## SUPPLEMENTARY

### Table S1. List of primers.

|  |  |
| --- | --- |
| Primera | Sequenceb |
| ASHH2-CW-D870A FWASHH2-CW-D870A RVASHH2-CW-insC866-SFPN-C871 FWASHH2-CW-insC866-SFPN-C871 RVASHH2-CW-I915A FWASHH2-CW I915A RVASHH2-CW L919A FWASHH2-CW L919A RV | 5’-TCGATGTGATgccTGCTTTAAATGGCGAC5’-ACCCAGGCACTCTCTGTG5’-cctaacTGCTTTAAATGGCGACGAATAC5’-aaatgaACATCGAACCCAGGCACT5’-AGAGTTGGGCATAGGACAGGATG5’-TCATTagcTTCTTCATTTGACATCTCTTGAGATTTTGAGC5’-AGAGgctGGCATAGGACAGGATGAAG5’-TCATTAATTTCTTCATTTGACATCTCTTGAG |

aFW and RV indicate forward and reverse primers, respectively.

bLower case indicates mutated codons.

### Table S2. Histone mimicking peptides.

|  |  |  |
| --- | --- | --- |
| Name | Sequence | Manufacturer |
| H3H3K4me1H3K4me2H3K4me3 | ARTKQTARY\*ARTK(me1)QTARY\*ARTK(me2)QTARY\*ARTK(me3)QTARY\* | LifeTein LLC (95% purity)LifeTein LLC (95% purity)LifeTein LLC (95% purity)LifeTein LLC (95% purity) |

\*An additional tyrosine was introduced for concentration determination by absorption at 280 nm (NanoDrop), and an extinction coefficient of 1490 M-1 cm-1 was used.

### Table S3. Summary of ITC data.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Ligand | Temperature, K | ΔH, kJ/mol | TΔS, kJ/mol | ΔG, kJ/mol | Kd, μM |
| CW wild typeH3K4me1H3K4me2H3K4me3D870AH3K4me1H3K4me2H3K4me3L919AH3K4me1 | 298.15298.15298.15298.15298.15298.15298.15 | -89.25±8.58-83.64±3.11-60.14±1.38-79.22±4.81-93.33±3.65-57.47±2.37-76.92±2.31 | -57.37±7.14-53.18±3.23-32.47±1.49-45.70±4.10-64.03±3.59-30.45±2.65-48.84±1.97 | -31.88±2.78-30.46±0.15-27.67±0.13-33.52±0.71-29.29±0.23-27.02±0.29-28.08±0.42 | 1.31±0.324.61±0.2814.18±0.741.37±0.327.48±0.7218.53±2.1712.17±2.10 |



Figure S1.

Overlaid HSQC spectra of CW wild type in free state (red) and bound to H3K4me1 (blue), H3K4me2 (green) and H3K4me3 (orange) peptides.



Figure S2

Titration curves and integrated data of: A-C – CW wt with H3K4me1/2/3 peptides; D-F – D870A with H3K4me1/2/3 peptides; G-I – L919A with H3K4me1/2/3 peptides; J – CW wt with H3 unmodified peptide; K – insC866-SFPN-C871 with H3K4me1 peptide; L – I915A with H3K4me1 peptide. In H-L no sigmoidal curve could be fitted.