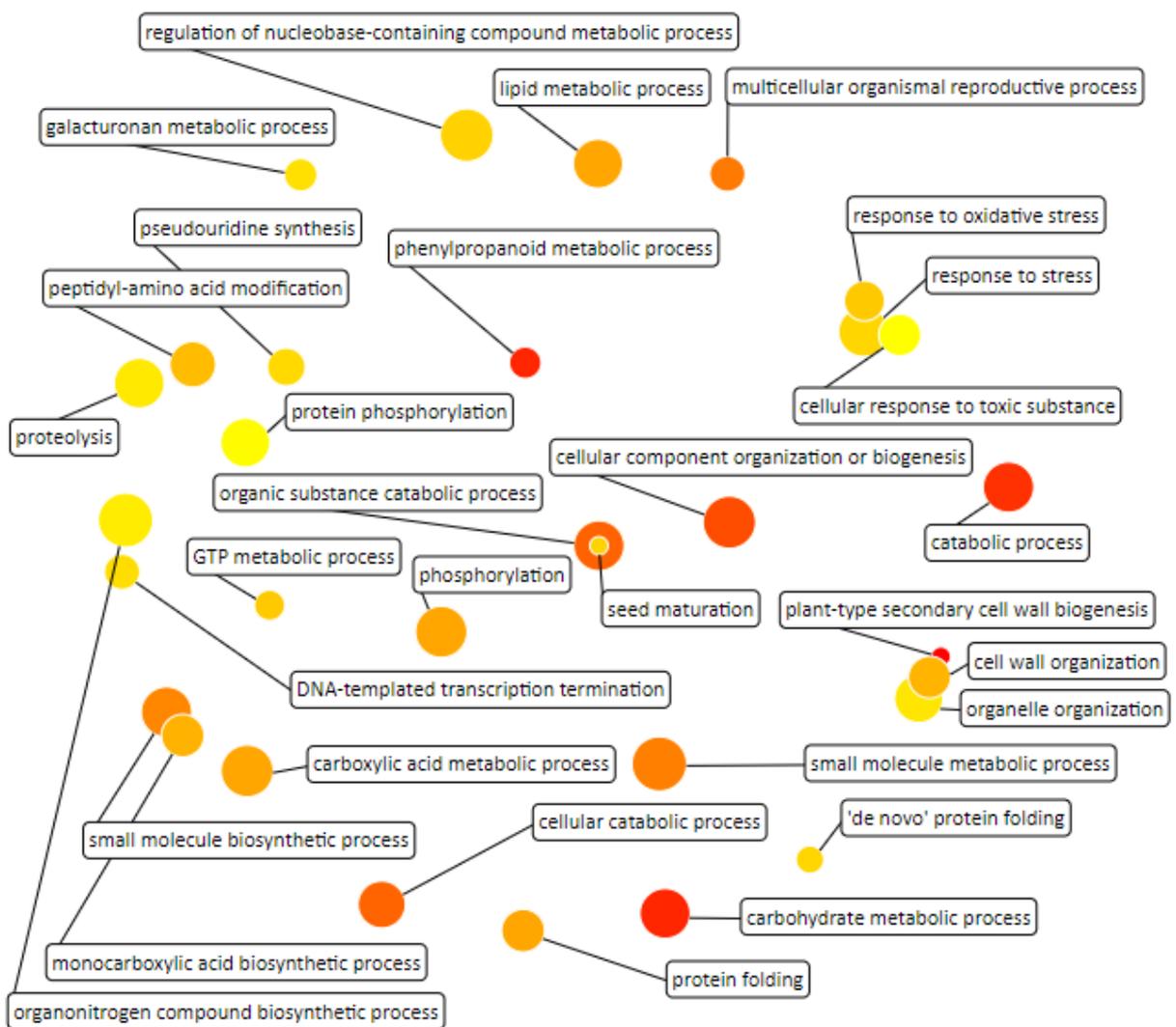
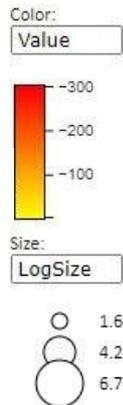
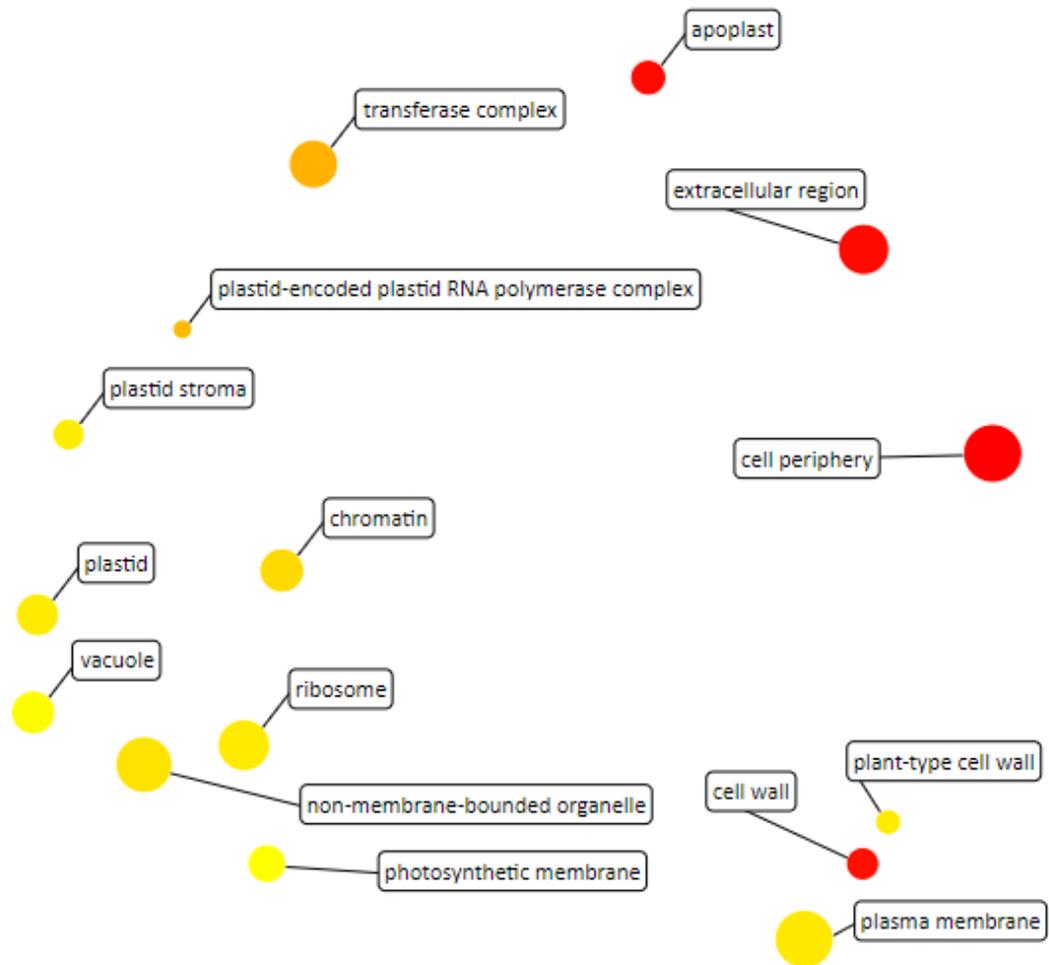


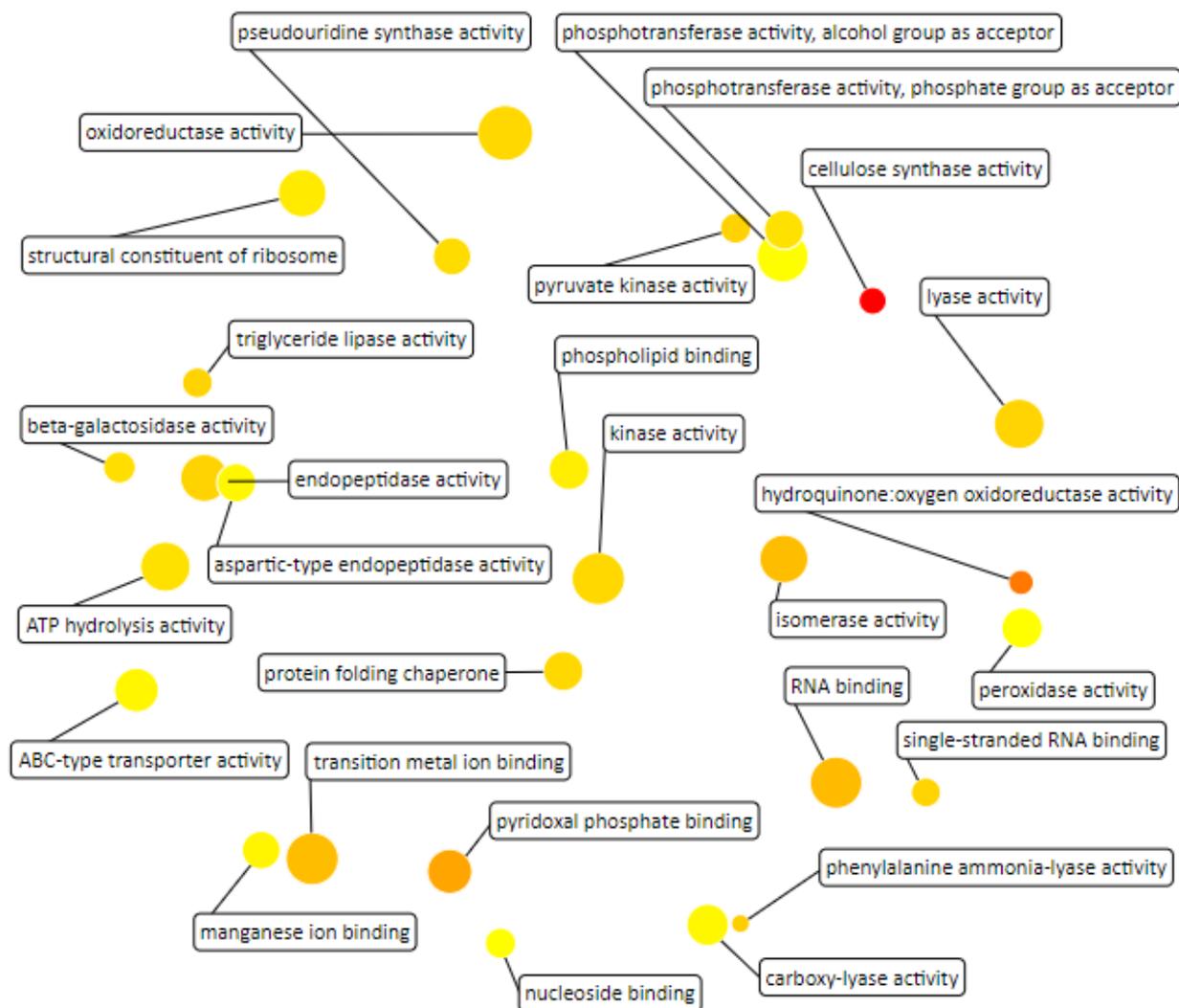
## Legend



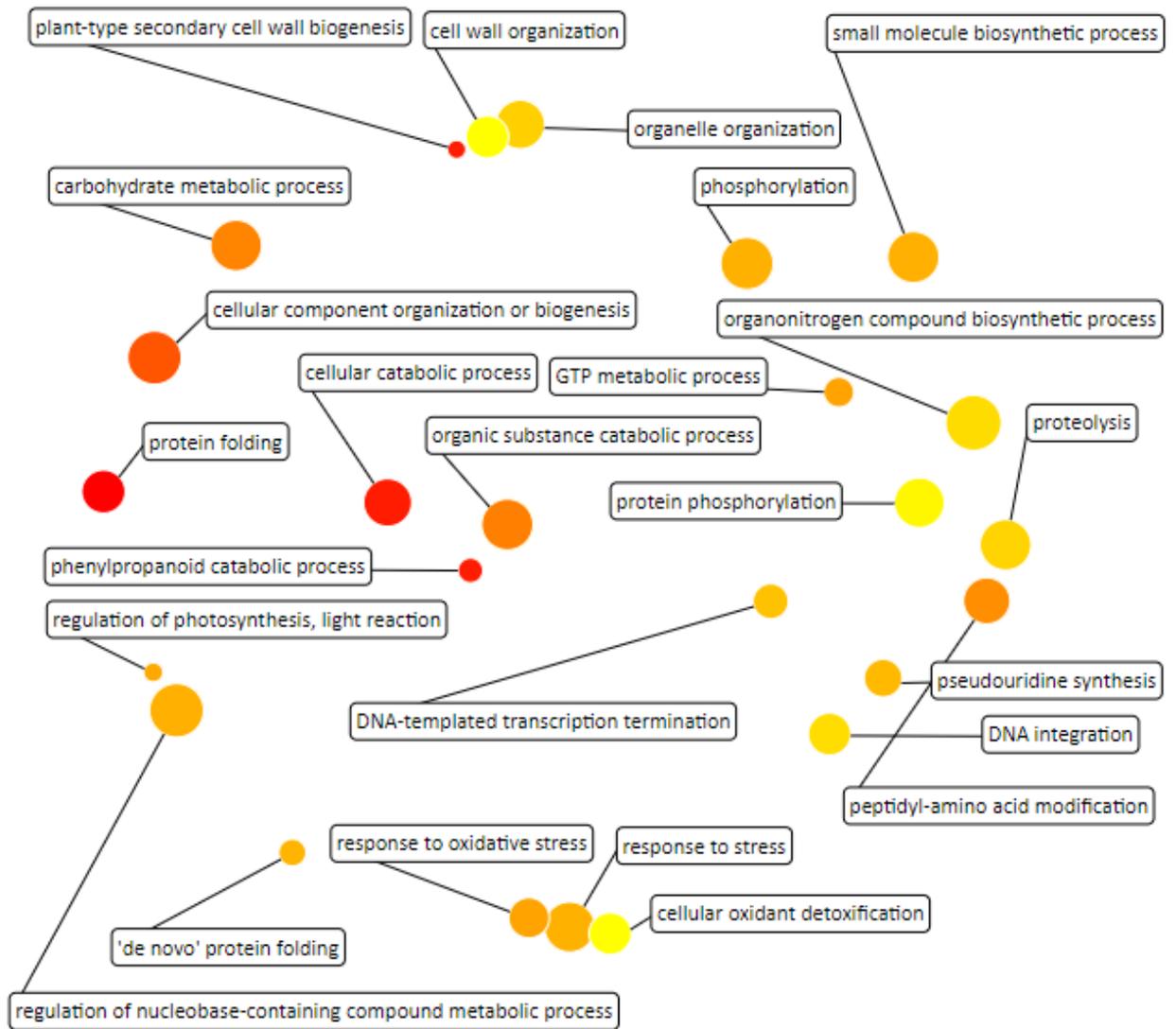
**Figure S1.** Scheme of the most significantly enriched GO terms for upregulated DEGs shared between  $\gamma$ -radiation and electron beam in terms of Biological Process, visualized by REVIGO.



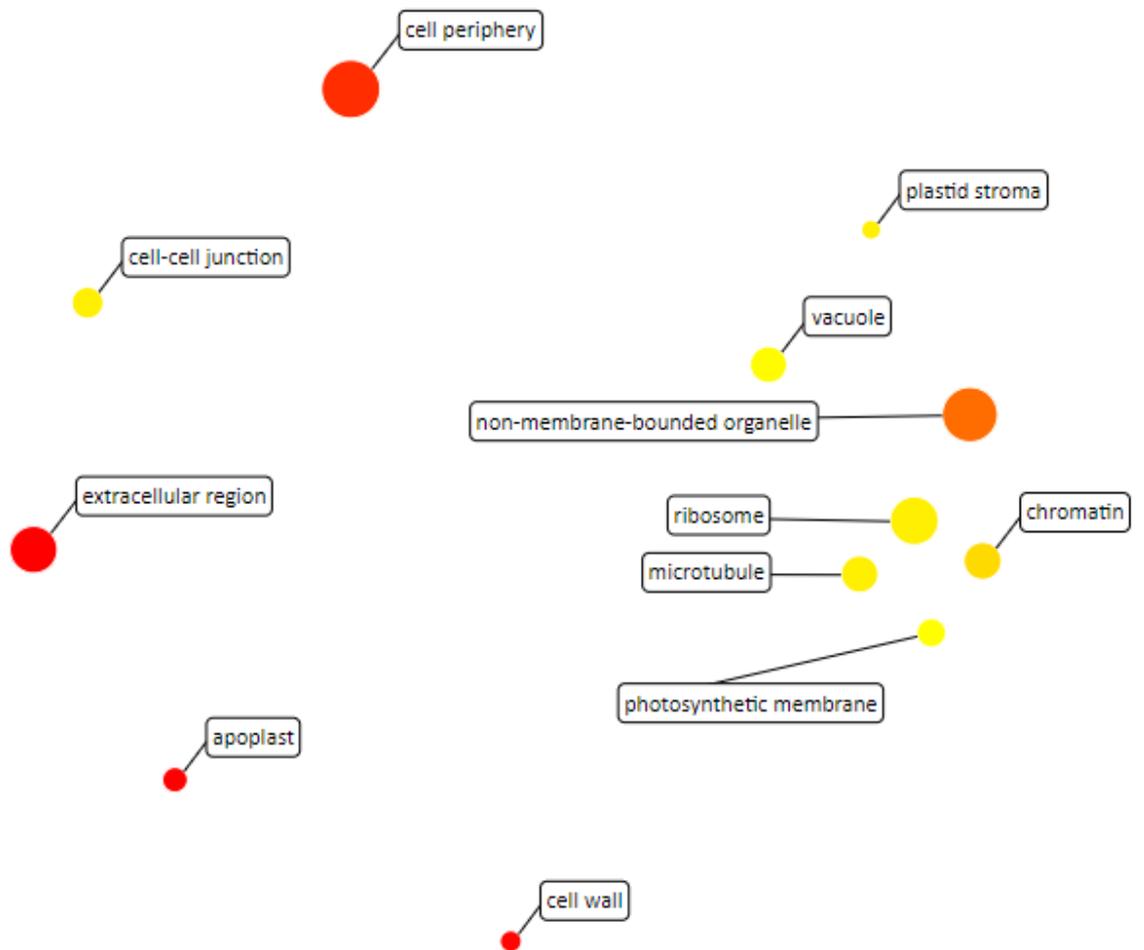
**Figure S2.** Scheme of the most significantly enriched GO terms for upregulated DEGs shared between  $\gamma$ -radiation and electron beam in terms of Cellular Component, visualized by REVIGO.



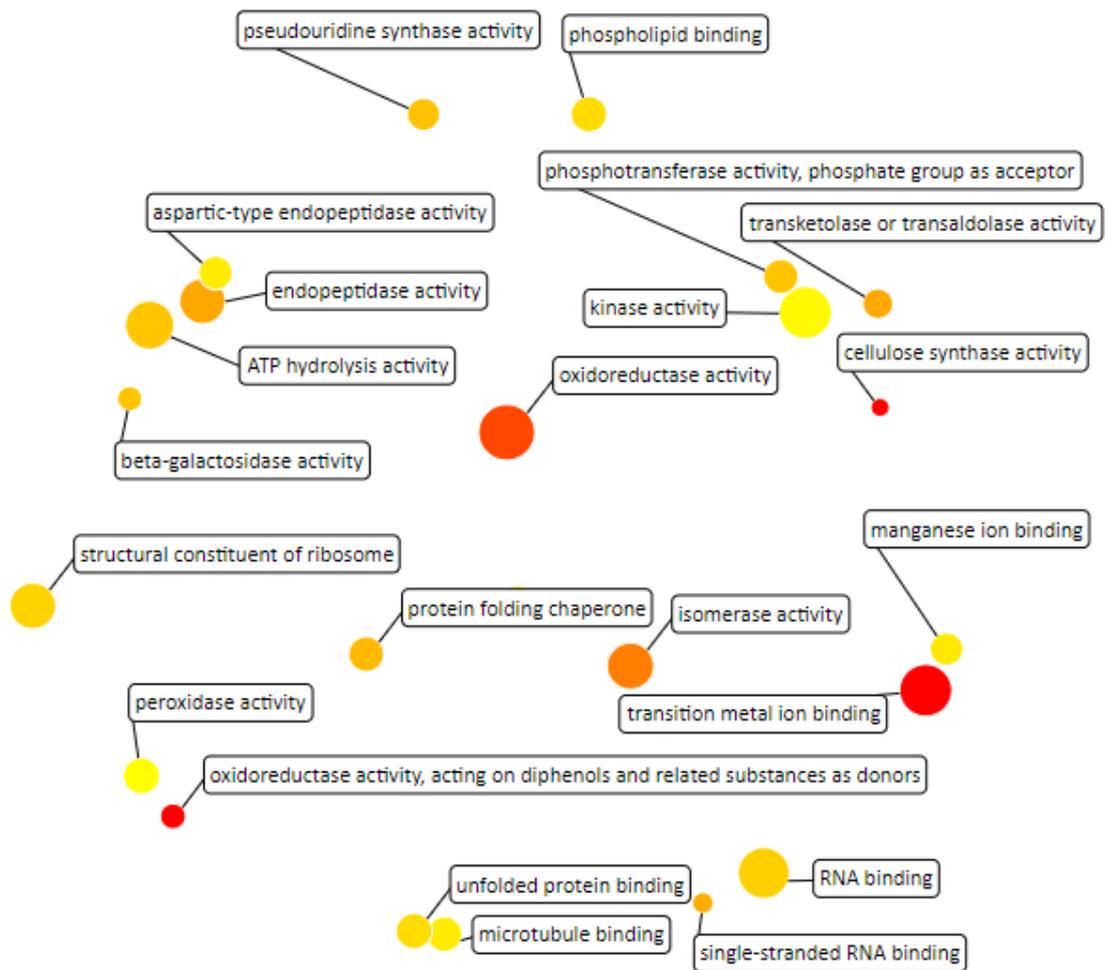
**Figure S3.** Scheme of the most significantly enriched GO terms for upregulated DEGs shared between  $\gamma$ -radiation and electron beam in terms of Molecular Function, visualized by REVIGO.



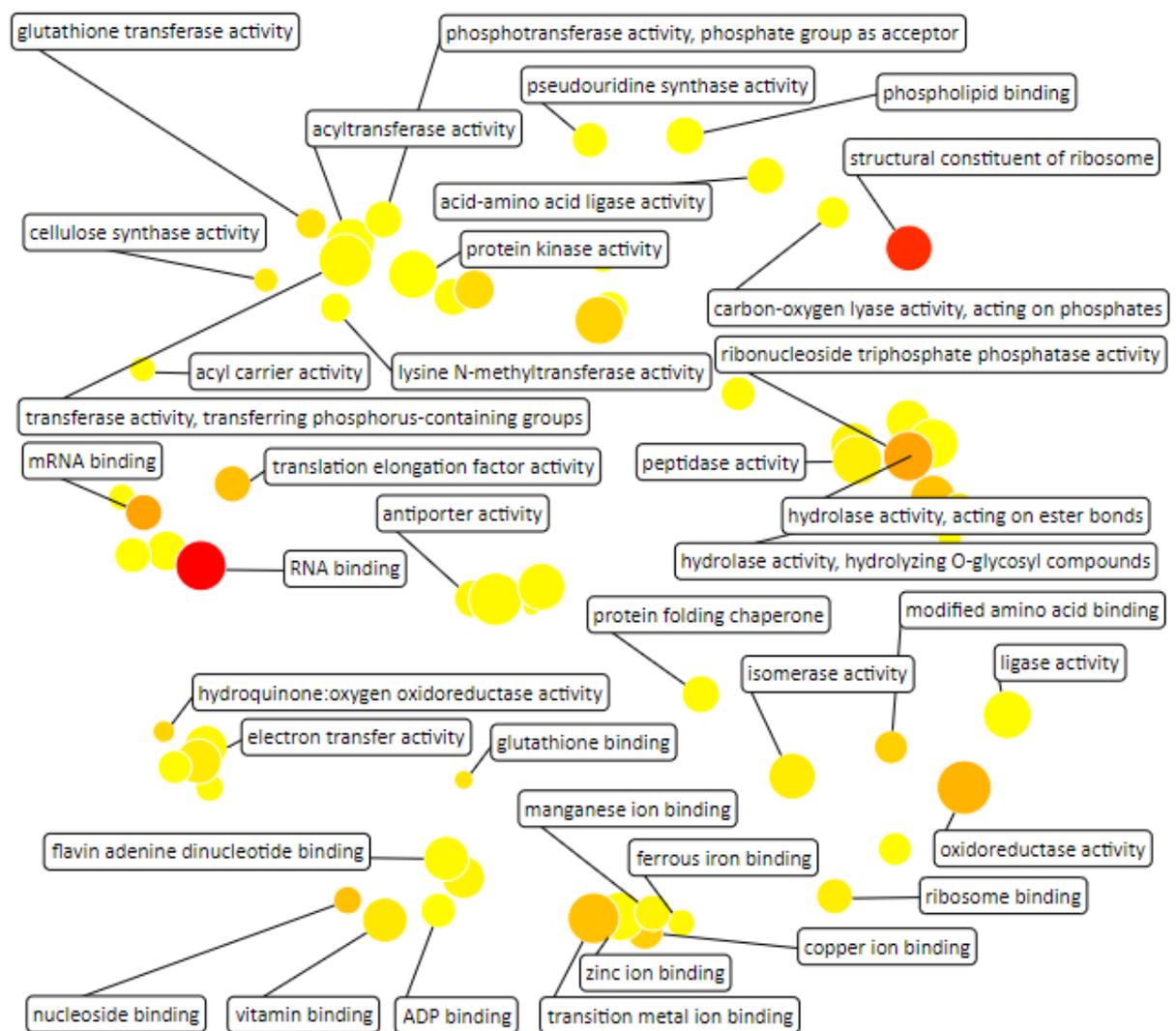
**Figure S4.** Scheme of the most significantly enriched GO terms for upregulated DEGs shared between  $\gamma$ -radiation and proton beam in terms of Biological Process, visualized by REVIGO.



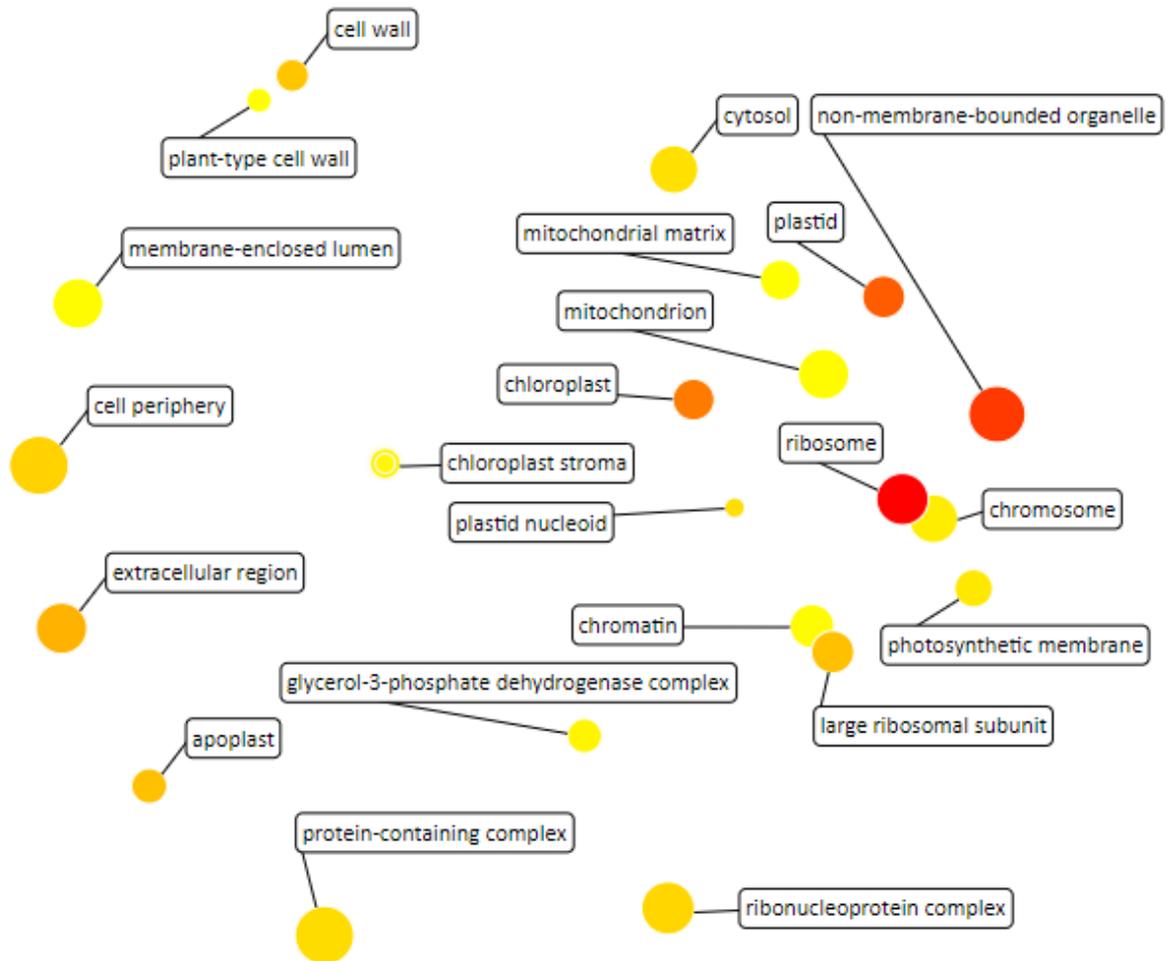
**Figure S5.** Scheme of the most significantly enriched GO terms for upregulated DEGs shared between  $\gamma$ -radiation and proton beam in terms of Cellular Component, visualized by REVIGO.



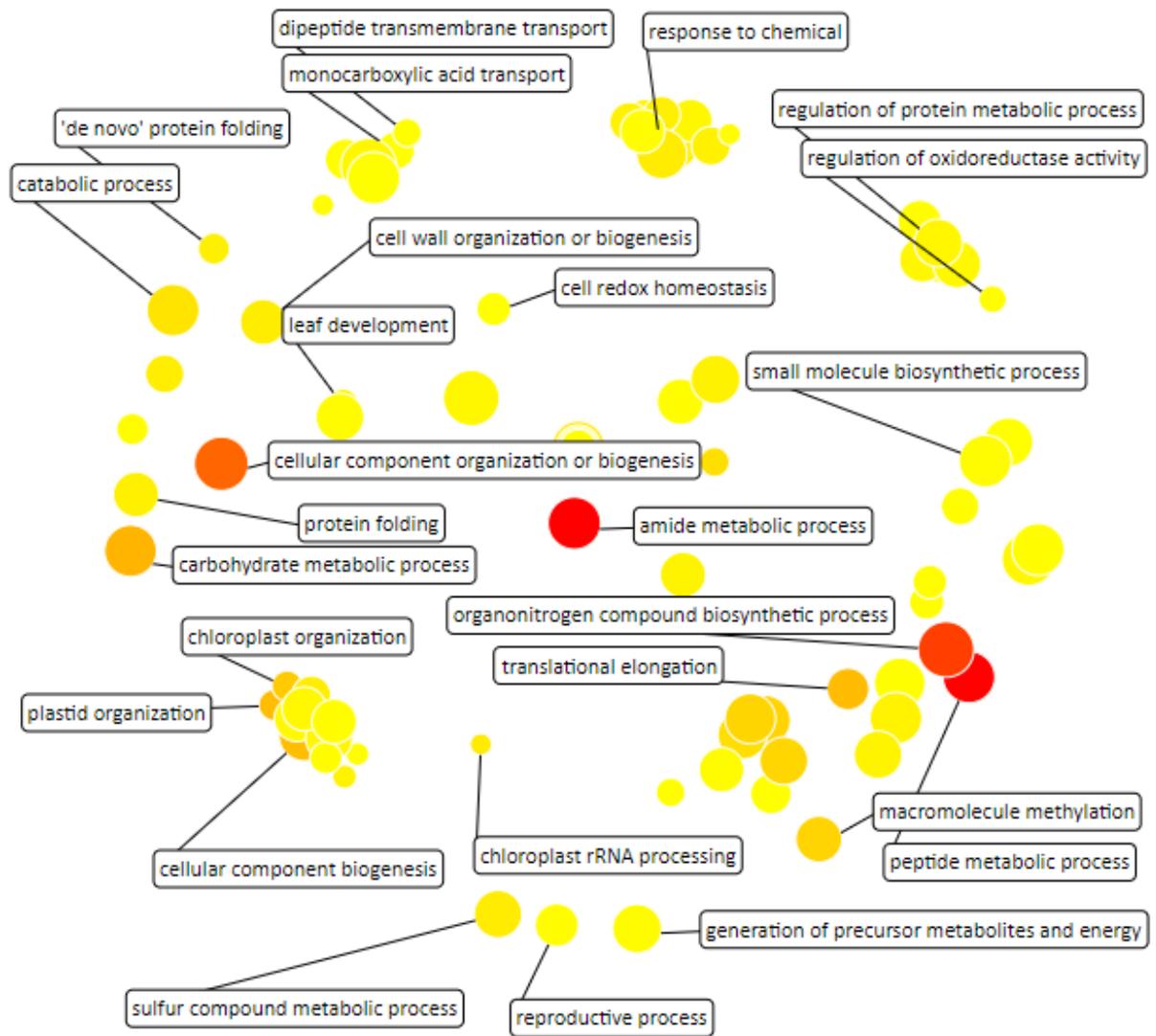
**Figure S6.** Scheme of the most significantly enriched GO terms for upregulated DEGs shared between  $\gamma$ -radiation and proton beam in terms of Molecular Function, visualized by REVIGO.



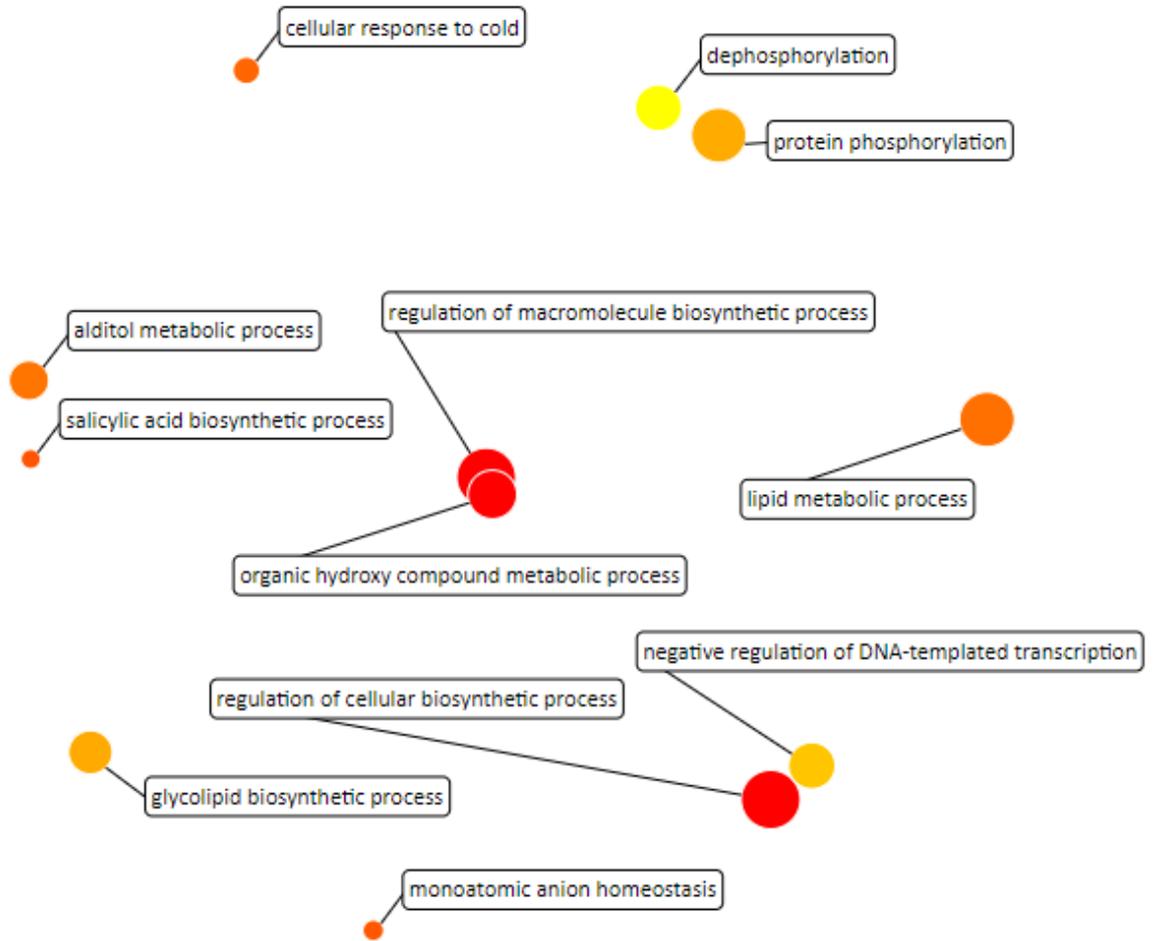
**Figure S7.** Scheme of the most significantly enriched GO terms for upregulated DEGs shared between electron and proton beam in terms of Molecular Function, visualized by REVIGO.



**Figure S8.** Scheme of the most significantly enriched GO terms for upregulated DEGs shared between electron and proton beam in terms of Cellular Component, visualized by REVIGO.



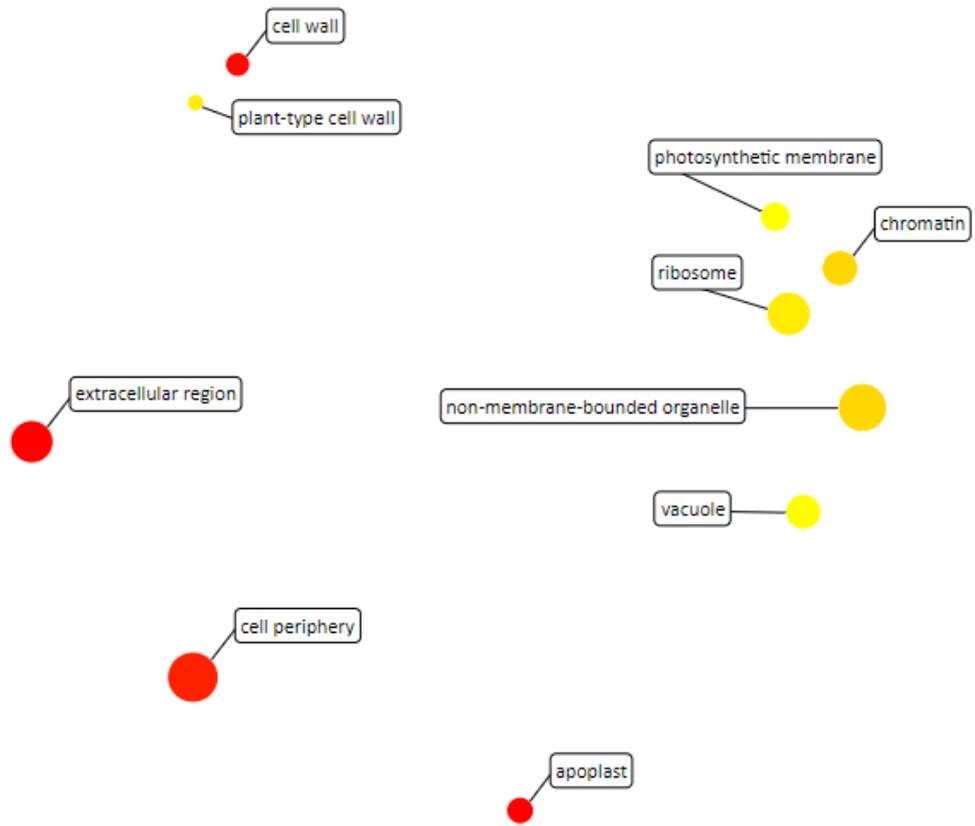
**Figure S9.** Scheme of the most significantly enriched GO terms for upregulated DEGs shared between electron and proton beam in terms of Biological Process, visualized by REVIGO.



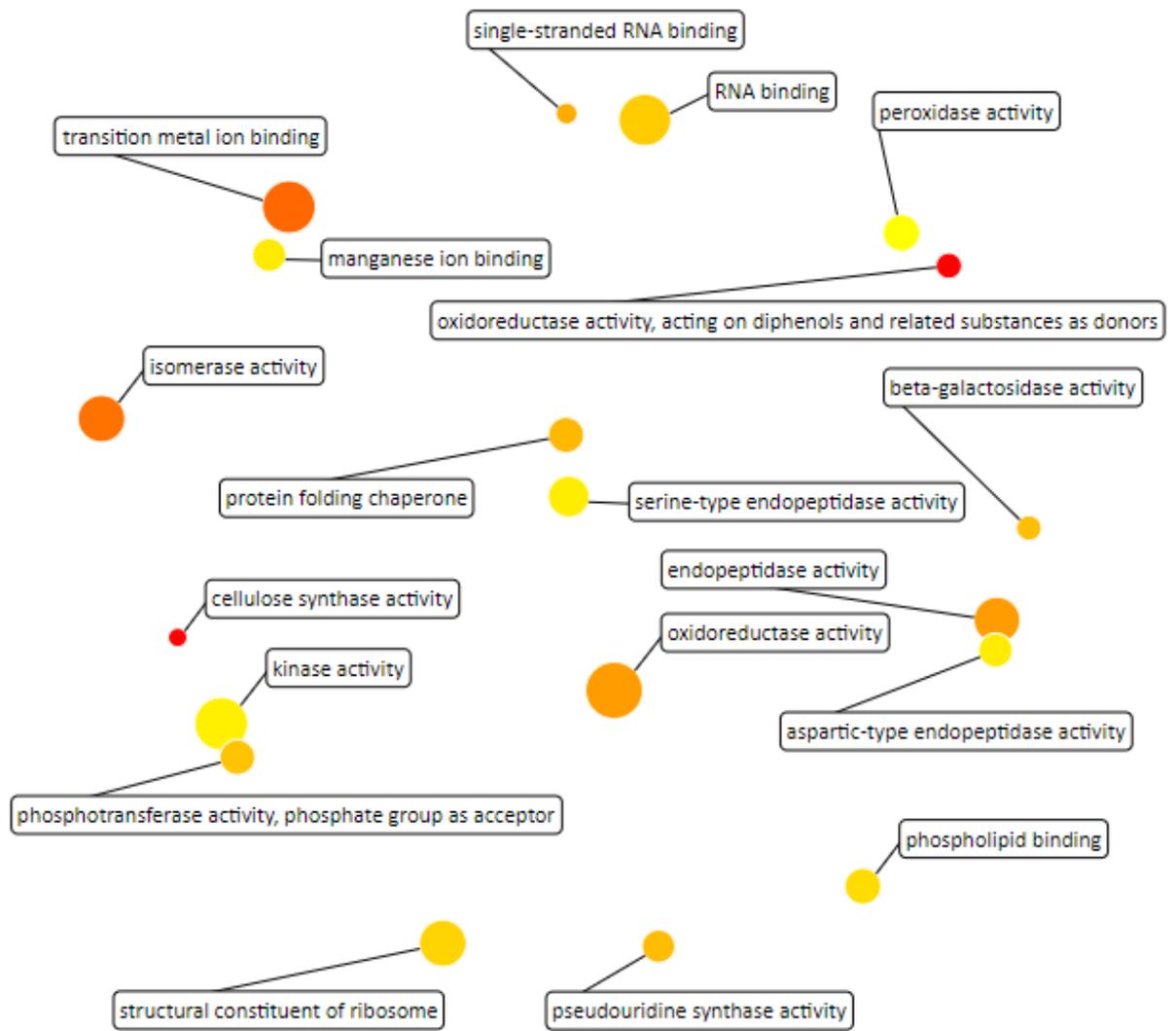
**Figure S10.** Scheme of the most significantly enriched GO terms for downregulated DEGs shared between electron and proton beam in terms of Biological Process, visualized by REVIGO.



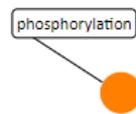
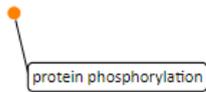
**Figure S11.** Scheme of the most significantly enriched GO terms for downregulated DEGs shared between electron and proton beam in terms of Molecular Function, visualized by REVIGO.



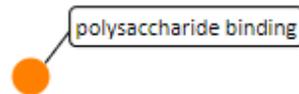
**Figure S12.** Scheme of the most significantly enriched GO terms shared among all types of radiation applied in terms of Cellular Component, visualized by REVIGO.



**Figure S13.** Scheme of the most significantly enriched GO terms shared among all types of radiation applied in terms of Molecular Function, visualized by REVIGO.



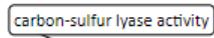
**Figure S14.** Scheme of the most significantly enriched GO terms for downregulated DEGs shared between  $\gamma$ -radiation and electron beam in terms of Biological Process, visualized by REVIGO.



**Figure S15.** Scheme of the most significantly enriched GO terms for downregulated DEGs shared between  $\gamma$ -radiation and electron beam in terms of Molecular Function, visualized by REVIGO.

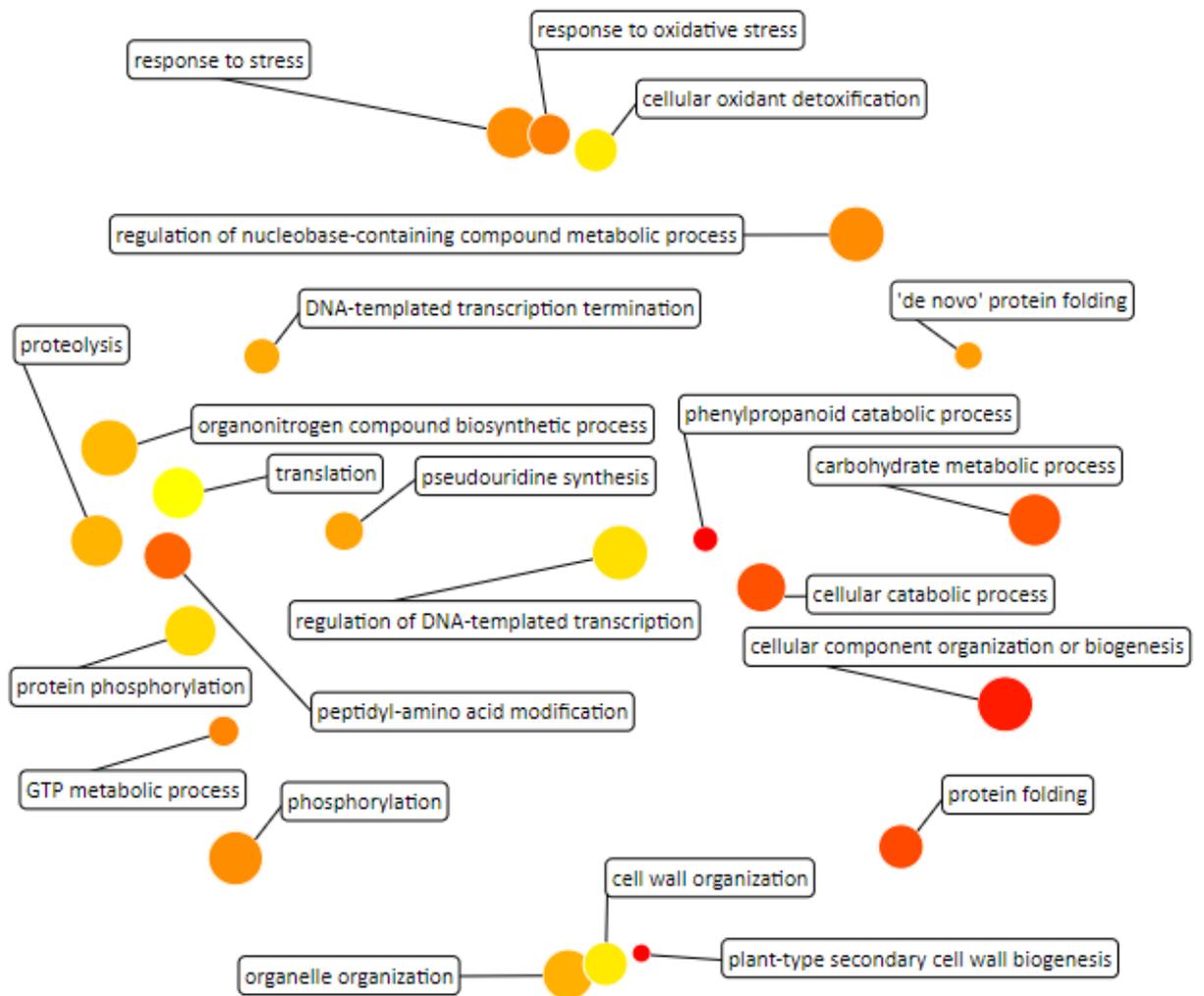


monooxygenase activity



carbon-sulfur lyase activity

**Figure S16.** Scheme of the most significantly enriched GO terms for downregulated DEGs shared between  $\gamma$ -radiation and proton beam in terms of Molecular Function, visualized by REVIGO.



**Figure S17.** Scheme of the most significantly enriched GO terms shared among all types of radiation applied in terms of Biological Process, visualized by REVIGO.