## Supplementary material

**Figure S1.** (A) The cytosolic Ca<sup>2+</sup> (Fluo-4, AM labeled) fluctuated in HCC cells after carbon ion irradiation measured with flow cytometry. Red line: control; light blue line: irradiation with carbon ions at 2Gy; orange line: irradiation with carbon ions at 4Gy. (B) The expression level of ferroptosis-related proteins in HepG2 cells treated with Fer-1 or sorafenib combined with CI irradiation. CI: carbon ions; Fer-1: Ferrostatin-1.



