

Table S1: Published *in vitro* dissociation constants for NuA3 and MOZ/MORF histone-PTM binding domains.

| Domain | Peptide | K_D (μM) | Reference |
|-----------------|--------------|------------------------------|---|
| Yng1 PHD finger | H3K4me3 | 2.3 +/- 0.9, 9.1 +/- 1.6 | (Shi <i>et al.</i> 2007), (Taverna <i>et al.</i> 2006) |
| | H3K4me2 | 21.4 +/- 3.0 | (Taverna <i>et al.</i> 2006) |
| | H3K4me1 | 50.7 +/- 7.6 | (Taverna <i>et al.</i> 2006) |
| | H3K4me0 | >400 | (Taverna <i>et al.</i> 2006) |
| Pdp3 PWWP | H3K36me3 | 69.5 +/- 3.7 | (Gilbert <i>et al.</i> 2014) |
| | H3K36me2 | 414 +/- 23 | (Gilbert <i>et al.</i> 2014) |
| | H3K36me1 | >1000 | (Gilbert <i>et al.</i> 2014) |
| | H3K36me0 | >1000 | (Gilbert <i>et al.</i> 2014) |
| | H3K79me3 | 434 +/- 49 | (Gilbert <i>et al.</i> 2014) |
| | H4K20me3 | > 1000 | (Gilbert <i>et al.</i> 2014) |
| Taf14 YEATS | H3K9ac | 150.6 +/- 14.5 | (Shanle <i>et al.</i> 2015) |
| | H3K9,14,18ac | 49.9 +/- 2 | (Shanle <i>et al.</i> 2015) |
| | H3K9cr | 9.5 +/- 0.5 | (Andrews <i>et al.</i> 2016) |
| ING5 PHD finger | H3K4me3 | 2.4 +/- 1.0 | (Champagne <i>et al.</i> 2008) |
| | H3K4me2 | 16 +/- 1.2 | (Champagne <i>et al.</i> 2008) |
| | H3K4me1 | 222 +/- 17 | (Champagne <i>et al.</i> 2008) |
| | H3K4me0 | 261 +/- 34 | (Champagne <i>et al.</i> 2008) |
| BRPF1 PWWP | H3K36me3 | 2700 +/- 200, 2900 - 4000 | (Vezzoli <i>et al.</i> 2010), (Wu <i>et al.</i> 2011) |
| | H3K36me2 | very weak | (Wu <i>et al.</i> 2011) |
| | H3K36me0 | NB | (Wu <i>et al.</i> 2011) |
| | H3K4me3 | NB | (Wu <i>et al.</i> 2011) |
| | H3K79me3 | very weak | (Wu <i>et al.</i> 2011) |
| | H3K9me3 | NB | (Wu <i>et al.</i> 2011) |