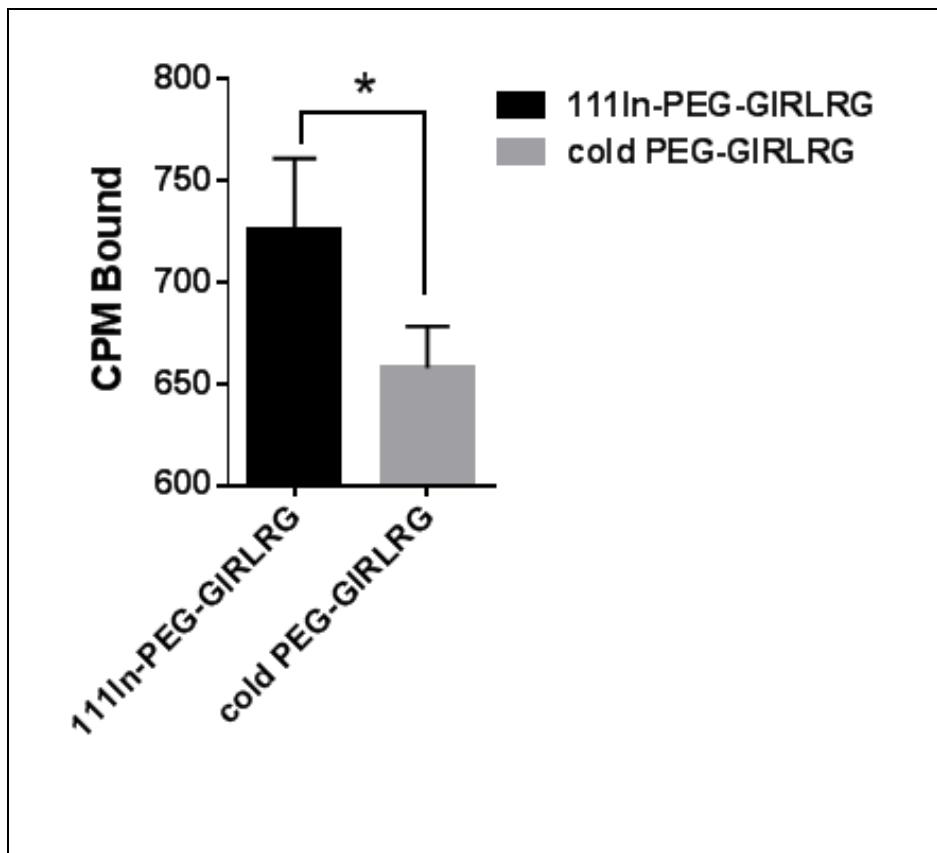
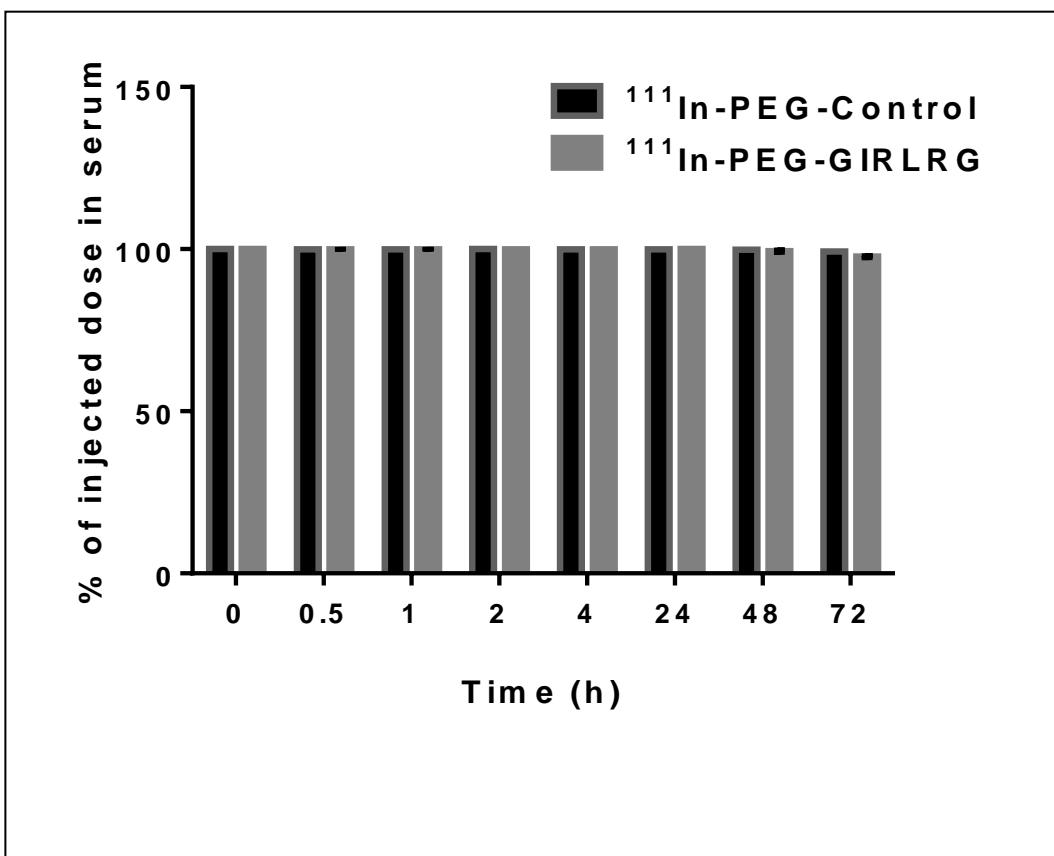


**Supplemental Figure 1.** Instant thin layer chromatogram of  $^{111}\text{In}$ -DTPA-PEG-control (A) and  $^{111}\text{In}$ -DTPA-PEG-GIRLRG (B).  $^{111}\text{In}$ -DTPA-PEG-GIRLRG stays at the origin and  $^{111}\text{In}$ -DTPA moves with solvent front.



**Supplemental Figure 2.** *In vitro* competitive binding assay for PEG-GIRLRG with GRP78 protein. Specific binding (\*  $p < 0.05$ ) of the  $^{111}\text{In}$  labeled GIRLG to GRP78 was observed when the non-labeled peptide (cold) alone was used as a competitor.



**Supplemental Figure 3.** In vitro serum stability assay for  $^{111}\text{In}$ -PEG-control and  $^{111}\text{In}$ -PEG-GIRLRG. Both the compounds are stable till the end of the assay.

**Supplemental Table 1:  $^{111}\text{In}$  labeling with DTPA-PEG-peptides**

<i>Peptide</i>	<i>Activity of <math>^{111}\text{In}</math> (<math>\mu\text{Ci}</math>)</i>	<i>Amount of peptide (<math>\mu\text{g}</math>)</i>	<i>Specific Activity (<math>\mu\text{Ci}/\mu\text{g}</math>)</i>	<i>Labeling Temperature</i>	<i>Buffer</i>	<i>Percent Labeling (%)</i>	<i>1st purification (% labeling)</i>
<b>PEG-Control</b>	100	10	10	37°C, 1h	0.1M Ammonium Acetate pH 5.5	42	82
<b>PEG-Control</b>	50	50	1	37°C, 1h	0.1M Ammonium Acetate pH 5.5	72	100
<b>PEG-Control</b>	100	10	10	95°C, 1h	0.1M Ammonium Acetate pH 5.5	85	100
<b>PEG-Control</b>	50	50	1	95°C, 1h	0.1M Ammonium Acetate pH 5.5	62	91
<b>PEG-Control</b>	100	10	10	37°C, 1h	1M Hepes pH 7.1	3	low, didn't purify
<b>PEG-Control</b>	50	50	1	37°C, 1h	1M Hepes pH 7.1	20	low, didn't purify
<b>PEG-Control</b>	100	10	10	95°C, 1h	1M Hepes pH 7.1	55	78
<b>PEG-Control</b>	50	50	1	95°C, 1h	1M Hepes pH 7.1	47	92
<b>PEG-GIRLRG</b>	50	50	1	37°C, 1h	0.1M Ammonium Acetate pH 5.5	58	88
<b>PEG-GIRLRG</b>	100	10	10	95°C, 1h	0.1M Ammonium Acetate pH 5.5	60	84
<b>PEG-GIRLRG</b>	100	10	10	60°C, 1h	0.1M Ammonium Acetate pH 5.5	40	70