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Supplemental Information

**A Humoral Immune Response Alters the
Distribution of Enzyme Replacement Therapy
in Murine Mucopolysaccharidosis Type I**

Steven Q. Le, Shih-hsin Kan, Don Clarke, Valentina Sanghez, Martin Egeland, Kristen N. Vondrak, Terence M. Doherty, Moin U. Vera, Michelina Iacovino, Jonathan D. Cooper, Mark S. Sands, and Patricia I. Dickson

Supplemental information

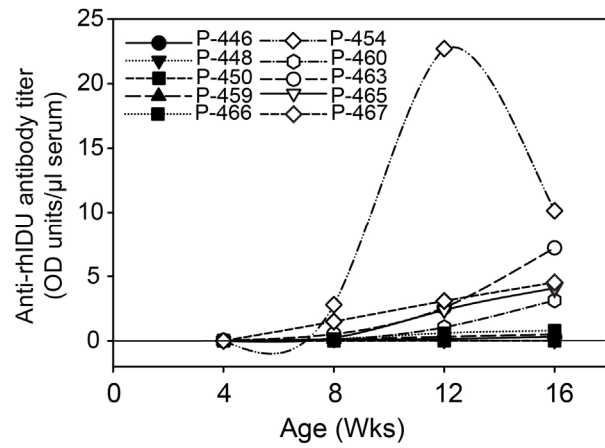


Figure S1. Serum anti-rhIDU IgG antibody titers in MPS I mice. MPS I mice were treated with 1.57 mg/kg weekly intravenous rhIDU and assayed at 4-week intervals as described in the materials and methods. Symbols indicate individual mice. Closed symbols: antibody-negative mice. Open symbols: antibody-positive mice.

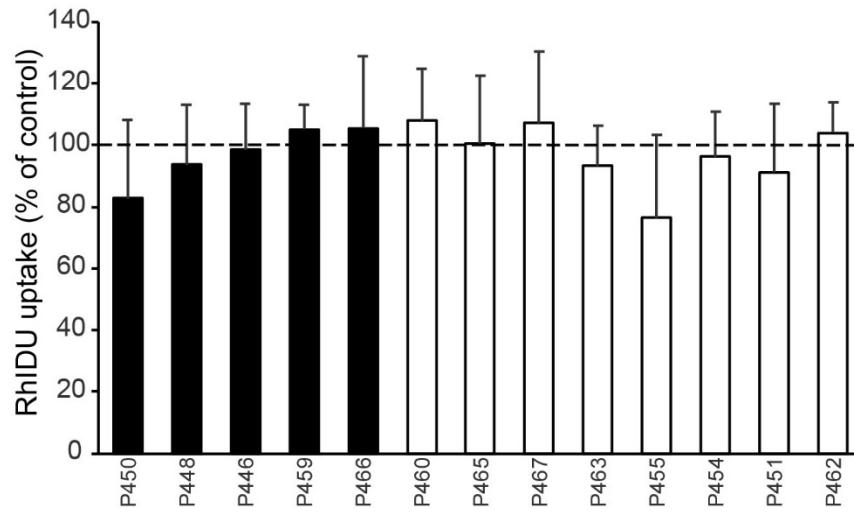


Figure S2. Inhibition of rhIDU uptake by anti-rhIDU antibodies. The uptake of rhIDU into MPS I human fibroblasts was measured in the presence of serum from antibody-negative mice (black bars) and antibody-positive mice (open bars). Values are expressed as a percentage of the uptake of rhIDU into human MPS I fibroblasts in the presence of pooled serum from naive, untreated MPS I (n = 5) and control (n = 5) mice (dashed line). Error bars represent standard deviation.

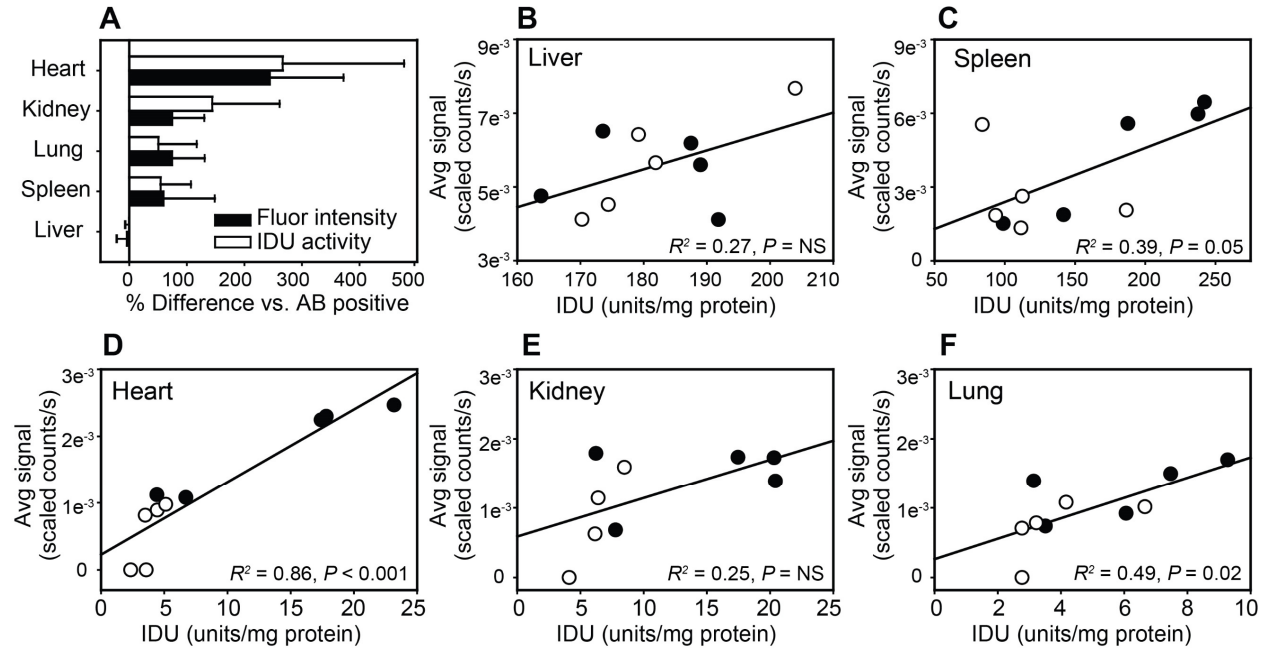
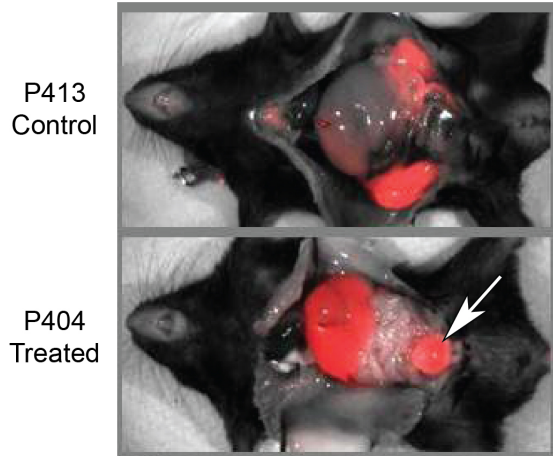


Figure S3. Distribution of fluorescently-labeled rhIDU using fluorescence intensity compared to enzymatic activity assay. (A) Bar graphs of whole-organ fluorescence intensity (“Fluor intensity,” black bars) and iduronidase activity (“IDU activity,” open bars) in antibody-negative mice. Values are expressed as the percent difference in group means compared to antibody-positive (“AB positive”) mice. Error bars represent standard deviation. (B-F) Scatterplots and linear regression of fluorescence intensity versus iduronidase activity. Filled symbols: antibody-negative mice. Open circles: antibody-positive mice.

A**B**

Iduronidase Activity in Urine			
	Genotype	ID	Units/ml
Untreated	MPS I	P-442	0
Tx at Wk16	MPS I	P-428	0
	MPS I	P-437	0
Tx at Wk4-16	MPS I	P-446	0
	MPS I	P-448	0
	MPS I	P-454	0
	MPS I	P-463	0
	MPS I	P-465	0
	MPS I	P-466	0

Figure S4. Excretion of free AF680 fluorescent label in urine. (A) False-color image of fluorescence in organs of control mouse (top) and mouse treated with intravenous fluorescent-labeled rhIDU (bottom). Arrow: bladder. (B) Table showing lack of iduronidase activity in urine of treated mice.

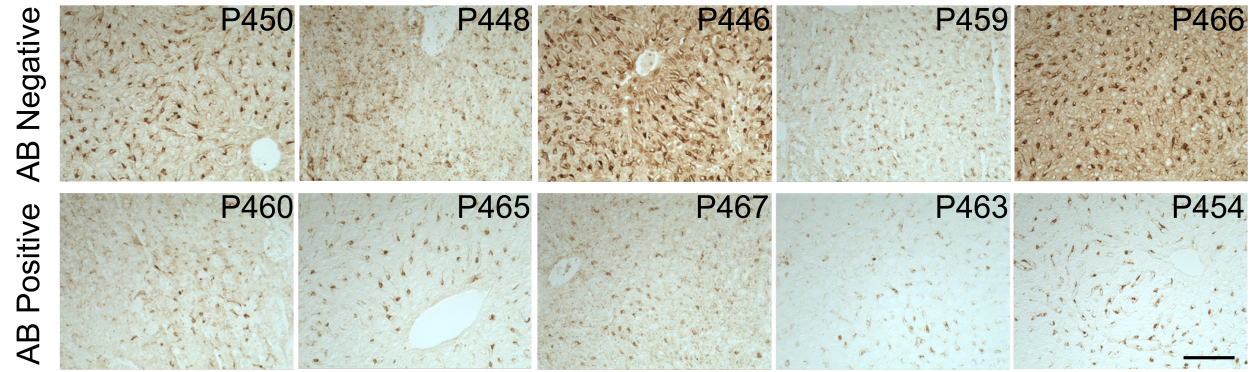


Figure S5. Anti-rhIDU staining in liver of rhIDU-treated MPS I mice. Immunohistochemistry was performed with EXPOSE IHC detection kit (Abcam, Cambridge, MA) on 10 μm -thick organ sections with antibody against rhIDU (BP13, donated by BioMarin Pharmaceutical Inc. and used at 1:2000 dilution). Top row: antibody-negative treated MPS I mice (“AB Negative”). Bottom row: antibody-positive treated MPS I mice (“AB Positive”). 20x magnification. Scale bar 100 μm .