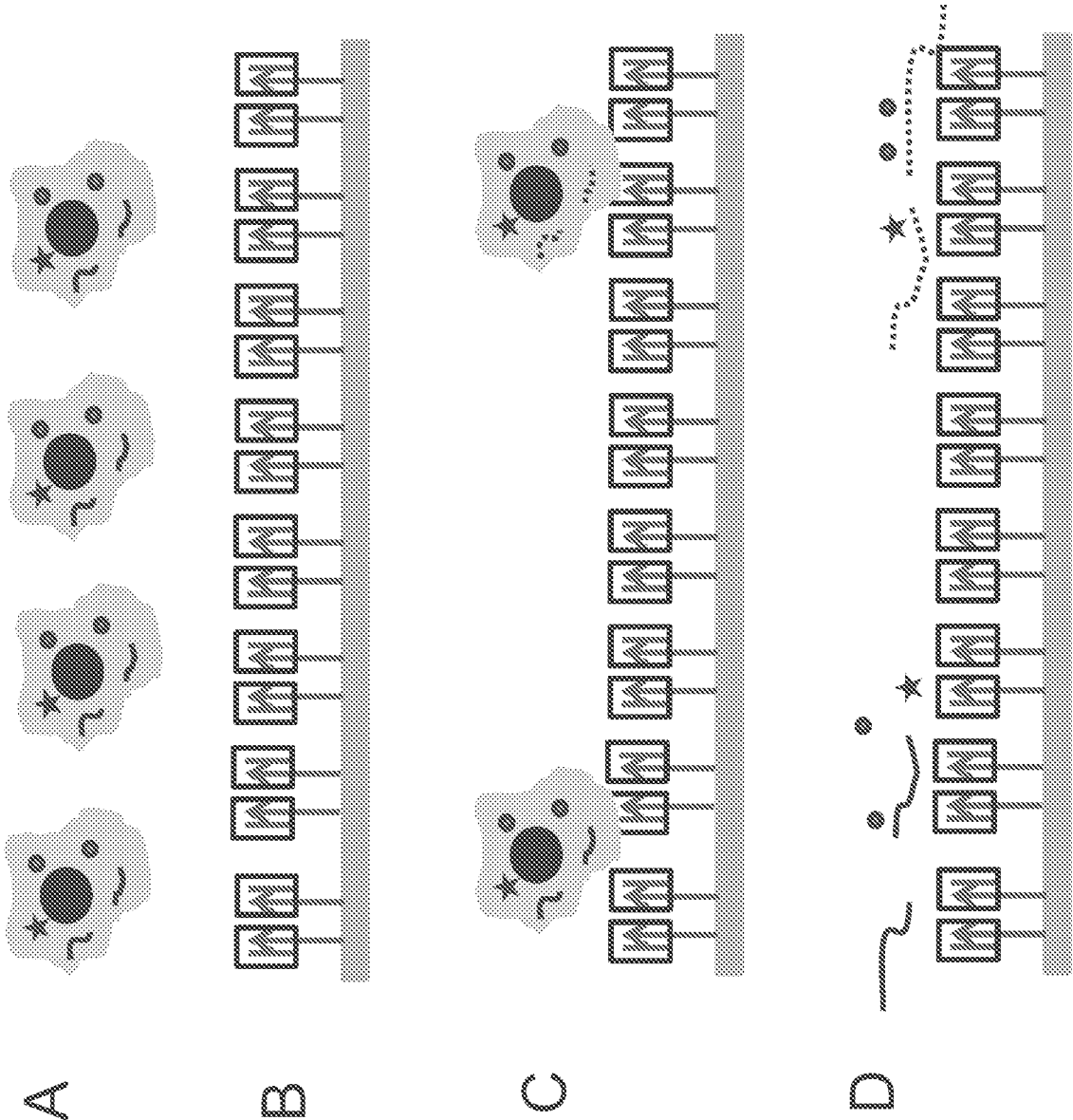


Fig. 7 (Continued).

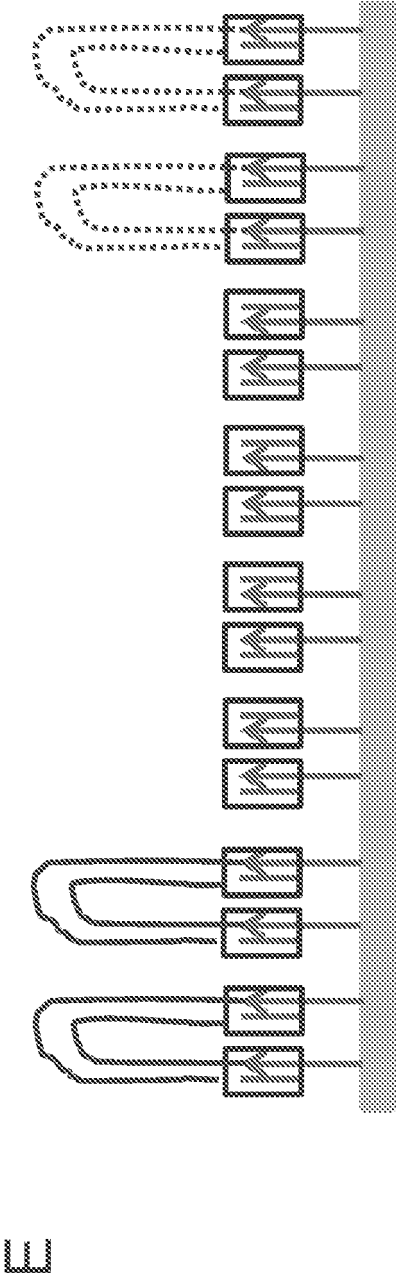


Fig. 8. Streamlining CPT-Seq: on bead workflow

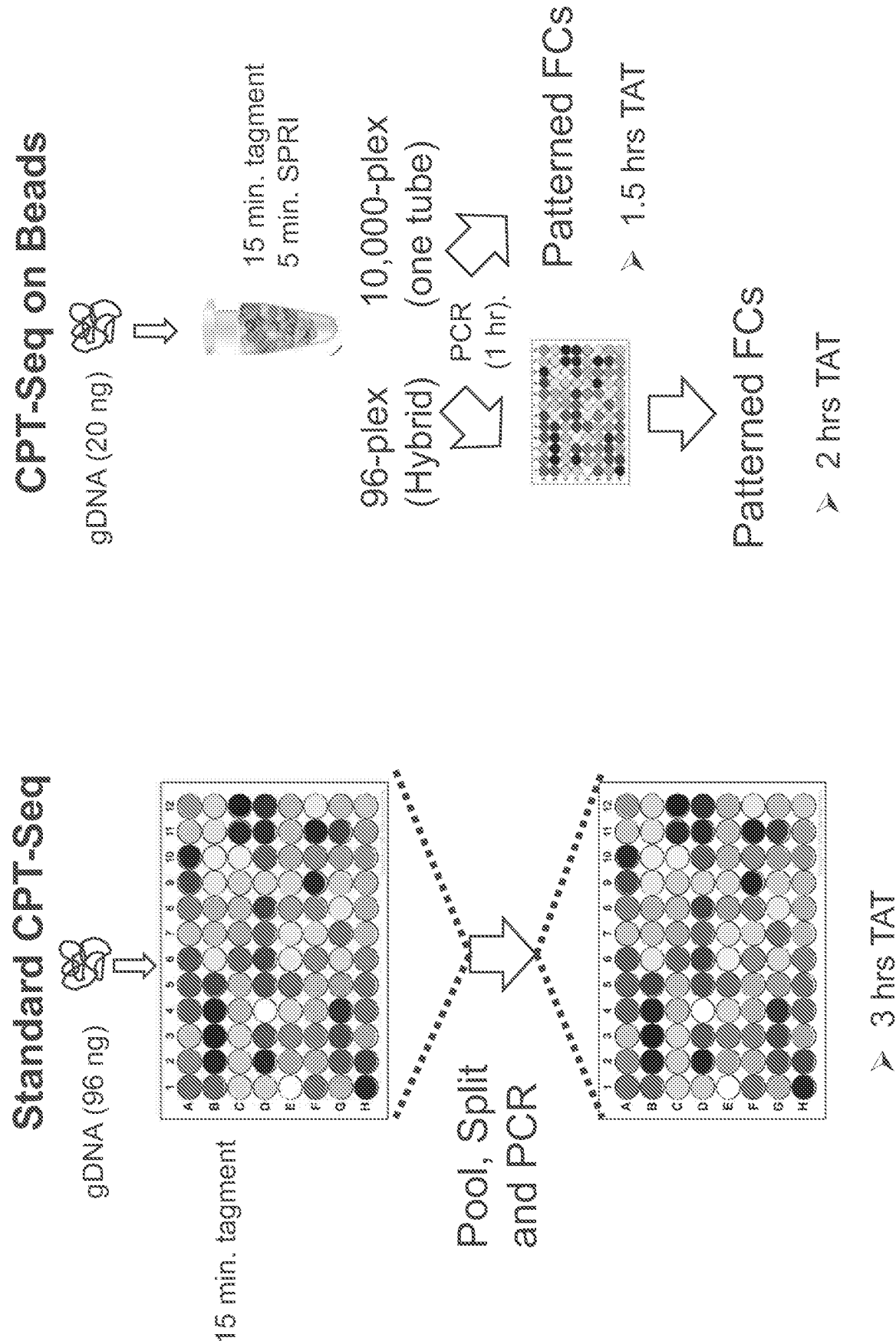


Fig. 9A. Partitioning and Mutagenesis Approach to Assemble Repeat Regions in Genomic DNA

comparison of 96 partitions to 46000 partitions

Fig. 9B. Partitioning and Mutagenesis Approach to Assemble Repeat Regions in Genomic DNA

Experimental set up

- 10kb fragment
- 10 mutations each
- Long coverage = 10
- 20% C->T mutation
- Insert size = 500bp
- 2x300bp, no sequencing error
- Ecoli genome -> 46000 10kb fragments
- Spade assembler

Fig. 9C. Partitioning and Mutagenesis Approach to Assemble Repeat Regions in Genomic DNA

96 partitions

- » Distribution of the size of contigs reported by SPAdes when analyzing in 96 partitions

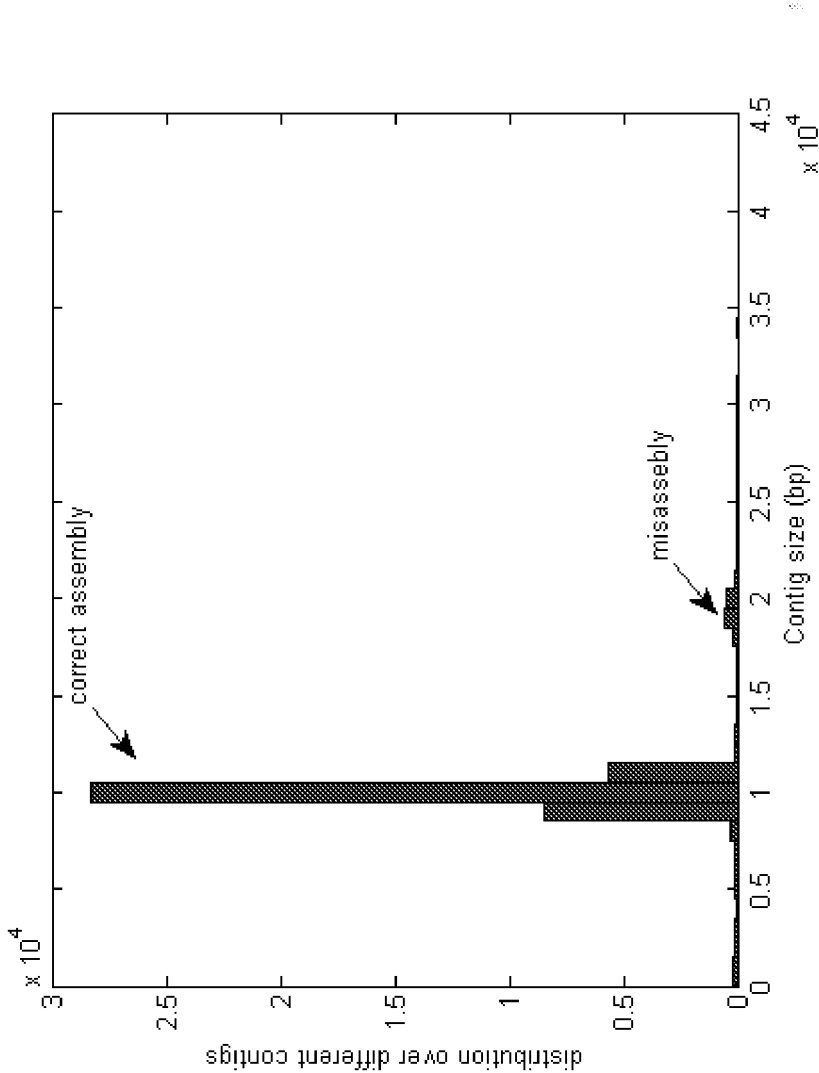


Fig. 9D. Partitioning and Mutagenesis Approach to Assemble Repeat Regions in Genomic DNA

46000 partitions

- » Distribution of the size of contigs reported by SPAdes when analyzing in 46000 partitions (each 10kb fragment in a single partition)

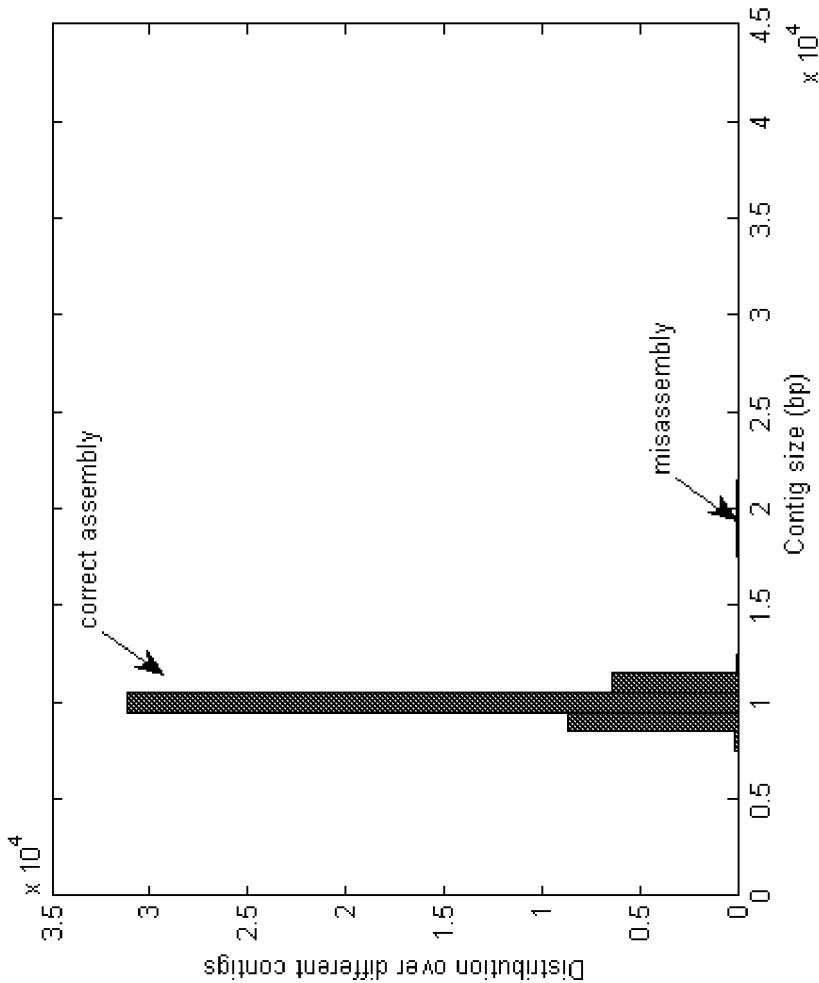


Fig. 10

