

**Data S1. (DataS1ArrayAll.csv)**

CAR library screening array data shown in Figures 1-3. Motifs are labeled 1 through 13 as shown in Figure 1C. Motif 17 corresponds to CD3z.

**Data S2. (DataS2ArrayTraining.csv)**

Training data set from CAR library screening array data shown in Figure 2. Motifs are labeled 1 through 13 as shown in Figure 1C. Motif 17 corresponds to CD3z.

**Data S3. (DataS3ArrayTest.csv)**

Test data set from CAR library screening array data shown in Figure 2. Motifs are labeled 1 through 13 as shown in Figure 1C. Motif 17 corresponds to CD3z.