

**Table S1. Summary of Solexa Sequencing**

| Sequencing Scale      |           | Non-redundant Solexa tags |                 |                | Solexa reads |               |                 |
|-----------------------|-----------|---------------------------|-----------------|----------------|--------------|---------------|-----------------|
|                       |           | total tag #               | unique tag #    | multiple tag # | total read # | unique read # | multiple read # |
| wild<br>type<br>flies | Mock ChIP | 3,381,912                 | 2,525,205       | 856,707        | 4,038,814    | 2,574,146     | 1,464,668       |
|                       | H3        | 5,693,771                 | 4,747,317       | 946,454        | 6,351,188    | 5,046,304     | 1,304,884       |
|                       | HP1a      | 2,677,024                 | 2,085,608       | 591,416        | 2,967,286    | 2,114,682     | 852,604         |
|                       | RNA polII | 4,366,407                 | 3,861,312       | 505,095        | 5,626,556    | 4,805,130     | 821,426         |
|                       | H3K4me3   | 5,131,829                 | 4,234,712       | 897,117        | 5,650,921    | 4,339,650     | 1,311,271       |
|                       | H3K9me3   | 3,824,497                 | 2,970,904       | 853,593        | 4,543,831    | 3,157,785     | 1,386,046       |
|                       | H3K9ac    | 2,536,989                 | 2,355,671       | 181,318        | 3,054,914    | 2,556,881     | 498,033         |
|                       | H3K27me3  | 7,722,000                 | 6,176,152       | 1,545,848      | 8,979,461    | 6,392,159     | 2,587,302       |
|                       | Total:    | 37,983,462                | 7.9 X coverage* |                | 44,095,341   |               |                 |

Note\*: 1 X coverage = 168,717,020 bp (total genome size) / 35bp (tag length) = 4,820,486 Solexa tags