**Supplementary file 2**

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| **Figure** | **Outliers** | **Exclusion Criterion** |
| **1C,1D** | 1 *Akt2* WT male, 1 *Akt2* KO male, 1 *Akt2* WT female, 1 *Akt3* WT female | Grubbs’ method (distance moved) |
| **3A,3B** | 3WT males, 1KO male | Equipment error |
| **3C,3D** | 2 KO males, 1 WT female | Equipment error |
| **3E,3F** | 1 WT male, 2 KO males, 1 KO female | Equipment error |
| **4A,4B** | 3 WT males, 1 KO male | Equipment error |
| **4C,4D** | 1 WT male, 1 KO male,2 WT females, 1 KO female | Equipment error |
| **4E,4F** | 1 WT male,2 WT females, 2 KO females | Equipment error |
| **5D** | 1 *Akt1* KO-sham | Surgical exclusion based on GFP expression |
| **5E** | 2 *Akt1* WT-sham,3 *Akt1* KO-*AKT1* | Subjects died pre-renewal testing  |
| **6D,6E** | 1 *Akt1* cKO | Grubbs’ method (pre-CS freezing) |
| **7A,7B** | 1 *Akt1* cKO *Akt3* KO female | Grubbs’ method (distance moved) |
| **7C** | 1 *Akt1* cKO *Akt3* KO male | Failed to meet training criterion of 50% of D1 latency by D8 |
| **7F** | 1 *Akt1* cKO *Akt3* KO female | Equipment error |
| **8** | 1 *Akt3* WT female | Grubbs’ method (signal intensity) |
| **9-figure supplement 2** | 1 *Akt3* WT female1 *Akt3* KO female | Grubbs’ method (signal intensity) |