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Optimization of the selector technique for parallel sequencing applications

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Abstract

With the development of second generation sequencing platforms, there is currently a need for techniques capable of massively parallel targeting of genomic regions. The selector method attempts to do this, but suffers from uneven representation of selected regions and artifact build-up. This project aimed at improving the uniformity and finding ways of increasing the specific product yield. Reduction of artifacts was attempted by enzymatic treatment and modification of the selector probe arms. RCA was applied to out-compete unspecific products and improve uniformity. The selector technique is an affordable and efficient tool for resequencing of genomic regions and should be ready for applications such as characterization of cancer cell-lines.

Keywords

Selector technique, second generation sequencing instruments, resequencing, uniformity, artifact reduction, multiplex amplification, RCA

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