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(54) **Title:** UNIQUELY TAGGED REARRANGED ADAPTIVE IMMUNE RECEPTOR GENES IN A COMPLEX GENE SET

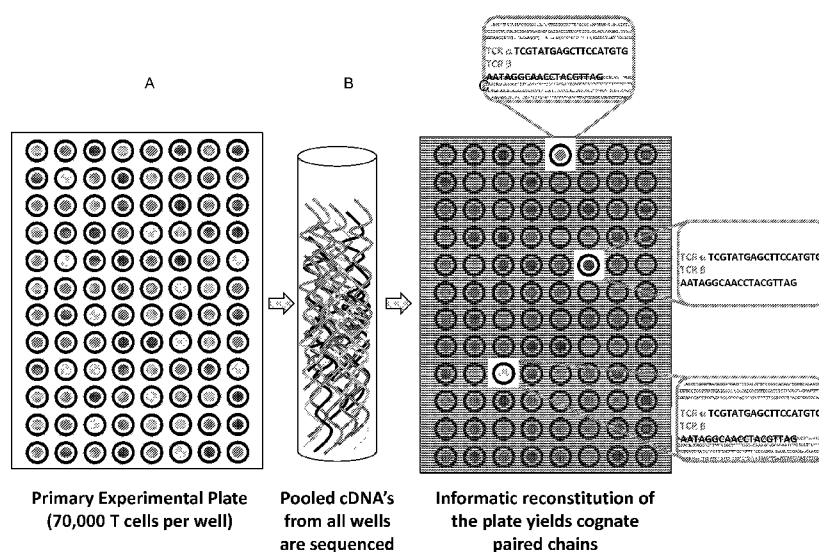


FIG. 8

(57) **Abstract:** Compositions and methods are disclosed for uniquely tagging each rearranged gene segment that encodes a T cell receptor (TCR) and/or an immunoglobulin (Ig), in a DNA (or mRNA or cDNA reverse transcribed therefrom) sample from lymphoid cells. These and related embodiments permit accurate, high throughput quantification of distinct TCR and/or Ig encoding sequences. Also provided are compositions and methods for quantitatively sequencing the genes that encode both chains of a TCR or Ig heterodimer in a single cell, for example, to characterize the degree of T or B cell clonality in a sample.