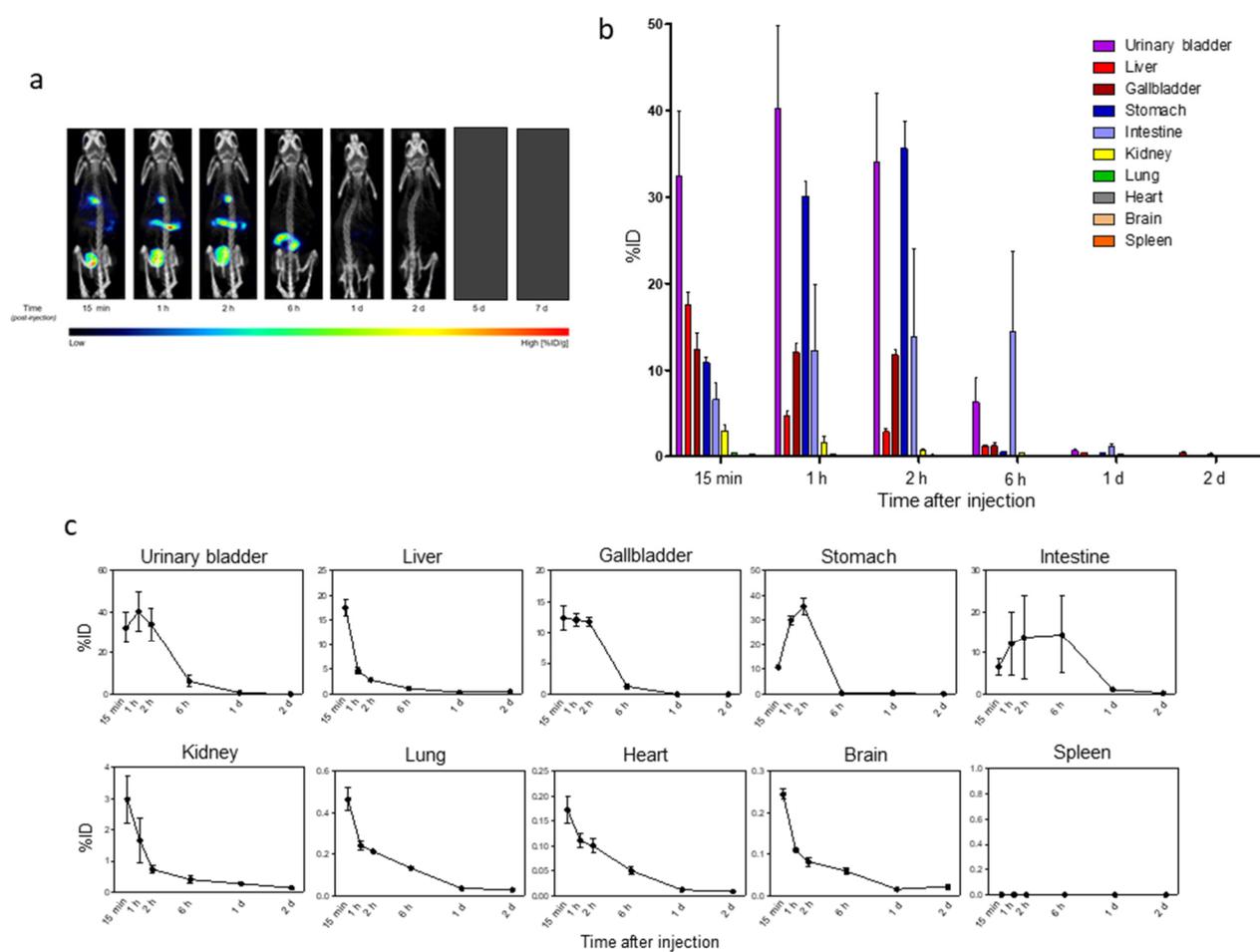
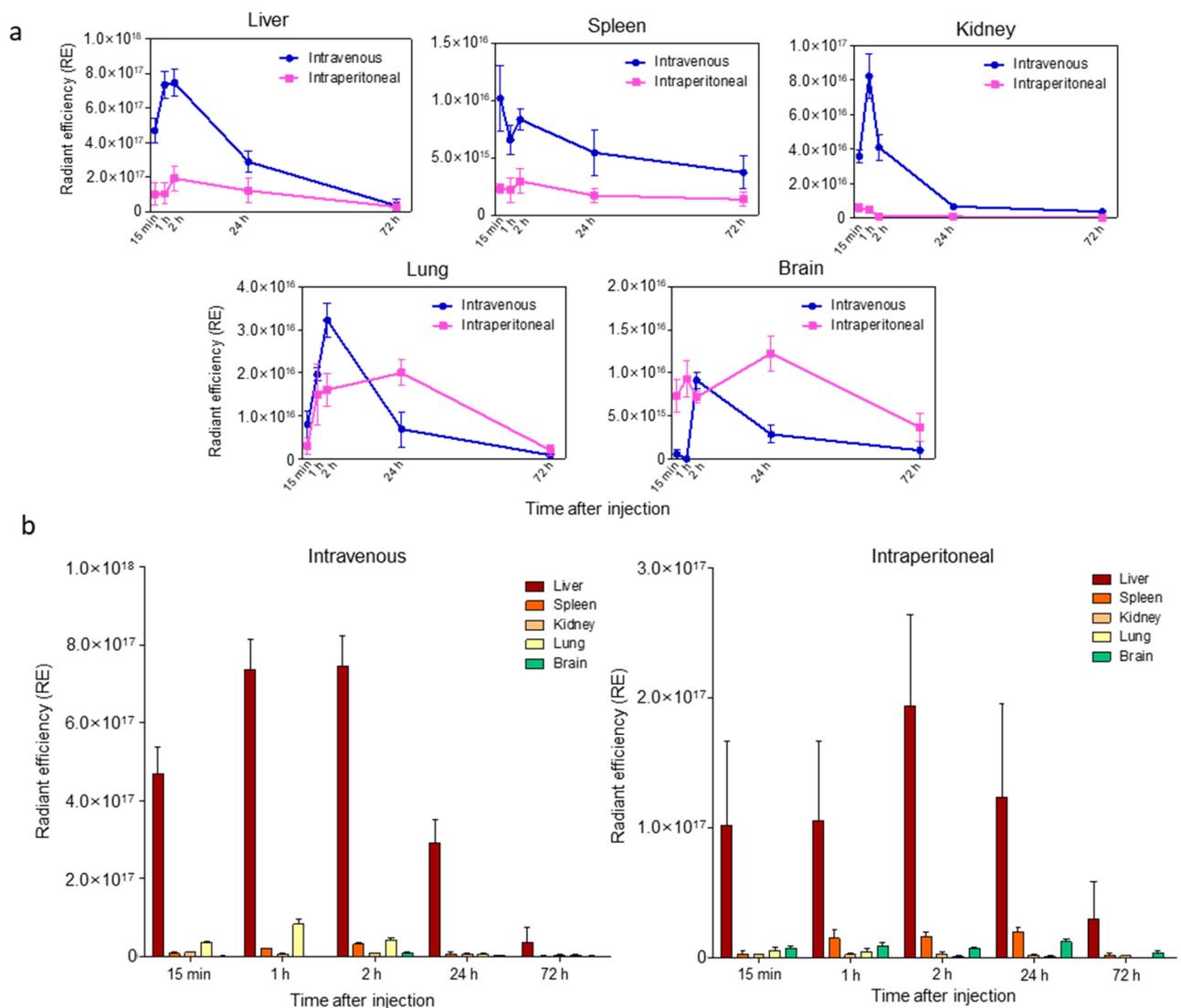


**Figure S1.** Production and characterization of therapeutic exosomes. (a) Schematics of isolation process for therapeutic exosomes are shown. (b) Size of ILB-202 were measured by NTA. (c) Positive and negative markers for exosomes were analyzed in naturally produced exosomes (Exo-Naïve) and ILB-202 by immunoblotting. (d) Purity of ILB-202 were analyzed by high performance liquid chromatography.



**Figure S2.** Biodistribution of free  $^{89}\text{Zr}$ . **(a)** Biodistribution of i.v. administrated  $^{89}\text{Zr}$ -DFO in mice were evaluated by %ID/g at various time points through PET/CT imaging. **(b)** Time-course distribution of  $^{89}\text{Zr}$ -DFO in various organs of mice were analyzed by volume-of-interest analysis extracted from the PET/CT image, which are shown as %ID with SEM at various time points. **(c)** Time-course distribution of  $^{89}\text{Zr}$ -DFO were shown in each organs as %ID with SEM.



**Table S1.** Criteria for confirming batch-to-batch variances of therapeutic exosomes.

Summary	Tests	Acceptance Criteria	Batch A	Batch B
<b>General properties</b>	Appearance	Colorless to yellow and clear to opalescent solution that may contain translucent to white particles	Pass	Pass
	pH	7.5 to 8.5	7.8	7.8
<b>Identity</b>	srIkB protein	Pass	Pass	Pass
<b>Strength</b>	Exosome particle number	4.0E+11 to 6.0E+11 pn/mL	4.7E+11	4.3E+11
	Total protein	Report result	138.4 µg/mL	119.6 µg/mL
	srIkB protein concentration	Report result	1.0 µg/mL	1.0 µg/mL
<b>Purity</b>	Purity	≥ 90 %	95 %	96 %
<b>Potency</b>	In vitro TNF-α assay	50 < relative potency (%) < 150	94 %	110 %
<b>Safety</b>	Endotoxin	≤ 5 EU/mL	< 0.5 EU/mL	< 5 EU/mL
	Sterility	No growth	No growth	No growth