

Supporting Information

Wall et al. 10.1073/pnas.1103247108

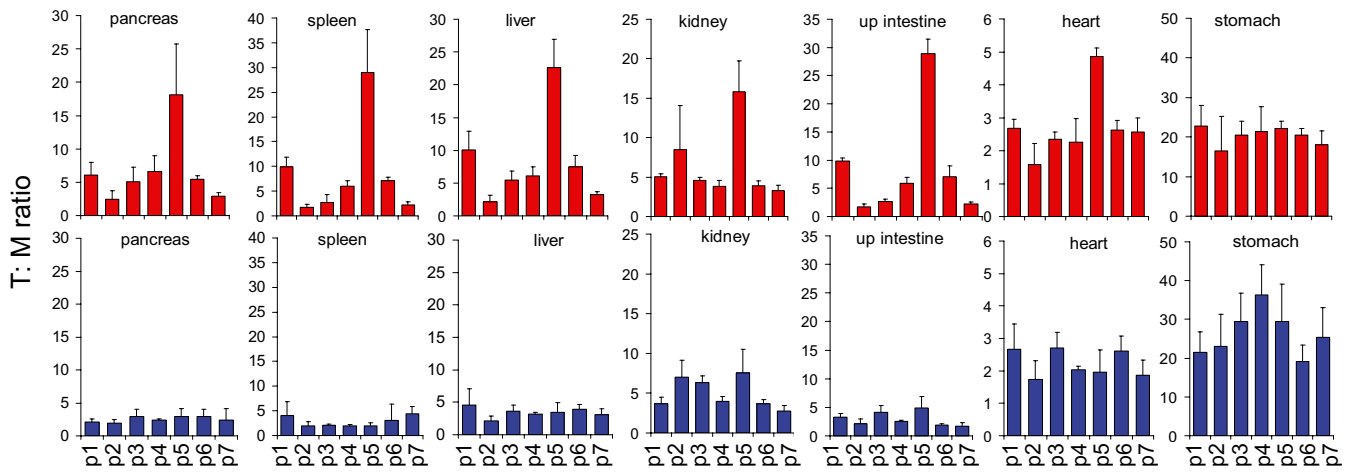


Fig. S1. Tissue to muscle ratios for iodine-125 (^{125}I)-labeled peptides p1–p7 in reactive amyloidosis (AA) amyloid-bearing mice (red) or WT littermate control animals (blue) at 1 h postinjection (pi) of radiotracer. Tissue to muscle ratios were calculated using the mean percent injected dose (ID) per gram values ($n = 3$) for each tissue relative to the mean percent ID per gram values for muscle.

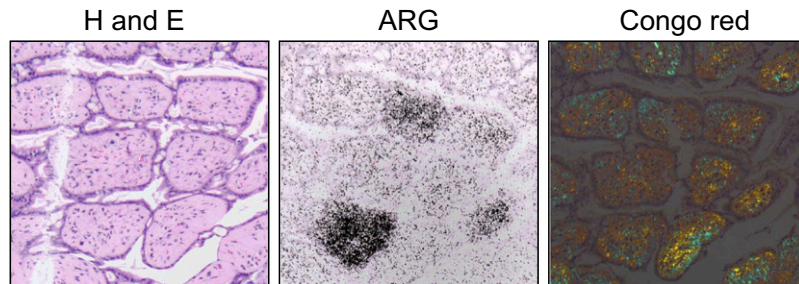


Fig. S2. The ^{125}I -p5 peptide binds apolipoprotein A2c amyloid in vivo in the intestines of transgenic mice. Transgenic mice expressing the mouse apolipoprotein A2c allele were injected with $\sim 100 \mu\text{Ci}$ ^{125}I -p5 peptide and euthanized 2 h pi. Tissues were harvested at necropsy, formalin-fixed tissue sections were prepared, and microautoradiographs were generated as described in *Materials and Methods*. Serial tissue sections were also stained with H&E or Congo red, and images were acquired as described in *Materials and Methods*. (Magnification: 80 \times .) Although variable in concentration, the presence of amyloid-bound ^{125}I -p5 was evidenced in the microautoradiographs as punctate black deposits that were intense in certain villi, and in each case, they colocalized with the red-gold amyloid deposits seen in Congo red-stained tissue section of the intestines.

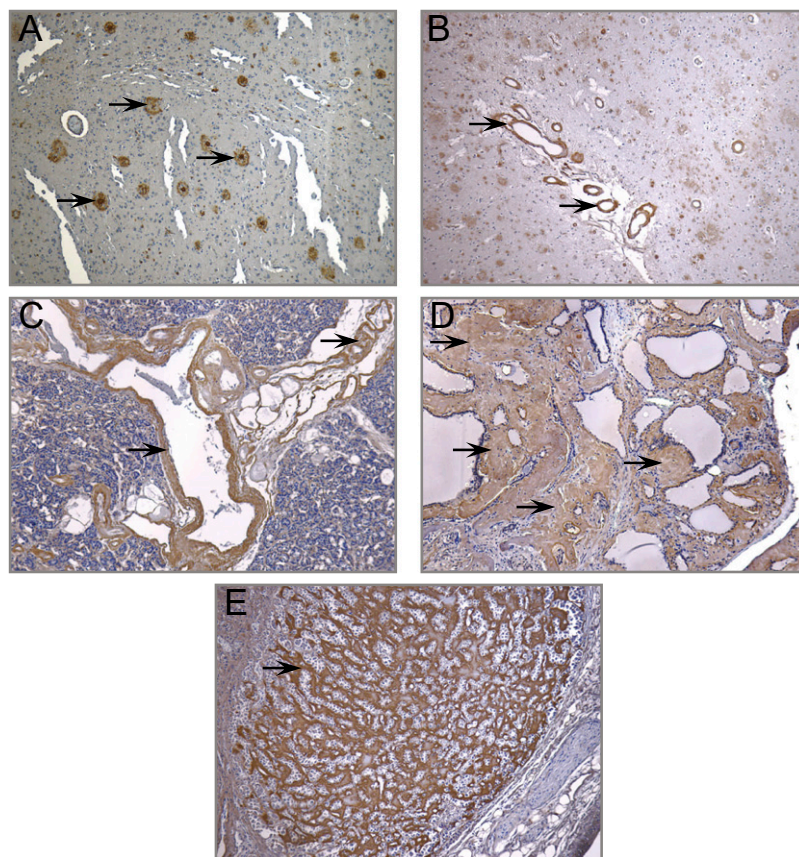


Fig. S3. Immunohistochemical staining of heparan sulfate. Human amyloid-containing tissues from patients with Alzheimer's disease (A and B), light chain amyloidosis (C and D), or AA (E) were stained using an antiheparan sulfate monoclonal antibody (F58-10E4 clone; Siekagaku Biobusiness Corp) followed by the addition of a biotinylated secondary reagent; finally, they were detected by the addition of streptavidin-conjugated HRP and visualized using diaminobenzidine (brown coloration). The specific binding of the antiheparan sulfate antibody (arrows) correlated with the distribution of amyloid deposits evidenced in Congo red-stained tissue sections. All slides were counterstained with H&E. (Magnification: 80 \times .) For display, the images were scaled to 13% of original size.

Table S1. Percent ID per gram 125 I-peptide in AA mice at 4 h pi ($n = 3$)

	Peptide percent ID per gram (mean \pm SD)						
	p1	p2	p3	p4	p5	p6	p7
Muscle	0.9 \pm 0.3	0.4 \pm 0.3	0.5 \pm 0.1	0.6 \pm 0.1	0.7 \pm 0.2	0.5 \pm 0.0	0.7 \pm 0.3
Liver	7.6 \pm 2.7	1.0 \pm 0.5	3.0 \pm 0.8	3.2 \pm 1.0	5.3 \pm 1.0	2.6 \pm 0.2	1.9 \pm 0.4
Pancreas	3.9 \pm 1.3	0.9 \pm 0.7	1.2 \pm 0.1	2.1 \pm 0.9	9.5 \pm 0.9	3.7 \pm 1.2	1.8 \pm 0.6
Spleen	7.4 \pm 2.8	0.8 \pm 0.4	1.0 \pm 0.1	3.7 \pm 1.1	8.3 \pm 1.1	2.8 \pm 0.3	1.2 \pm 0.2
L kidney	3.7 \pm 0.9	1.7 \pm 1.2	1.6 \pm 0.4	2.1 \pm 0.6	2.7 \pm 0.3	1.9 \pm 0.0	1.8 \pm 0.3
Stomach	26.2 \pm 3.9	7.9 \pm 3.3	9.8 \pm 2.4	4.6 \pm 1.1	8.4 \pm 2.4	12.9 \pm 2.9	13.0 \pm 0.2
Small intestine	2.2 \pm 0.6	0.8 \pm 0.4	1.0 \pm 0.3	1.7 \pm 0.5	4.0 \pm 1.5	1.5 \pm 0.6	1.5 \pm 0.3
Large intestine	2.1 \pm 0.5	0.6 \pm 0.5	1.4 \pm 0.2	2.0 \pm 0.6	1.9 \pm 1.2	1.4 \pm 0.2	1.3 \pm 0.3
Heart	2.0 \pm 0.4	0.6 \pm 0.3	1.1 \pm 0.2	1.6 \pm 0.3	1.4 \pm 0.2	1.0 \pm 0.1	1.1 \pm 0.2
Lung	2.8 \pm 0.5	1.1 \pm 0.5	1.3 \pm 0.1	1.6 \pm 0.2	1.1 \pm 0.0	1.1 \pm 0.1	1.5 \pm 0.2
Tongue	nd	nd	1.5 \pm 0.1	2.3 \pm 0.5	nd	nd	nd

nd, not determined.

Table S2. Percent ID per gram ¹²⁵I-peptide in WT mice at 4 h pi (*n* = 3)

	Peptide percent ID/g (mean ± SD)						
	p1	p2	p3	p4	p5	p6	p7
Muscle	0.5 ± 0.3	0.1 ± 0.0	0.1 ± 0.1	0.6 ± 0.2	0.2 ± 0.0	0.1 ± 0.1	0.3 ± 0.1
Liver	1.3 ± 0.3	0.3 ± 0.1	0.3 ± 0.1	2.6 ± 2.3	0.6 ± 0.0	0.5 ± 0.2	1.4 ± 0.2
Pancreas	0.8 ± 0.5	0.2 ± 0.1	0.2 ± 0.1	1.8 ± 1.0	0.6 ± 0.2	0.6 ± 0.4	0.9 ± 0.4
Spleen	0.9 ± 0.4	0.2 ± 0.1	0.2 ± 0.0	1.6 ± 0.8	0.4 ± 0.1	0.6 ± 0.2	1.4 ± 0.2
L kidney	1.2 ± 0.6	0.7 ± 0.2	0.6 ± 0.1	1.5 ± 0.5	1.3 ± 0.1	0.6 ± 0.2	1.6 ± 1.6
Stomach	9.9 ± 5.3	2.3 ± 0.6	1.4 ± 0.7	6.7 ± 3.3	3.6 ± 1.2	5.2 ± 2.8	6.3 ± 1.0
Small intestine	1.0 ± 0.4	0.5 ± 0.4	0.3 ± 0.2	1.3 ± 0.6	0.7 ± 0.3	0.5 ± 0.2	0.7 ± 0.2
Large intestine	0.7 ± 0.3	0.2 ± 0.0	0.2 ± 0.1	1.7 ± 1.0	0.4 ± 0.1	0.5 ± 0.2	0.7 ± 0.3
Heart	0.8 ± 0.4	0.2 ± 0.1	0.2 ± 0.1	1.4 ± 0.6	0.5 ± 0.2	0.4 ± 0.1	0.5 ± 0.1
Lung	1.7 ± 0.7	0.4 ± 0.1	0.9 ± 1.0	1.9 ± 0.7	1.0 ± 0.2	0.7 ± 0.1	0.8 ± 0.1
Tongue	nd	nd	0.3 ± 0.0	2.9 ± 1.2	nd	Nd	nd

nd, not determined.