How did the authors conduct this screen to identify genes that conferred resistance to ionizing radiation? Diagram and explain the experimental rationale for how they conducted their screen. Is this a ‘positive’ or ‘negative’ selection? Why?

How did the authors determine the location of the mutations in the genome? Why would mapping by conjugation not have been an effective approach to use in this situation?

Each resistant strain contained many different mutations. How did the authors determine and differentiate which mutations were responsible for conferring resistance to ionizing radiation and which were just random mutations that arose during the selection?

The new strains were extremely resistant to ionizing radiation, but not extremely resistant to UV radiation? How could this be?