

Development of a One-Pot Drug Screening Platform Using 3' RNA Sequencing

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RNA sequencing (RNA-seq) is a powerful tool that provides insight into transcriptome profiling and uses next-generation sequencing for in-depth gene expression analysis. Different RNA-seq methods have been introduced, yet high cost and laborious processes still remain an ongoing challenge. Here, we present a high-throughput drug screening platform that is simple, highly scalable, and cost-effective (\$1.4 per sample). This method works directly on cultured cells and generates 3'-enriched mRNA libraries in a single pot.^{1,2} In-house produced Tn5 transposase enables direct tagmentation of RNA/DNA hybrids,³ yielding comparable performance with traditional RNA-seq techniques. By successfully clustering compounds based on their mode of action,⁴ this library construction method will provide a deeper understanding of transcriptomic studies for drug discovery.

References

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