

**Supplement table 1.** validation using 7-fold cross-validation

Group	Tissues	R <sup>2</sup> X	R <sup>2</sup> Y	Q <sup>2</sup> Y	R <sup>2</sup> -intercept	Q <sup>2</sup> -intercept
POG	Liver	0.978	0.485	0.454	0.020	-0.662
	Perienteric Fat	1.000	0.999	0.992	0.440	-3.220
	Epididymal Fat	1.000	0.999	0.944	0.554	-3.430
	Perirenal Fat	0.992	0.658	0.602	0.119	-0.818