## **Description of Additional Supplementary Files**

Supplementary Data 1: HDX data: Deuterium uptake values of PDE3A<sup>CAT</sup>:BRD9500 and PDE3A<sup>CAT</sup>:BRD9500:SLFN12.

Supplementary Data 2: Enrichment scores for mutant alleles in the deep mutational scanning experiment.

**Supplementary Movie 1: Dynamics observed between PDE3A**<sup>CAT</sup> **and SLFN12 during data collection.** Movie depicting the middle 80% of the particle movement range distribution along the most significant (representing ~ 30% of the variance) eigenvector of particle alignment changes between the SLFN12 body and the PDE3A<sup>CAT</sup> body. Orientation and color scheme is as shown in Figure 5A.