

**Table S1: Summary of CPD Repair Activity in Different Chromatin States**

| Chromatin Type           | Overall Repair <sup>a,b</sup> | TS Repair <sup>a,b</sup> | NTS Repair <sup>a,b</sup> | Transcriptional Repair Asymmetry <sup>a,c</sup> | Median RPKM <sup>d</sup> | Nucleosome Repeat Length | Translational Repair Period <sup>e</sup> |
|--------------------------|-------------------------------|--------------------------|---------------------------|---|--------------------------|--------------------------|--|
| Repressive Chromatin     | -0.577                        | -0.440                   | -0.559                    | 0.119   | 0.000                    | 184.8                    | 184.8                                    |
| PcG Hetero-chromatin     | 0.052                         | 0.279                    | -0.017                    | 0.296   | 0.174                    | 183.2                    | 183.8                                    |
| Centromeric Chromatin    | -0.302                        | 0.241                    | -0.687                    | 0.928   | 23.022                   | 179.1                    | -- <sup>f</sup>                          |
| Inducible Euchromatin    | 1.080                         | 1.422                    | 0.427                     | 0.995   | 28.655                   | 181.2                    | -- <sup>f</sup>                          |
| Constitutive Euchromatin | 0.150                         | 0.389                    | -0.401                    | 0.790   | 29.604                   | 173.9                    | 173.7                                    |

<sup>a</sup> Repair activity measured 30 minutes after UV exposure and normalized to cellular damage data

<sup>b</sup> Data displayed as:  $\text{Log}_2(\text{repair} / \text{damage})$

<sup>c</sup> Data displayed as:  $\text{Log}_2([\text{TS repair} / \text{TS damage}] / [\text{NTS repair} / \text{NTS damage}])$

<sup>d</sup> Reads Per Kilobase per Million mapped reads, a measure of transcription of genes resident in each chromatin state

<sup>e</sup> Derived from repair activity measured 30 minutes after UV exposure and normalized to cellular damage data

<sup>f</sup> Translational repair periods omitted where no clear signal was present