



Supplementary figure 1: Establishment of fractionated radiation induced GIM model in SD rats. **(a)** Images of the lead capsule with dimensions. **(b and c)** Representative images of H and E stained duodenum **(b)** and ileum **(c)** sections during GIM. The intestines were collected from irradiated rats on days 8, 11 and 15 and embedded in paraffin for H and E staining.