



**Figure S2 Characterization of 6 scFv-APOBEC systems in reporter system.**

- a. Analysing the base editing efficiency of 6 scFv-APOBEC systems and BE3 by blue/white colony screening. HEK293FT cells were co-transfected with the mutation reporter vector pSP189 together with 6 scFv-APOBEC systems or BE3. The base editing efficiency was calculated using the white colony formation assay. The number of white colonies among the total number of colonies in sgRNAs F1, F2 and F3 was calculated. Error bars ( $\pm$ ) indicate the standard deviations of 3 replicates.
- b. Analysing the base editing window of 6 scFv-APOBEC systems by Sanger sequencing. The white colonies described above were collected and subjected to Sanger sequencing. The average C-to-T conversion rate of 12 positions of the protospacers (C1, C2, C5, C6, C9, C10, C11, C12, C14, C15, C18, and C19) of 3 sgRNAs (sgRNAs F1, F2 and F3) were calculated. Error bars ( $\pm$ ) indicate the standard deviations of 3 replicates.