

Figure S1. Intra-Class Biomarker Expression Differences Within Target Tissues. The percent contribution of each individual biomarker was calculated (reads per biomarker/total reads per sample). The percentages from each biomarker within brain (A) and skeletal muscle (B) class are shown.

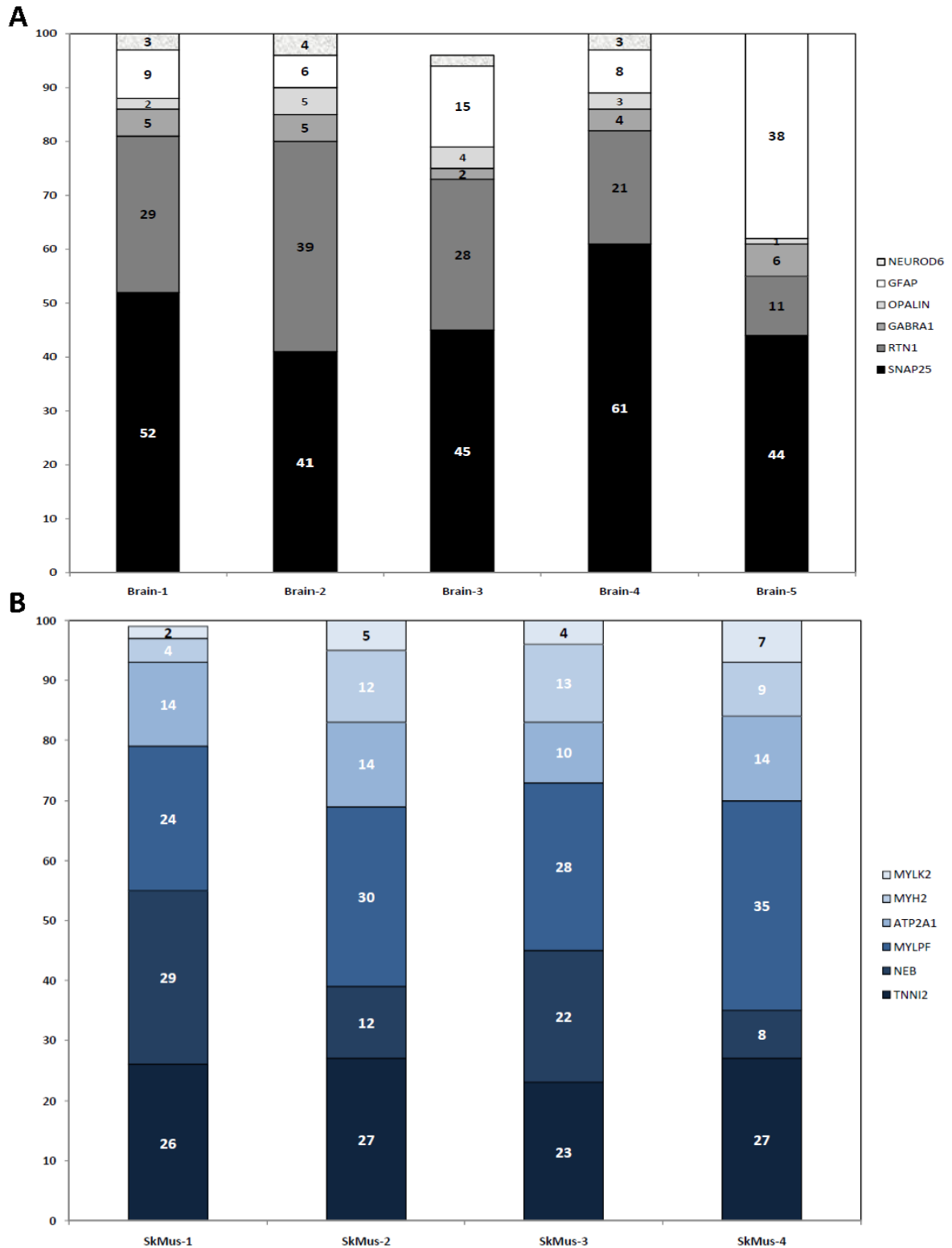


Figure S2. Reproducibility. Individual tissue samples were run in duplicate (-1, -2) using the same amount of input total RNA (50 ng). The percent contribution for individual biomarkers was calculated (reads per biomarker/total reads per sample). The percentages from each group of tissue specific biomarkers were combined in order to determine the percentage of reads per sample attributable to each tissue class. Percent reads attributable to each biomarker class are listed and represented by color. Y-axis – percent contribution; X-axis – tissue samples.

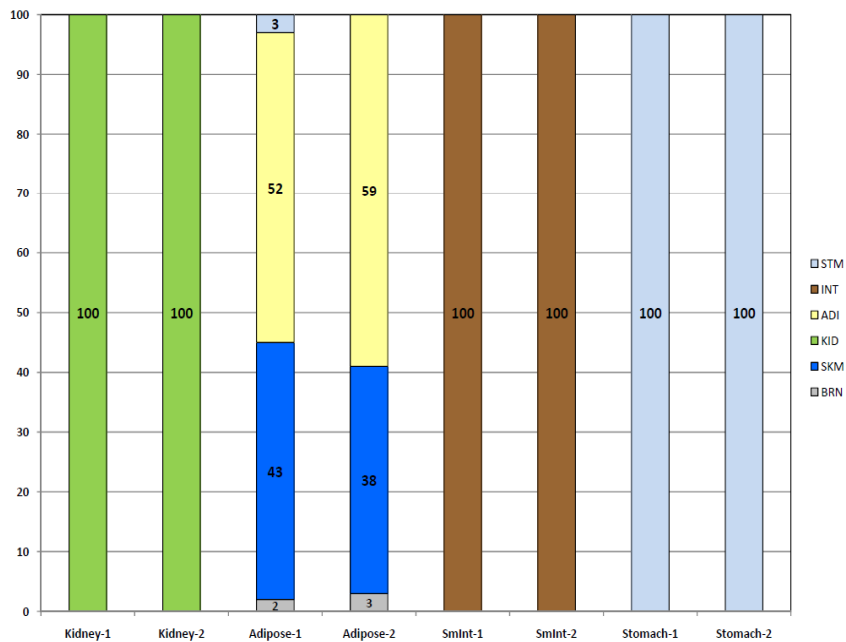
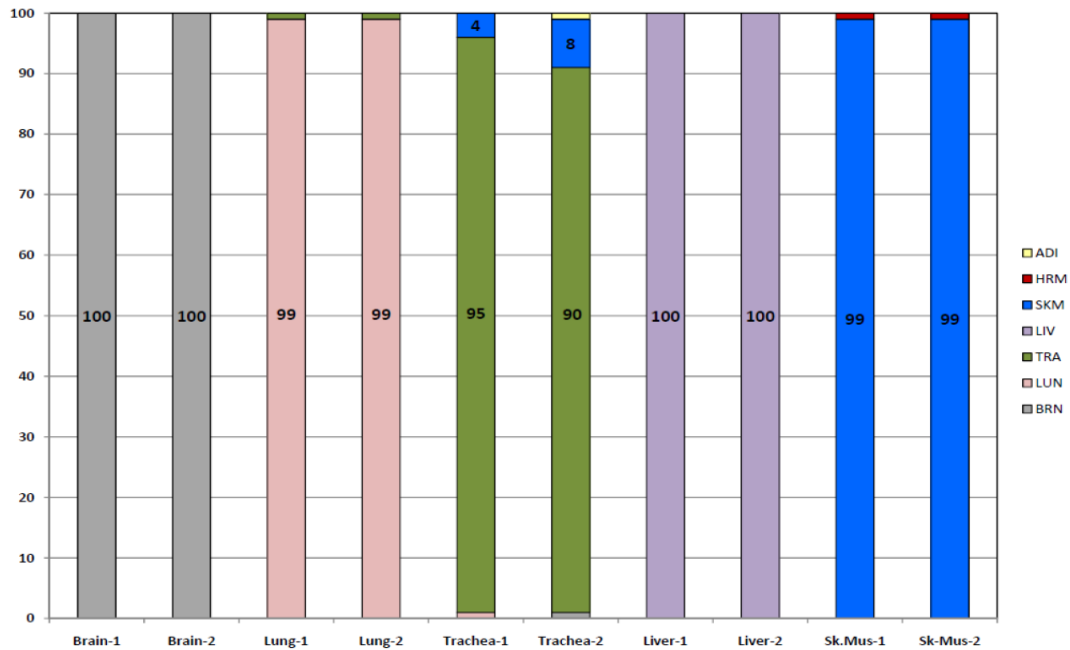


Table S1. List of Additional Biomarkers Tested and Rejected (Not Included in 46-plex Assay)

Tissue	Gene Name	Illumina Assay ID	Reason for Rejection
Brain	OLIG2	6711104	Low expression
	ZDHHC22	6601141	Low expression
	CADP5	6649932	Present in heart, adipose; low expression
Lung	SCGB1A1	6639464	Present in adipose, trachea
	SCGB3A2	6696562	Present in trachea
	ROS1	6844773	Present in brain
	MS4A15	6688001	
	RTKN2	6629508	
Liver	VTN	6717842	Present in heart, brain; low expression
Sk. Mus	MYBPC2	6645240	Present in adipose; lower expression than other candidates
	IDI2	6831880	Present in adipose, lower expression than other candidates
	MYH1	6765512	Present in adipose, lower expression than other candidates
	TNNT3	6597630	Present in heart
	TNNI1	6776678	Present in heart
	KCNA7	6974051	Present in brain and vaginal secretions, very low expression
	MYH4	6808145	Low expression
	LBX1	6764947	Low expression
Heart	BMP10	6836630	Present in liver
	MYL7	6855735	Present in other tissues (bladder)
Kidney	SLC22A8	6815585	Present in brain
	TMEM174	6664457	Low expression
	MCCD1	6974627	Present in vaginal secretions, low expression
	FXVD2		Not tested since suitable assay not available
Adipose	CIDEA	6751245	Present in heart, skin
	GYG2	6637210	Low expression in several tissues
	WT1	6849763	Present in heart, kidney, stomach
	LIPE	6813131	Present in brain, muscle, heart, trachea
Intestine	CPO	6603314	Present in brain, stomach
	KCNJ13	6699108	Present in brain, liver, muscle, adipose; low expression
	MS4A10	6828362	Present in small intestine, kidney
	SLC17A8	6661188	Low expression; not detected in most small intestine samples

Table S2. Specificity Amongst Body Fluids and Other Tissues. Average read counts of each biomarker in body fluid and tissue samples (calculated from N donors; only samples above MTR threshold were included in calculations) are listed. Numbers in parentheses represent the number of samples in which the biomarker was detected. No number in parentheses indicates that the biomarker was detected in all samples tested for that tissue. Shading: dark grey > 10,000 read counts; light grey 5,001 – 9,999 read counts; no color < 5,000 read counts. Average counts below 1,000 were not considered significant and are not shown.

	Blood	Semen	Saliva	Vaginal	Menstrual	Colon	Spinal Cord
N	5	4	4	4	4	1	1
Below MTR	4	4	4	4	4	0	0
SNAP25	16,743 ⁽¹⁾	--	--	--	--		56,086
RTN1	5,723 ⁽¹⁾	--	--	--	--		24,277
GABRA1		--	--	--	--		
OPALIN		--	--	--	--		2,894
GFAP	1,035 ⁽¹⁾	--	--	--	--		416,258
NEUROD6		--	--	--	--		
SFTPB		--	--	--	--		
SFTPD		--	--	--	--		
STFPA1		--	--	--	--		
BPIFB1		--	--	--	--		
AMBP		--	--	--	--		
F2		--	--	--	--		
SPP2		--	--	--	--		
CFHR2		--	--	--	--		
F9		--	--	--	--		
MBL2		--	--	--	--		
AHSG		--	--	--	--		
C9		--	--	--	--		
TNNI2		--	--	--	--		
MYLK2		--	--	--	--		
ATP2A1		--	--	--	--		
MYH2		--	--	--	--		
NEB		--	--	--	--		
MYLPF		--	--	--	--		
ITGB1BP3		--	--	--	--		
MYBPC3		--	--	--	--		
NPPB		--	--	--	--		
NPPA		--	--	--	--		
TNNI3		--	--	--	--		
UMOD		--	--	--	--		
SLC12A1		--	--	--	--		
SLC34A1		--	--	--	--		
SLC22A12		--	--	--	--		
TUSC5		--	--	--	--		
ADIPOQ		--	--	--	--		
PLIN1		--	--	--	--		
FABP6		--	--	--	--		
LCT		--	--	--	--	27,728	
CCL25		--	--	--	--	6,169	
DEFA5		--	--	--	--	163,378	
DEFA6		--	--	--	--	155,578	
PGA5		--	--	--	--		
PGA3		--	--	--	--		
PGA4		--	--	--	--		
GIF		--	--	--	--		
GKN1		--	--	--	--		