

HybSelect with Cancer Exon Biochip for targeted sequencing of a cancer-related exome subset

New publication sets standards for focused analysis of relevant genomic subsets in large sample cohorts

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As a leading solution provider in the field of targeted next generation sequencing, febit continues to meet the modern requirements of today's researchers: with the HybSelect technology it becomes possible to sequence relevant subsets of a genome both with high sample throughput and at low cost. In a study that has been accepted for publication in *Genomics* (Summerer D. et al), a selective capture and sequencing of 115 cancer-related genes has been demonstrated using febit's Cancer Exon Biochip. This Biochip contains probes for an exome subset representing 115 genes identified in the Cancer Genome Project of the Wellcome Trust Sanger Institute. These genes have been identified as being highly relevant to the onset of various cancer types. Benefitting from the scalability of the Geniom Biochip technology, the HybSelect enrichment strategy enables effective adjustment of target sizes and sample numbers. Thus, it allows for analysis of smaller, relevant genomic regions, such as the cancer exon set, at the same time involving large cohorts of samples. The method provides excellent completeness of coverage that exceeds coverage uniformity previously reported for exonic targets. This is reflected in the SNP analysis, revealing a sensitivity of up to 93 % and a specificity of 98.2 % or higher for SNP calling. Since coverage of most target bases is significantly higher than the threshold of ≥ 5 -fold used for SNP calling, a severalfold increase in throughput can likely be achieved with barcoding. This multiplexing strategy has been successfully established using febit's technology and is routinely applied in studies e.g. analyzing genomic biomarkers. Studies like the Cancer Exome study set an example for an efficient follow-up of genome wide association studies involving whole genome or whole exome sequencing and for other focused studies involving gene sets known to be involved in e.g. cancer development, cardiovascular diseases or drug response.

About febit

febit develops, produces and markets flexible automated solutions for enabling biochip applications in Life Sciences. febit's product portfolio includes various instruments, optimized assays and bioanalytical services, complemented by bioinformatics software and consulting.

For its main applications – HybSelect, febit's innovative DNA capture method for Next-Generation-Sequencing and protein-coding or non-coding transcriptome profiling – the highly advanced microfluidics of the patented Geniom Biochip offers the highest degree of automation, flexibility and efficiency available.

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