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Immunosequencing: Generating a Potential New Class of Diagnostics

Abstract: Adaptive Biotechnologies' technology platform, immunoSEQ, combines the powerful capabilities of a proprietary multiplex PCR methodology with high-throughput sequencing and sophisticated bioinformatics to profile T cell and B cell receptor (TCR and BCR) repertoires. This accurate, sensitive and standardized technology is complemented by user-friendly analytical software tools that facilitate analysis, visualization, comparison and reporting of millions of unique TCR or BCR sequences. immunoSEQ is used as a research incubator to validate and spin-off clinical diagnostics. Adaptive's first diagnostic, clonoSEQ, is used to identify T/B-cell malignant clones and to monitor minimal residual disease in patients with hematologic malignancies. Adaptive is currently validating its second, novel clinical diagnostic, tilSEQ, that accurately quantifies the density and clonality of tumor infiltrating lymphocytes in patients with solid tumors. tilSEQ has potential prognostic and predictive applications, which includes the monitoring of a patient's immune response over time. Adaptive continues to pursue additional applications of its immunoSEQ platform in infectious disease, transplantation and autoimmunity.