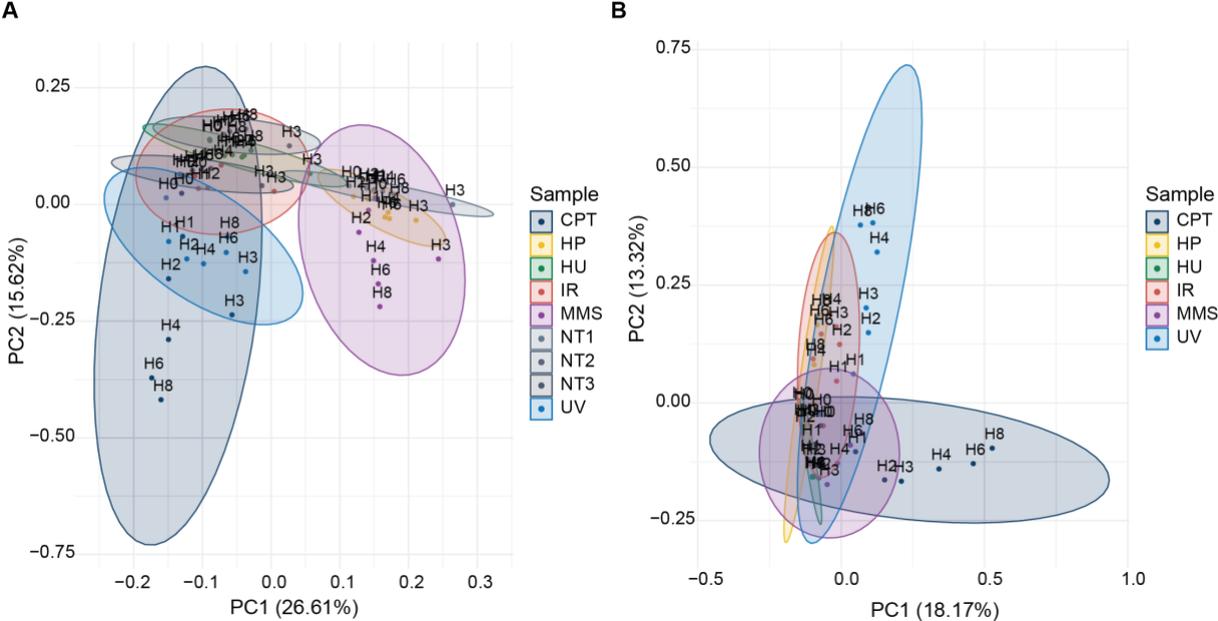


Supplemental Materials for

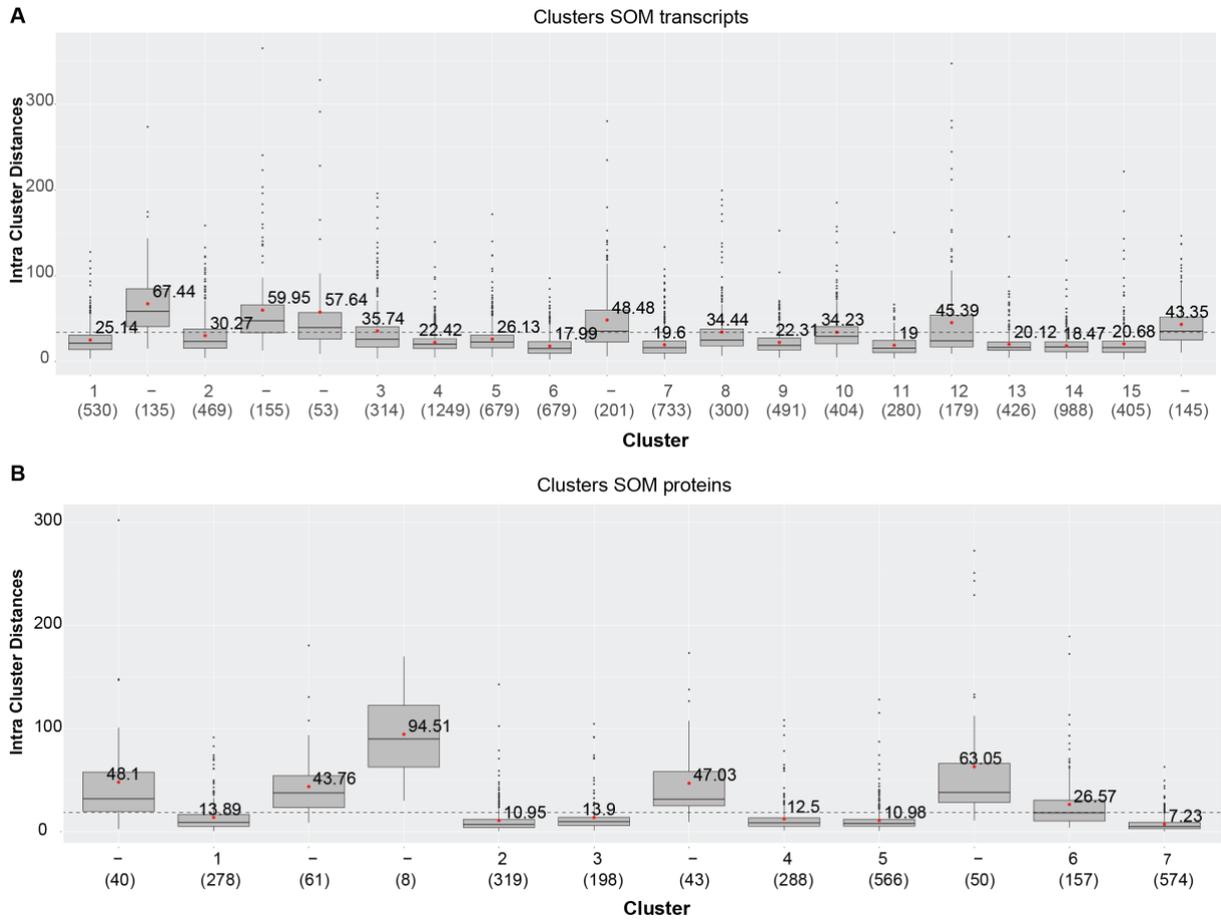
A systems view on DNA damage response kinetics

Emily Nischwitz, Vivien A.C. Schoonenberg, Rachel Mullner, Albert Fradera-Sola, Susanne Zimbelmann, Joshua J. Smith and Falk Butter

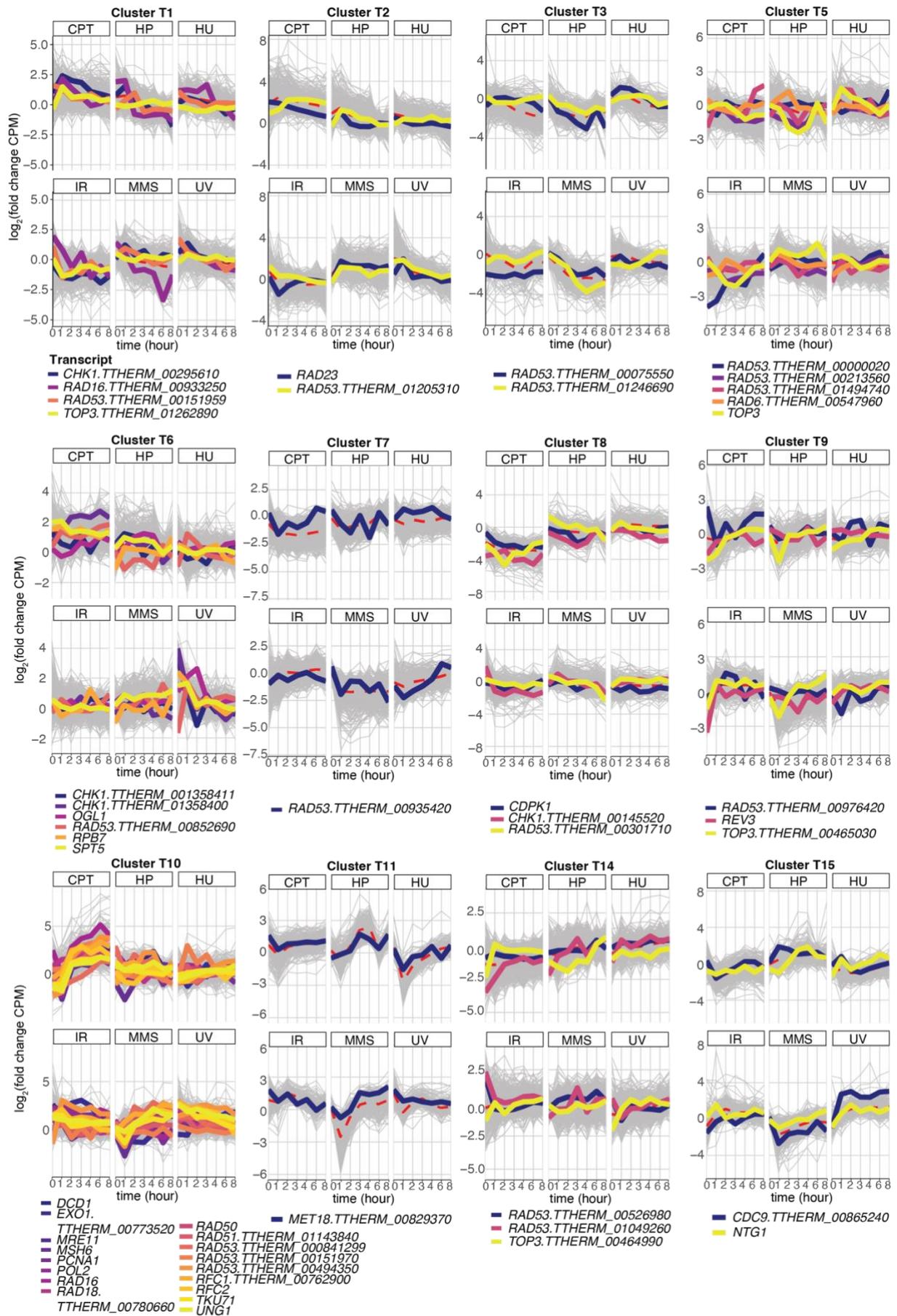
Supplemental Figures



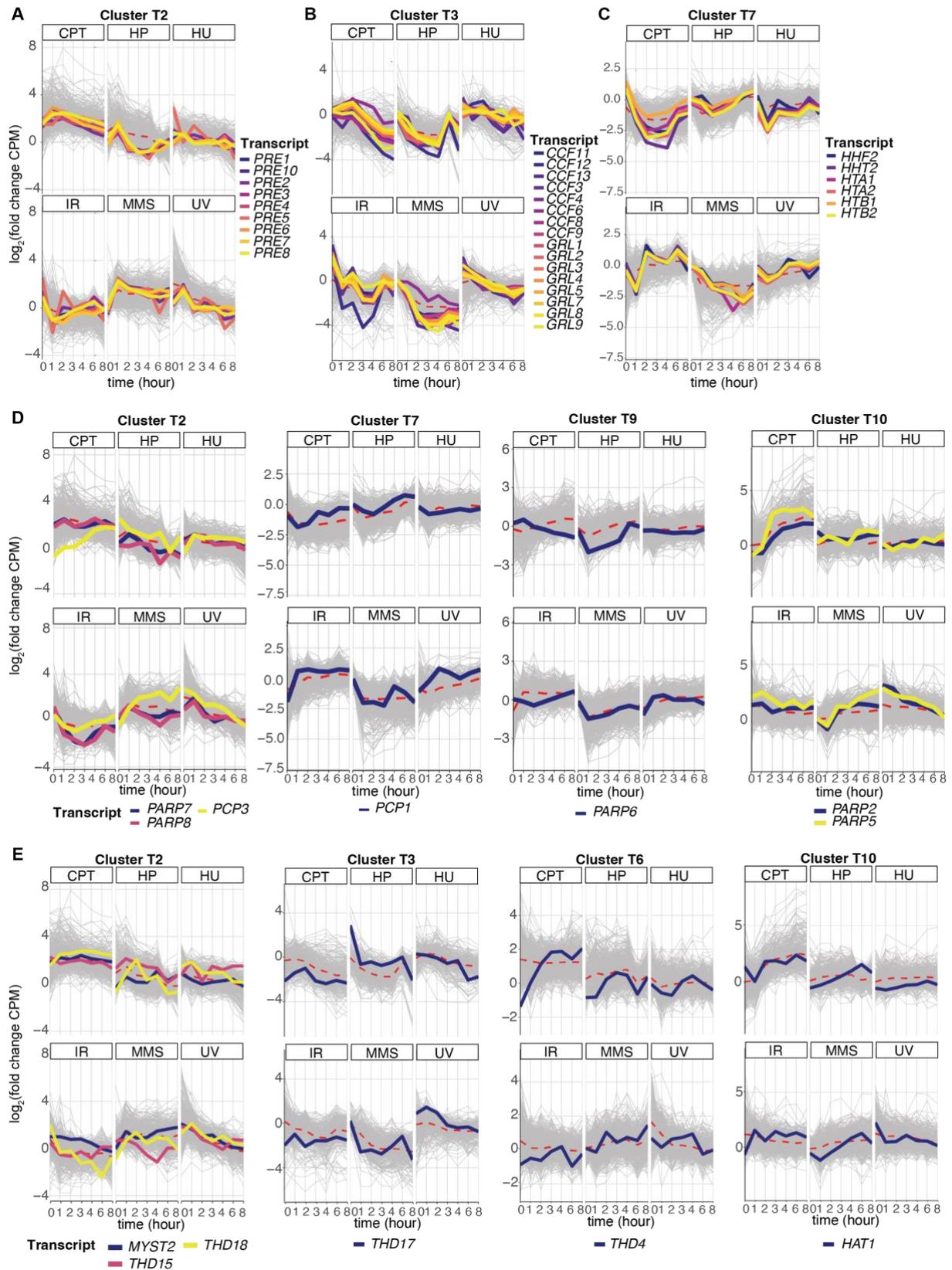
Supplemental Figure S1. Principal component analysis of all protein samples measured before and after normalization to matched non-treated sample sets.



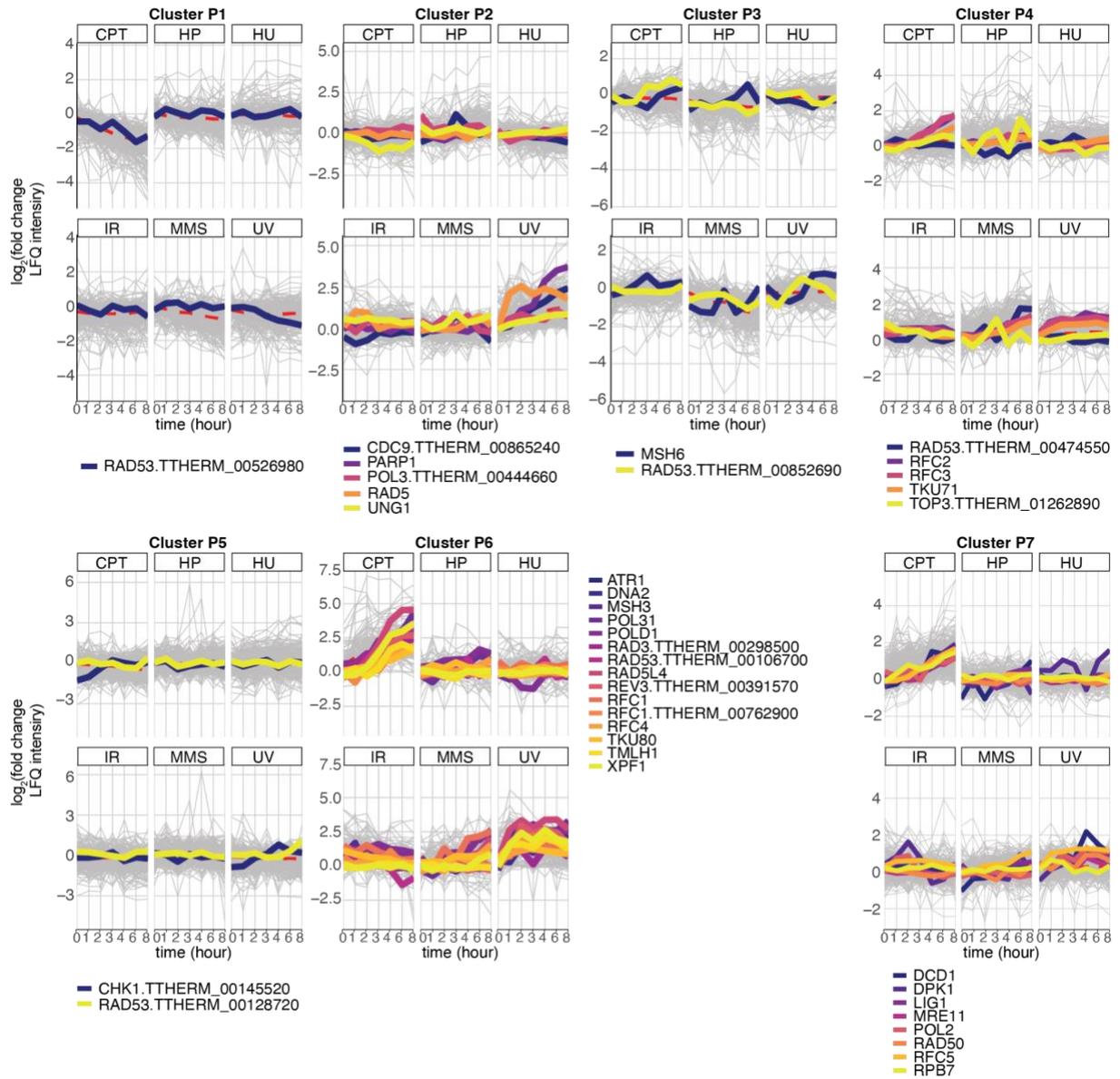
Supplemental Figure S2. Selection of clusters by Self Organizing Maps based on intra cluster distance for **A)** RNA and **B)** proteins.



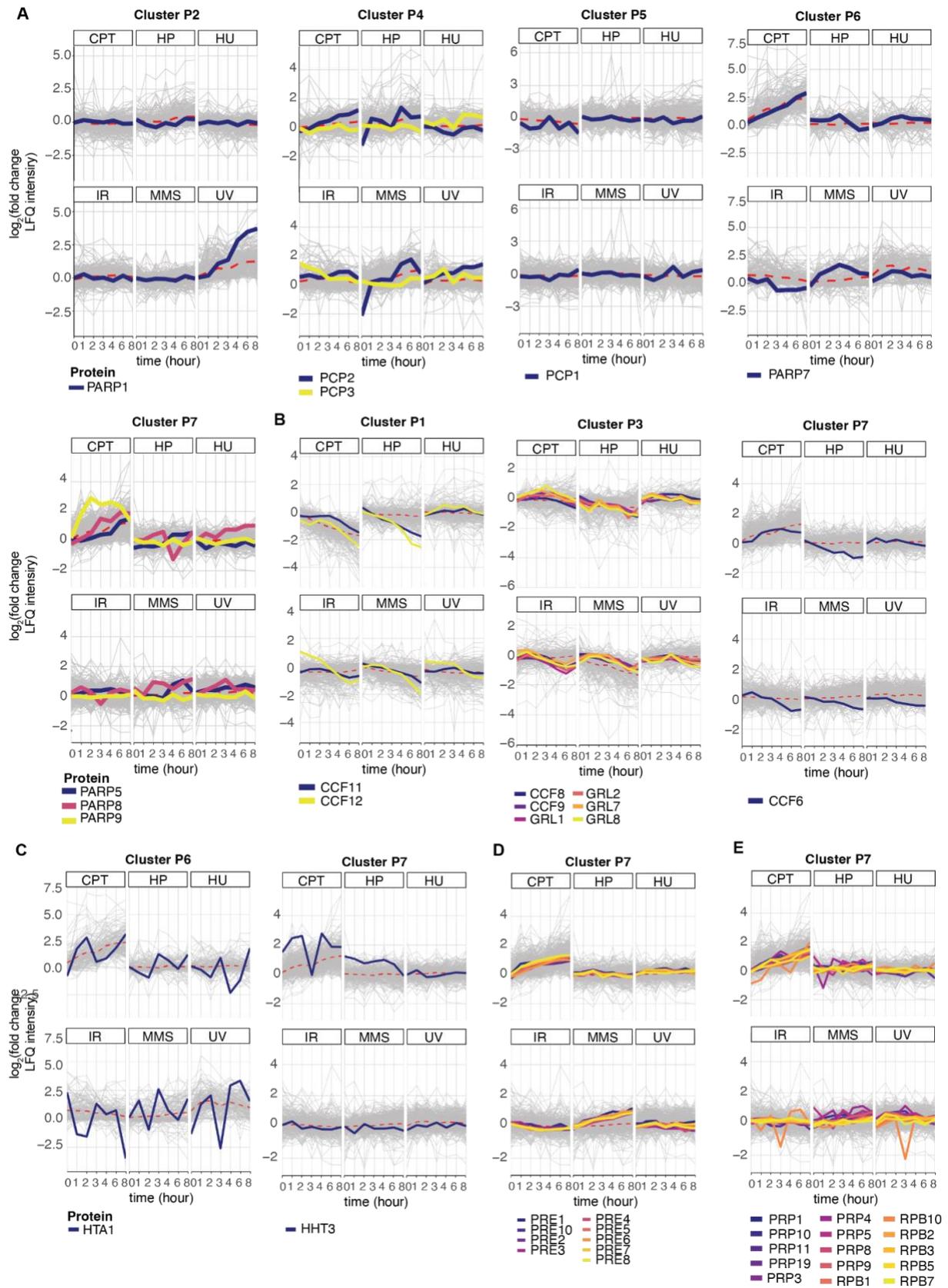
Supplemental Figure S3. Transcript SOM highlight DDR.



Supplemental Figure S4. Transcript SOM highlights. **A)** 20s ribosome, **B)** dense core granules, **C)** histones, **D)** PARP transcripts, **E)** histone (de)acetylases.



Supplemental Figure S5. Protein SOM DDR highlight.



Supplemental Figure S6. Protein SOM highlights. A) PARP proteins, **B)** dense core granules, **C)** histones, **D)** 20s proteasome, **E)** transcription related factors.

Supplemental Tables

Supplemental Table S1. DNA damage treatments for *Tetrahymena*.

Treatment	Induced Repair Pathway	Treatment Concentration	Basis of concentration	Stock Preparation
Hydrogen peroxide (HP)	BER	0.66 mM	Tested EC50s	Purchased at 9.8 M (Carl-Roth)
Methyl methanesulfonate (MMS)	BER;DSBR	2.38 mM	Tested EC50s	Purchase at 11.8 M (Sigma)
Ultraviolet light (UV)	NER; ICL	100 J/m ²	Tested EC50s	UV-Crosslinker Cells treated in 10 mM Tris-HCl (pH=7.5)
Cisplatin (CP)	ICL; NER	100 ug/mL	Tested EC50s/ Loidl and Mochizuki, 2009	2 mg/ml in DMSO (Sigma)
Hydroxyurea (HU)	ICL	20 mM	Sandoval et al., 2015	1.5 M in water (Sigma)
Ionizing radiation (IR)	DSBR	5000 rads (equivalent to 50 Grays)	Loidl and Mochizuki, 2009	Used Faxitron CellRad, Cells treated in 10 mM Tris-HCl (pH=7.5)

BER: base excision repair; DSBR: double strand break repair; NER: nucleotide excision repair; ICL: Interstrand crosslink repair.