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Supplemental Information

Targeting Root Cause by Systemic scAAV9-hIDS

Gene Delivery: Functional Correction

and Reversal of Severe MPS II in Mice

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Figure S1

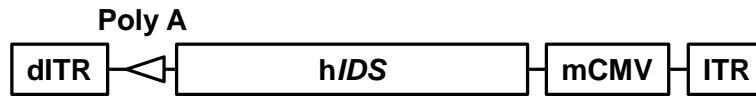
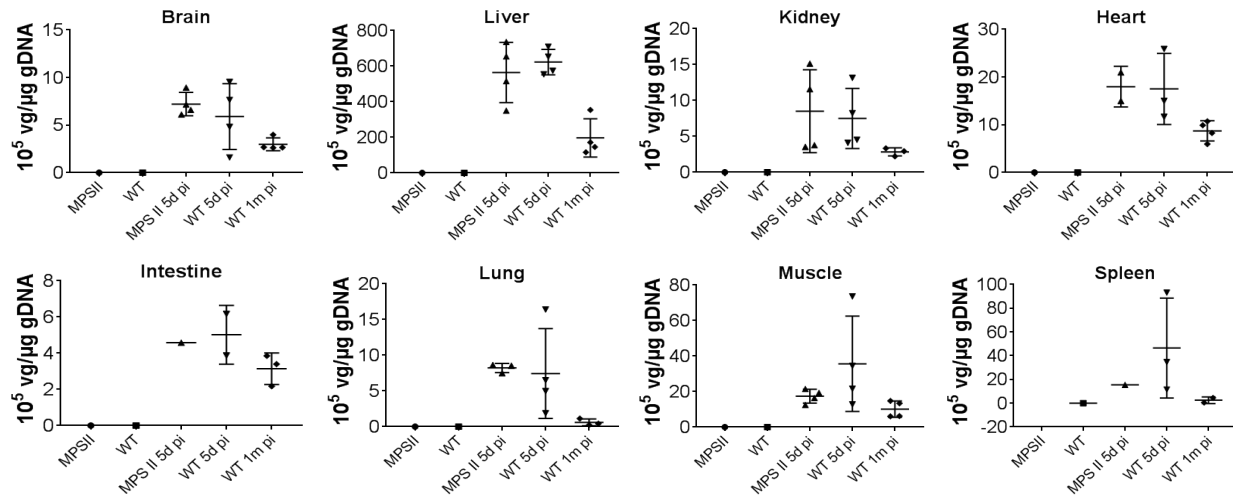


Figure S1. scAAV9-mCMV-hIDS vector genome. ITR: wt AAV2 terminal repeat; **dITR:** AAV2 terminal repeat with deletion of terminal resolution site to force generation of self-complementary dimeric genomes; **mCMV:** a truncated 173bp mini CMV promoter; **hIDS:** human iduronate sulfatase coding region cDNA; **Poly A:** SV40 polyadenylation signal.

Supplementary Figure S2



Supplementary Figure S2 Differential biodistribution of systemically delivered scAAV9-mCMV-hIDS vector in MPS II and WT mice. MPS II and WT mice were treated at age 1-2m with an IV injection of 5×10^{13} vg/kg scAAV9-mCMV-hIDS. Tissues were assayed by qPCR for scAAV9-hIDS vector genome at 5 days or 1m pi (n=4/group).

Table S1. Tumor incidence in AAV9-treated MPS II and non-treated WT mice at endpoints							
Mouse ID #	GT	Vector dose (vg/kg)	Injection age (m)	Test age (m)	Tumors		10 ⁵ vg/ μ g gDNA
					Gross	Microscopic [#]	
855	MPS II	2.5x10 ¹²	1	20	Liver	ND*	0.405 (T1) 6.850 (T2)
858	MPS II	2.5x10 ¹²	1	21	Liver	ND*	0.366 (T1) 9.550 (T2) 0.021 (T3)
870	MPS II	2.5x10 ¹²	1	26	Liver	NE**	15.2 (T1) 0.396 (T2)
882	MPS II	2.5x10 ¹²	1	21	No	Histiocytic sarcoma (liver, spleen)	N/A
151	MPS II	5x10 ¹²	1	25	Liver	NE**	2.92
173	MPS II	5x10 ¹²	1	16	No	Histiocytic sarcoma (liver, Kidney, spleen)	N/A
206	MPS II	5x10 ¹²	1	16	Liver	ND*	1.47
235	MPS II	5x10 ¹²	1	25	Liver	ND*	1.42 (T1) 0.785 (T2)
429	MPS II	5x10 ¹²	3	17	Liver	ND*	8.220 (T1) 5.07 (T2)
691	MPS II	5x10 ¹²	6	22	Liver	ND*	8.60 (T1) 1.00 (T2) 1.23 (T3)
1027	MPS II	1x10 ¹³	6	23	Liver	NE**	0.712 (T1) 0.943 (T2)
1035	MPS II	1x10 ¹³	6	25	Liver	NE**	1.592
1036	MPS II	1x10 ¹³	6	21	Liver	ND*	1.611
1132	MPS II	2x10 ¹³	6	21	Liver	ND*	21.9 (T1) 20.7 (T2)
1062	MPS II	2x10 ¹³	9	21	Liver	ND*	1.20 (T1) 38.5 (T2)
148	WT	NT	N/A	29	Liver	Histiocytic sarcoma (liver, Kidney, lung)	9 tumors, NE**
294	WT	NT	N/A	28	Liver	ND*	<0.001
677	WT	NT	N/A	24	Liver	ND*	ND*
53	WT	NT	N/A	26	Liver	NE**	<0.001(T1) <0.001(T2)
862	WT	NT	N/A	26	Liver	NE**	<0.001
316	WT	NT	N/A	30	Liver	NE**	<0.001(T1) <0.001(T2) <0.001(T3)
332	WT	NT	N/A	23	Liver	NE**	<0.001
294	WT	NT	N/A	28	Liver	NE**	<0.001
402	WT	NT	N/A	28	Liver	NE**	ND*

[#]: Histopathology examination on H&E-stained non-tumor tissues; *ND: not detected; **NE: not examined.