

# Contents

## Supplemental figures

**Figure S1. Venn diagram for identification of proteome and phosphoproteome at 0/2h after 0/20/80/160 (A-D) Gy irradiation.**

**Figure S2. Comparison of proteome and phosphoproteome identification results and quality control (A-C).**

**Figure S3. Analysis of differently expressed proteins at each irradiation dose and time point (A-F).**

**Figure S4. Analysis of differential phosphosites at each irradiation dose and time point (A-F).**

**Figure S5. A comparison of the upregulated (A) and downregulated (B) proteins between our proteome dataset and the published datasets.**

**Figure S6. Protein domain enrichment analysis of upregulated proteins in different time points.**

**Figure S7. Motif analysis of irradiation sensitive phosphopeptides (A-C).**

**Figure S8. Site disorder analysis.**

## **Supplemental Tables**

**Table S1. Proteome(A) & phosphoproteome(B) identification and differential expression in *Deinococcus radiodurans*.**

**Table S1C. Comparison of the identification between the proteome and the phosphoproteome at each radiation states.**

**Table S1D. Comparison of the proteomics with previous work.**

**Table S2. GO entries, pathways, domains, gene age, disorder degree of all proteins in *Deinococcus radiodurans*.**

**Table S3A. The coverage and up-regulation ratio of (phospho)proteome identification of all pathways in *Deinococcus radiodurans***

**Table S3B. Changes of proteins in oxidative phosphorylation pathway after irradiation**

**Table S4. Proteins contain kinase domains and their differential changes after irradiation.**

## Supplemental figure legends

**Figure S1. Venn diagram for identification of proteome and phosphoproteome at 0/2h after 0/20/80/160 (A-D) Gy irradiation.**

**Figure S2. Comparison of proteome and phosphoproteome identification results and quality control (A-C).**

(A, B) Violin diagram shows the comparison of expression levels between (phospho)proteome sample in each irradiation state. (C) The correlation between two experiment repeats of the proteome.

**Figure S3. Analysis of differently expressed proteins at each irradiation dose and time point (A-F).**

Volcanic plot to show the DEPs screened by  $\log_2FC > 1$ ,  $FDR < 0.05$ . 20 Gy, 80 Gy and 160 Gy were all compared with 0 Gy at the corresponding time point.

**Figure S4. Analysis of differential phosphosites at each irradiation dose and time point (A-F).**

Volcanic plot to show the differential phosphosites screened by  $\log_2FC > 1$ ,  $FDR < 0.05$ .

20 Gy, 80 Gy and 160 Gy were all compared with 0 Gy at the corresponding time point.

**Figure S5. A comparison of the upregulated proteins between our proteome dataset and the published datasets.**

Venn diagram shows comparison with other irradiation proteomics datasets, 740 upregulated proteins were identified only in this dataset.

**Figure S6. Protein domain enrichment analysis of upregulated proteins in different time points.**

The time points are distinguished by different colors, and the size of the circle in the

figure indicates the number of genes with that domain.

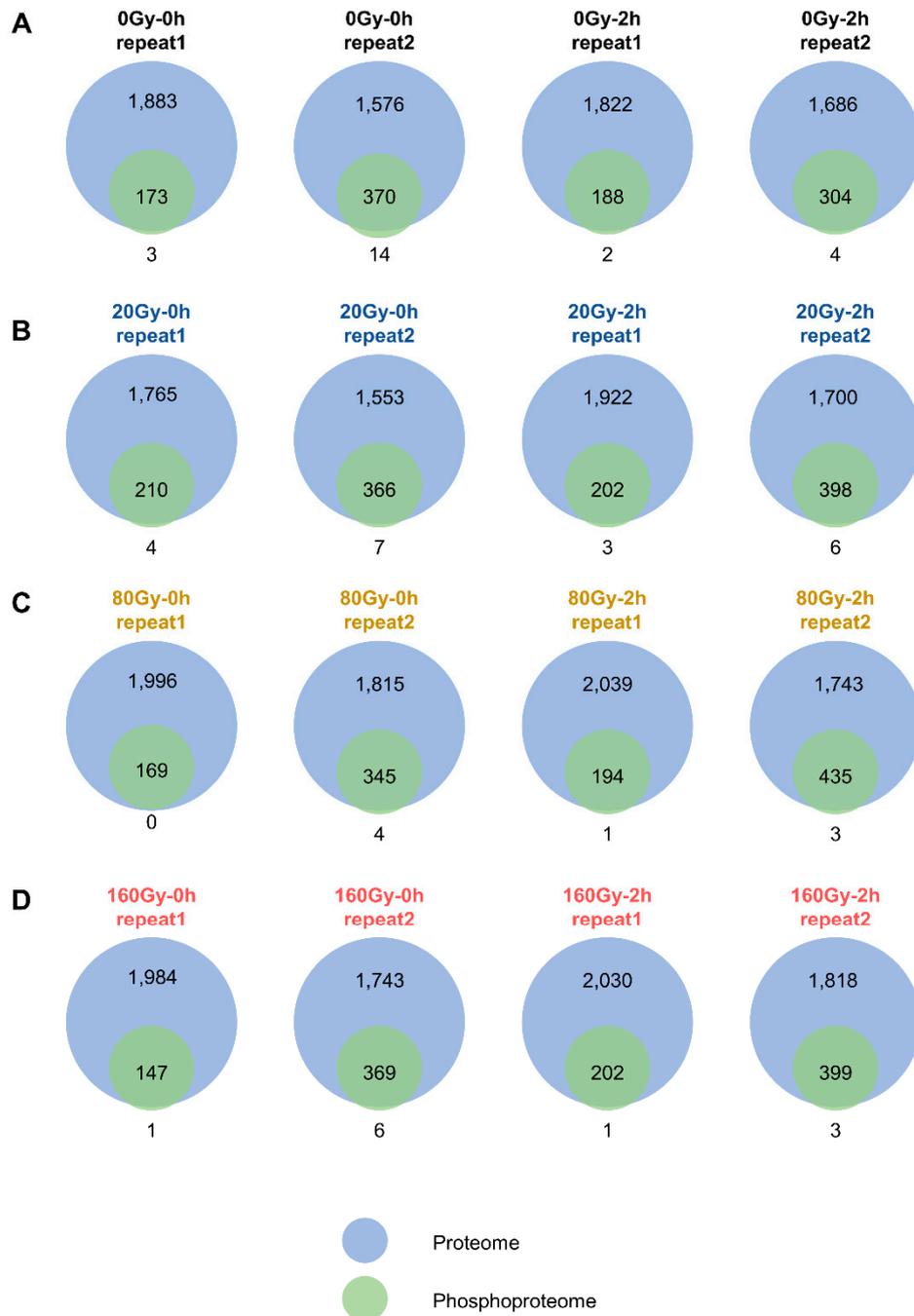
**Figure S7. Motif analysis of irradiation sensitive phosphopeptides (A-C).**

Analysis of motifs upstream and downstream of differential phosphosites. Distinguish between serine (S), threonine (T) and tyrosine (Y).

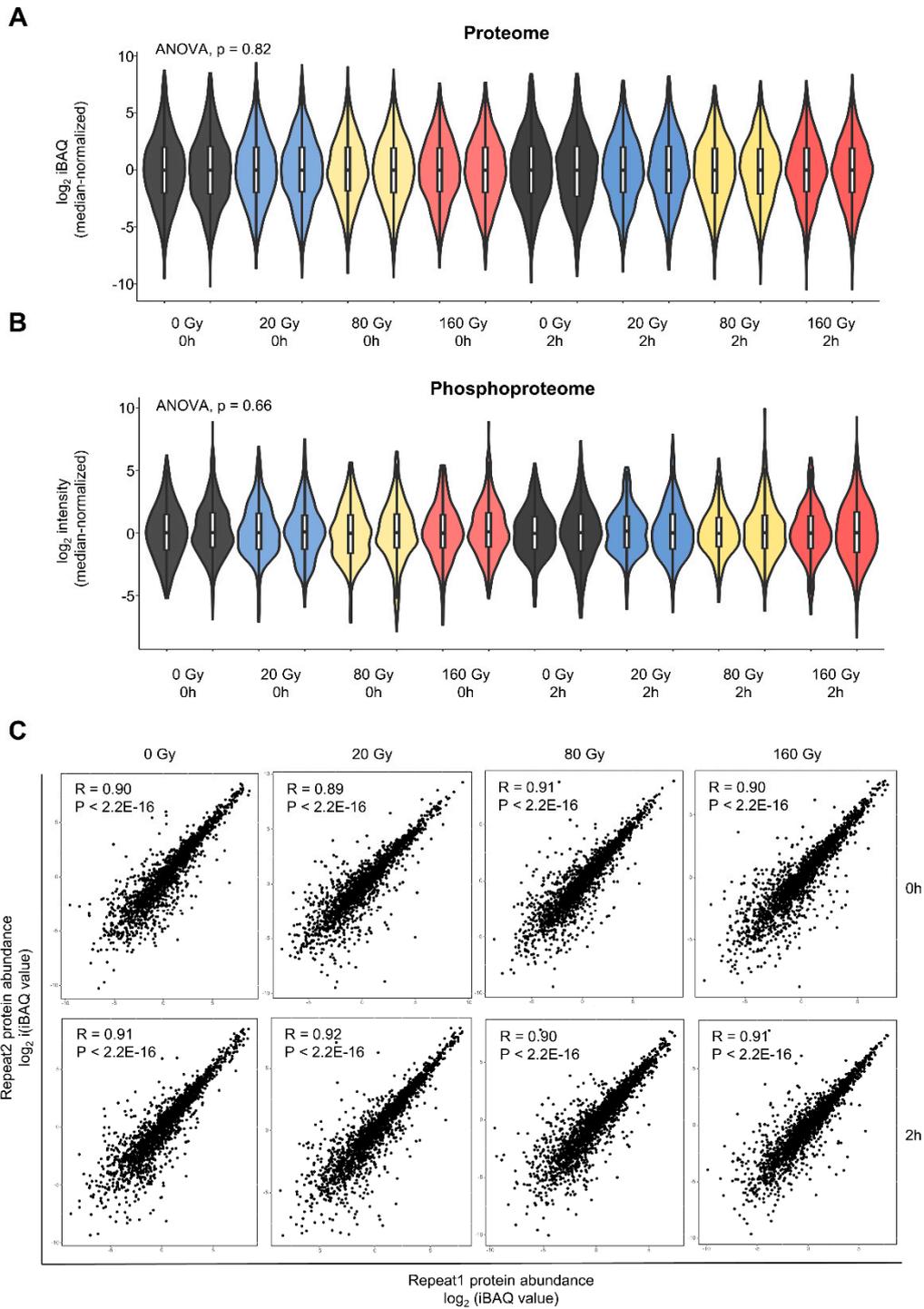
**Figure S8. Site disorder analysis.**

Whether the phosphosites and other AA sites are located in a disordered region. Phosphosites tend to be disordered, the difference is significant (fisher exact t test,  $P = 3.98e-84$ ).

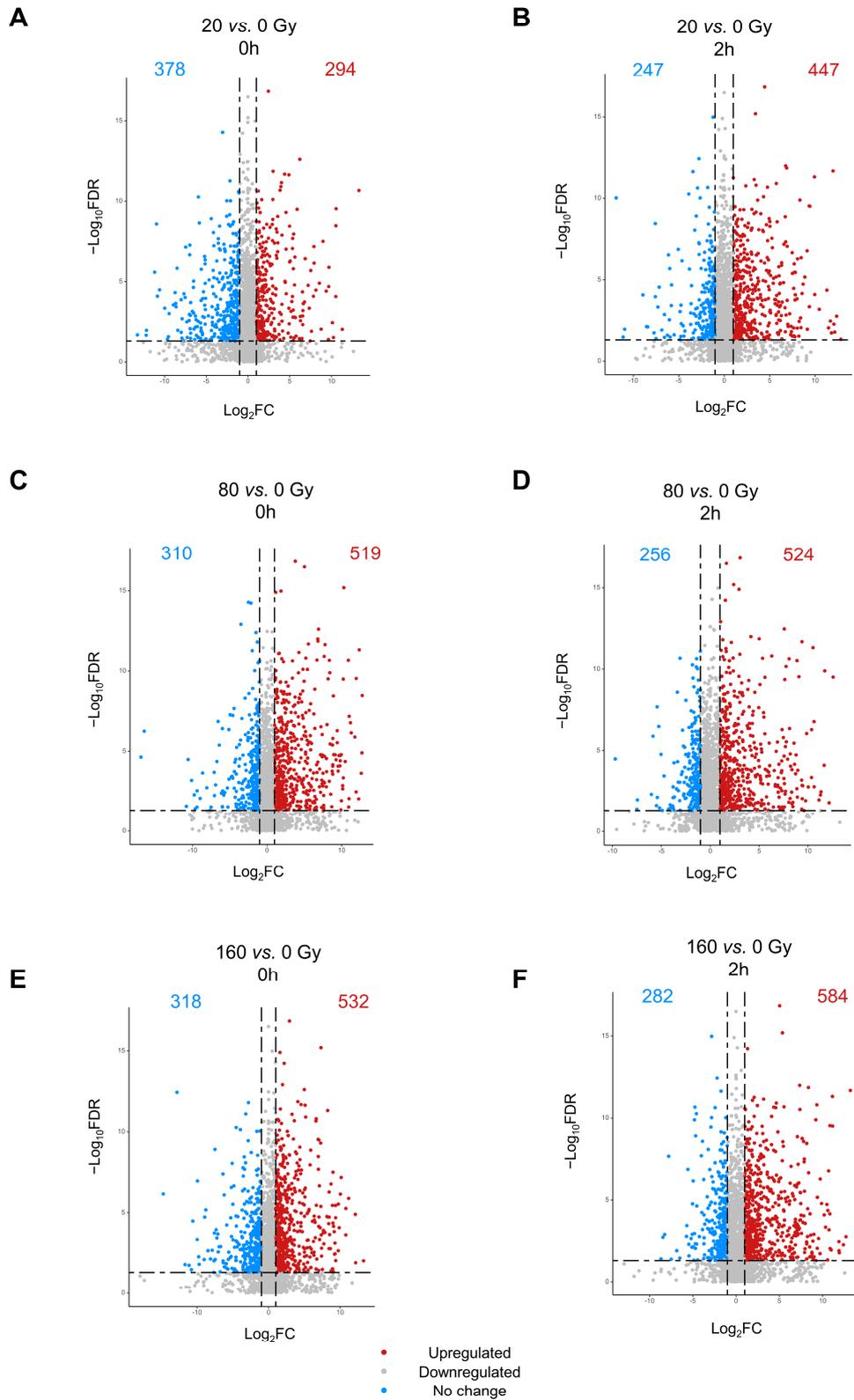
**Figure S1. Venn diagram for identification of proteome and phosphoproteome at 0/2h after 0/20/80/160 (A-D) Gy irradiation.**



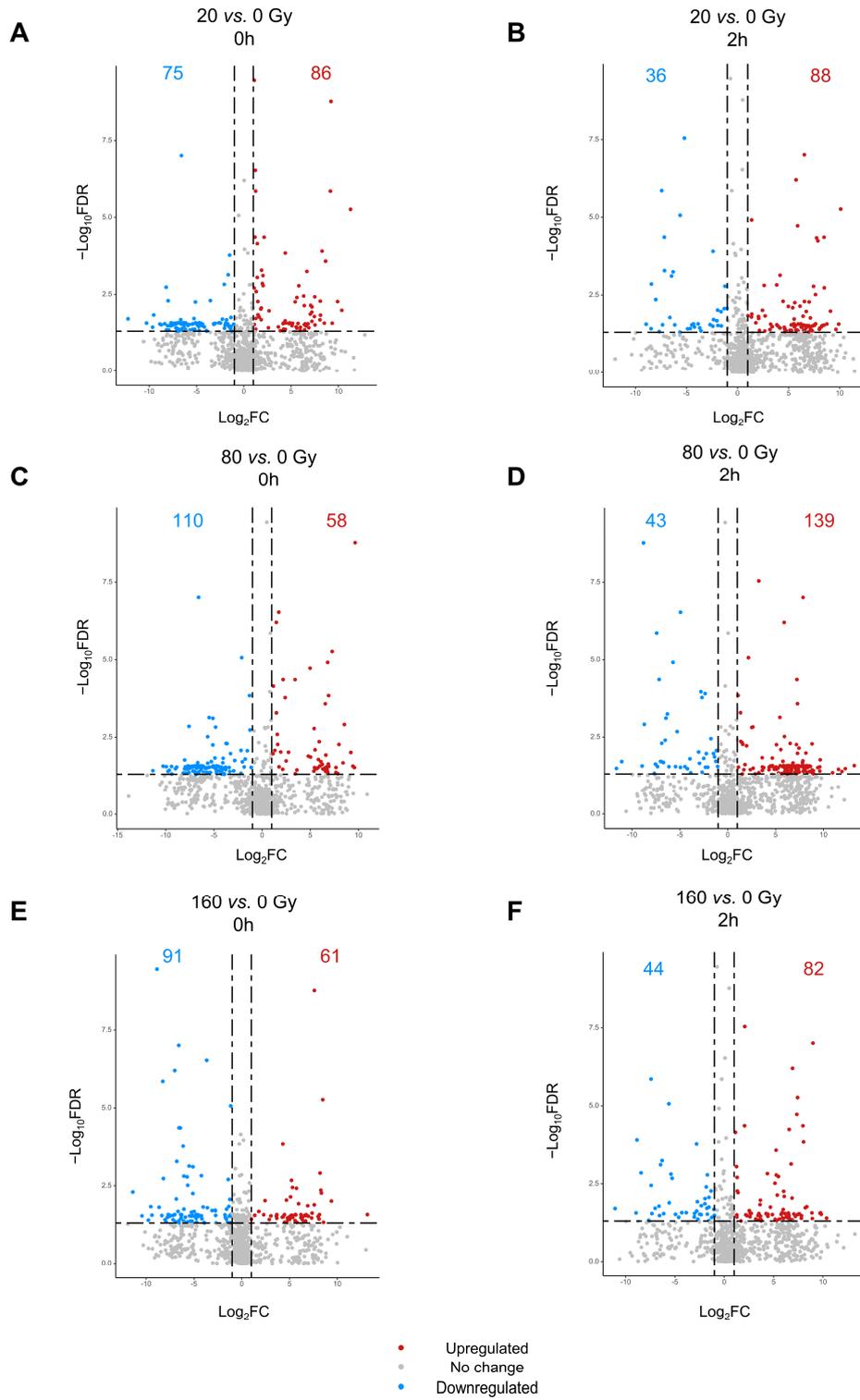
**Figure S2. Comparison of proteome and phosphoproteome identification results and quality control (A-C).**



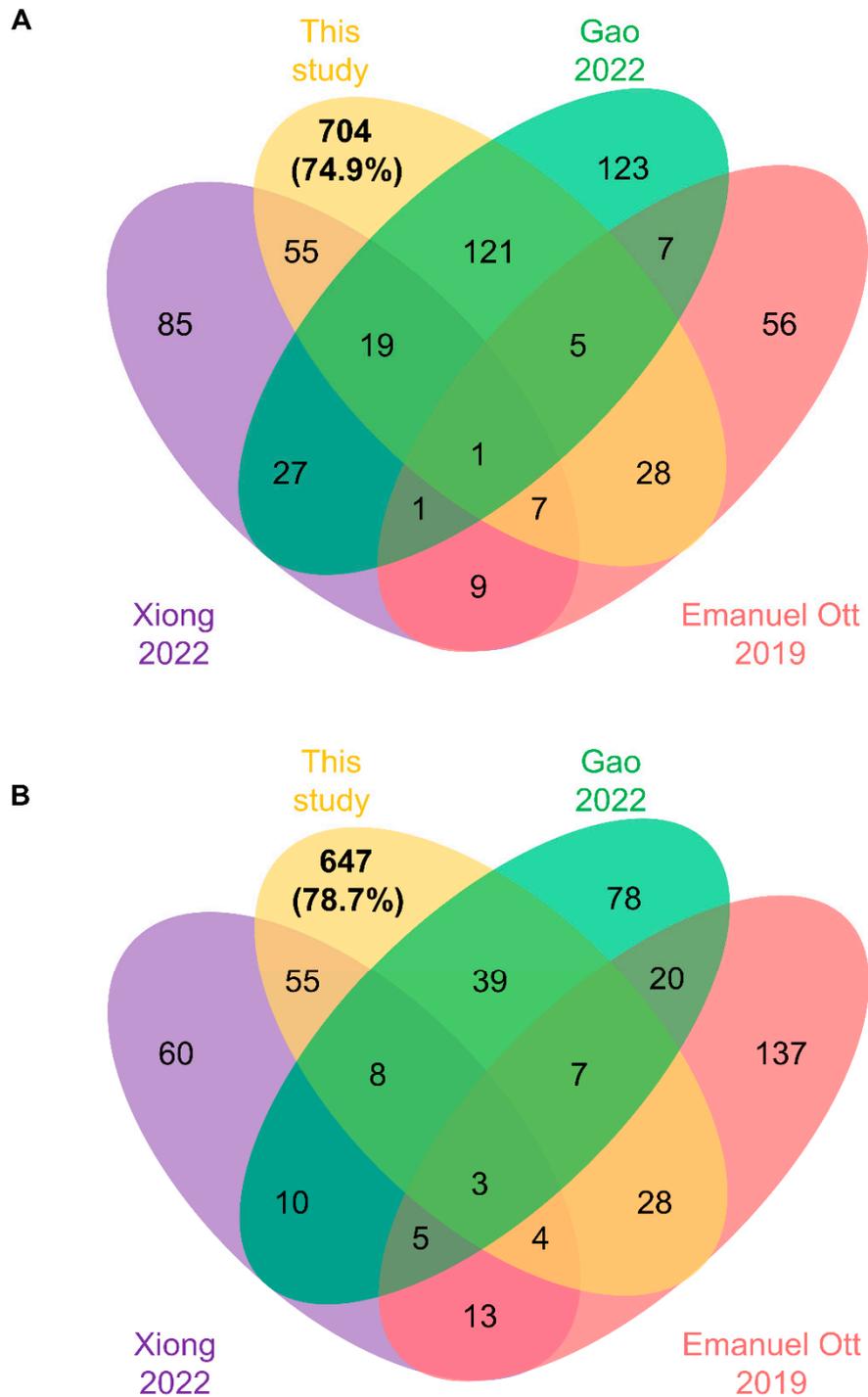
**Figure S3. Analysis of differently expressed proteins at each irradiation dose and time point (A-F).**



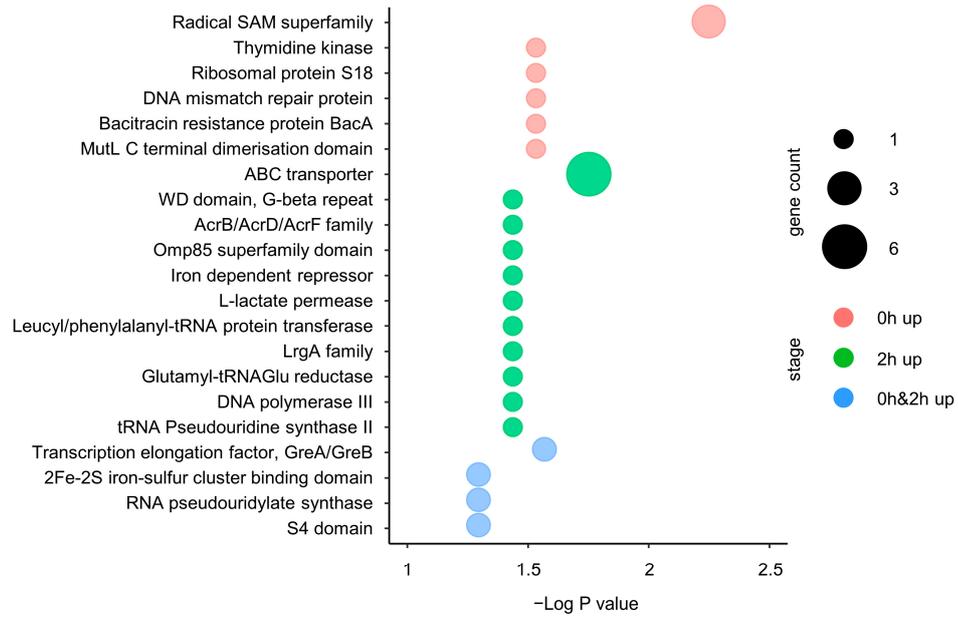
**Figure S4. Analysis of differential phosphosites at each irradiation dose and time point (A-F).**



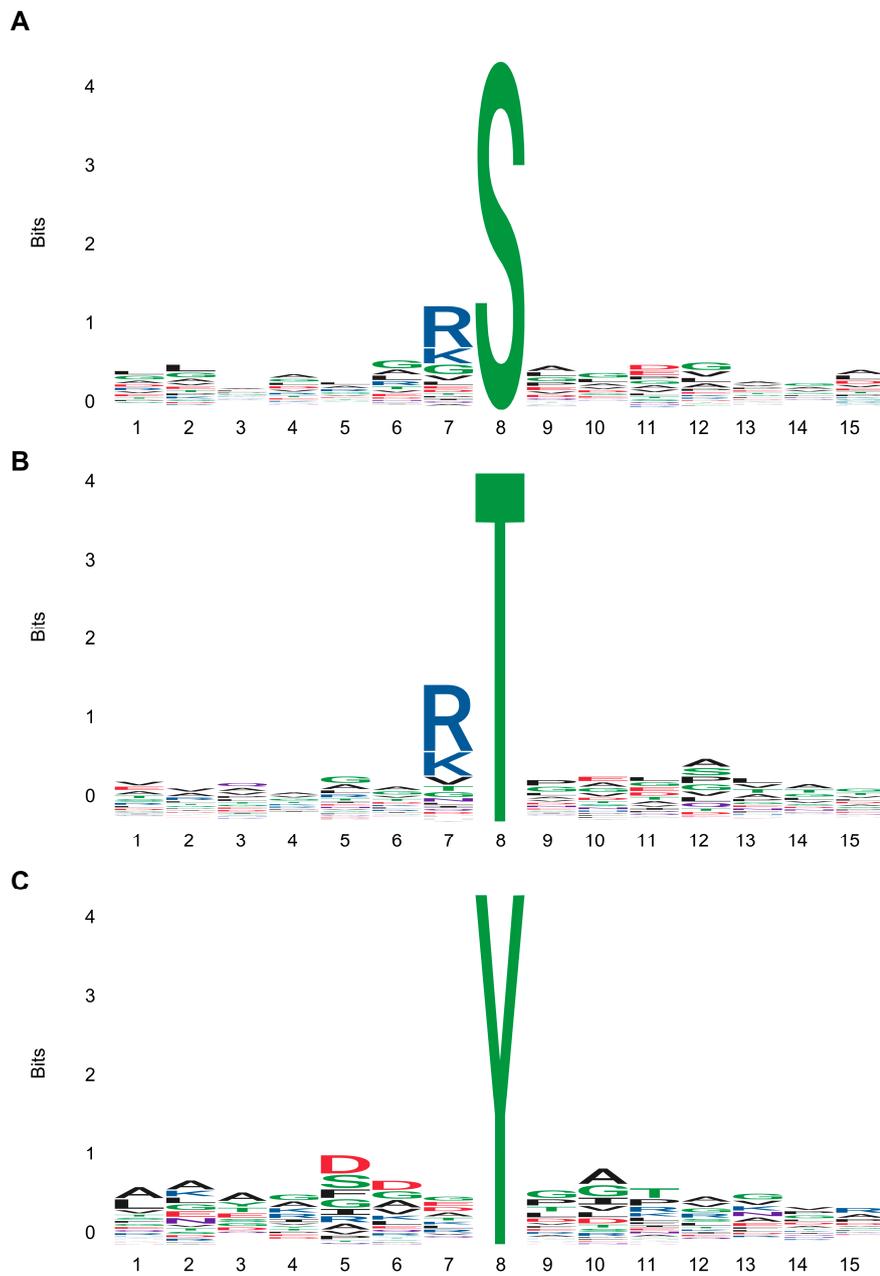
**Figure S5. A comparison of the upregulated (A) and downregulated (B) proteins between our proteome dataset and the published datasets.**



**Figure S6. Protein domain enrichment analysis of upregulated proteins in different time points.**



**Figure S7. Motif analysis of irradiation sensitive phosphopeptides (A-C).**



**Figure S8. Site disorder analysis.**

