Supplementary Table S1. The difference of cellular response to ionizing radiation among species. +: effective; -: defective; N.D.: Not Determined.

| Species     | Cell Cycle Checkpoints                  | Predominant DNA Repair Pathway         | Apoptosis                                           |
|-------------|-----------------------------------------|----------------------------------------|-----------------------------------------------------|
| Mammals     | G1/S checkpoint: –                       | Homologous recombination               | From two-cell stage in mouse                        |
|             | G2/M checkpoint: +                       |                                        |                                                     |
| Xenopus     | After midblastula transition            | N.D.                                   | After onset of gastrulation                          |
| Fish        | After midblastula transition in zebrafish| N.D.                                   | After mid-gastrulation stage in zebrafish           |