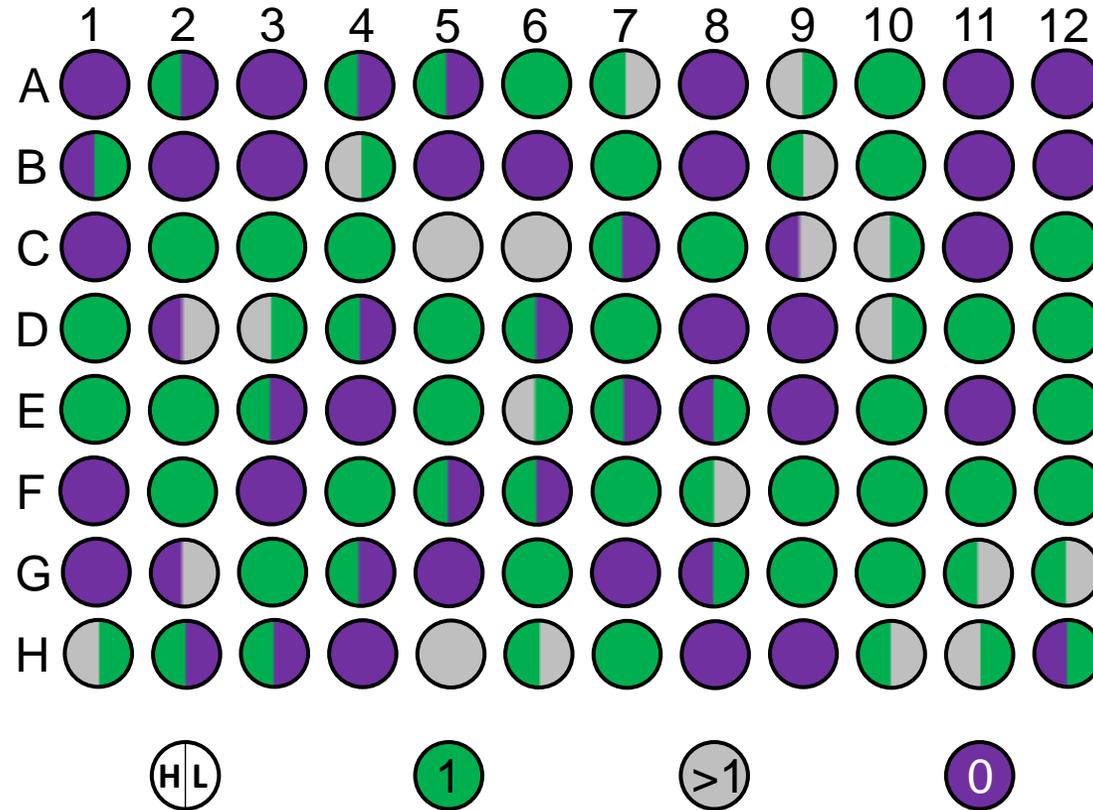
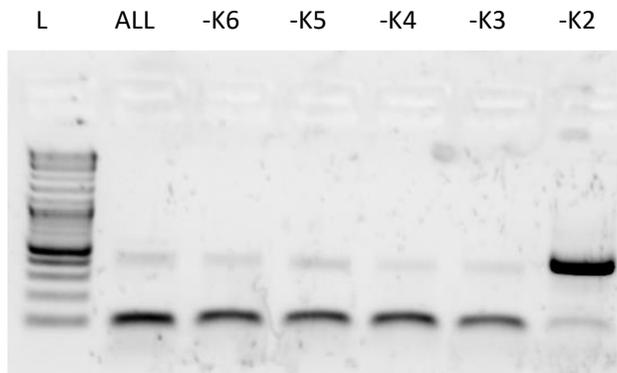


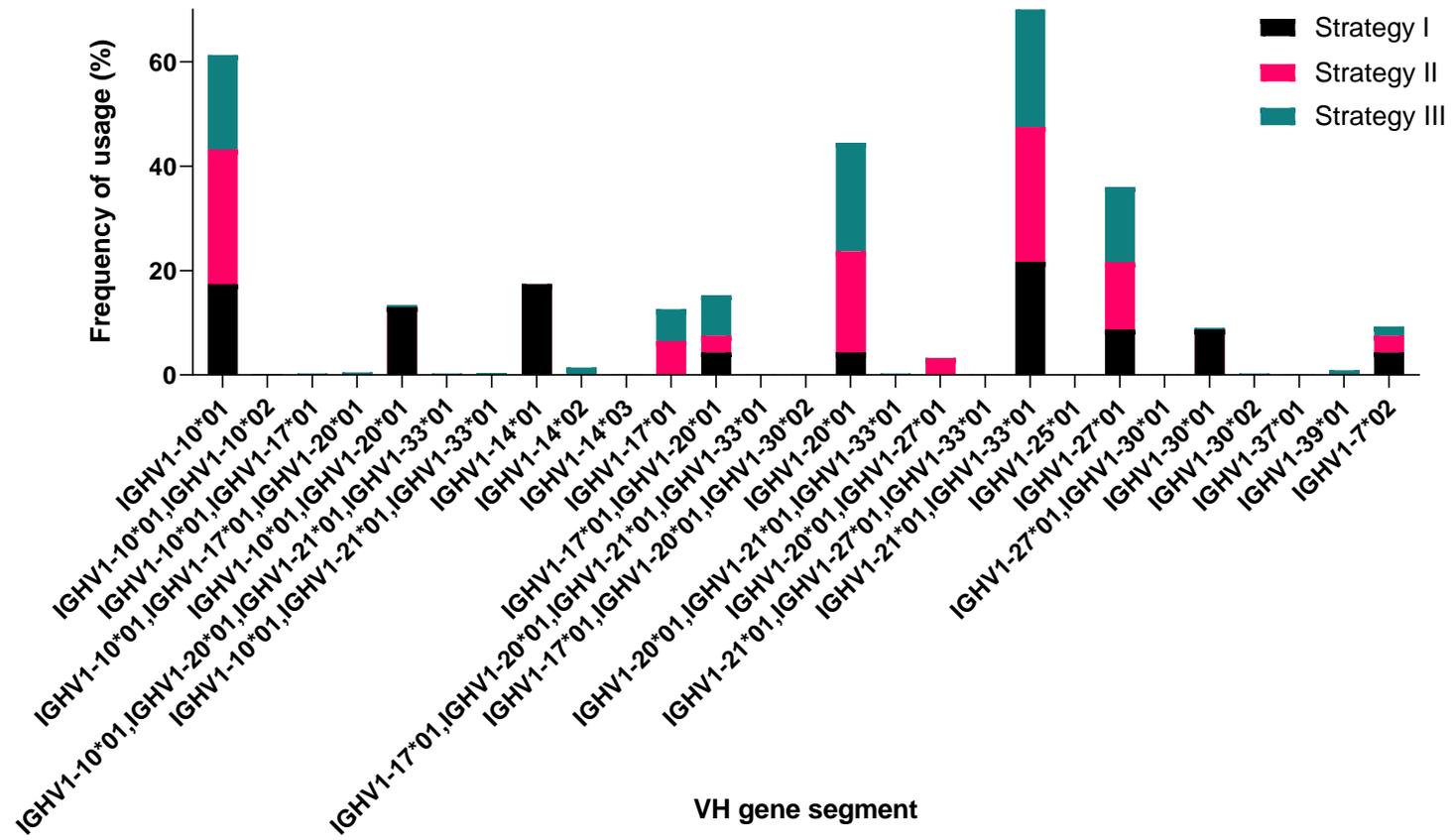
**Figure S1A:** Graphic representation of H and L chains recovery by the low throughput amplification and sequencing strategy from 84 single cells sorted in rows A to G. The left side of the well represents the H chain status and the right side represents the L chain status. Green represents a unique chain amplification, grey represents multiple chains amplified, and purple represents failed sequencing of a productive chain.



**Figure S1B:** Graphic representation of H and L chains recovery by the medium throughput amplification and sequencing strategy from 96 single cells sorted in rows A to H. The left side of the well represents the H chain status and the right side represents the L chain status. Green represents a unique chain amplification, grey represents multiple chains amplified, and purple represents failed sequencing of a productive chain.



**Figure S2:** Testing IgK multiplexing. cDNA amplification of IgK rearrangements with IgK\_C2 paired with all IgK V gene segment specific primers (ALL, amplicon expected size: ~500bp), or all except one of the forward primers at a time (-K2 to -K6 for IgK\_L2 to IgK-L6 primers), showing that IgK\_L1 inhibits the multiplexed reaction and cannot be included for multiplexing. L: NEB 1Kb Plus ladder.



**Figure S3:**  $V_H$  gene segment usage. Usage frequencies of the heavy chain variable ( $V_H$ ) gene segments used by antibody pairs recovered using amplification strategy I (black), strategy II (pink) and strategy III (cyan).