

**Supplementary Table 2.** Neonatal and biochemical characteristics of patients fulfilling combined Ala:Leu  $\geq 4.0$  and Pro:Leu  $\geq 3.0$  criterion (red) from either DBS or plasma analysis at one institution

Gender	GA (wk)	BW (g)	DBS Collection time (h)	NBS DBS Ala:Leu	NBS DBS Pro:Leu	Age at PAA Draw #1 (DOL)	PAA Ala:Leu	PAA Pro:Leu	Clinical phenotype and diagnosis	NICU stay at DBS collection	Diet (B/F/BF)
M	38	3060	24	<b><u>11.4</u></b>	<b><u>7.4</u></b>	1	<b><u>17.1</u></b>	<b><u>11.5</u></b>	HSD10 mitochondrial disease, hemizygous pathogenic <i>HSD17B10</i>	Y	B
F	39	3080	25	<b><u>7.3</u></b>	<b><u>4.0</u></b>	28	<b><u>20.1</u></b>	<b><u>10.6</u></b>	PDCD, heterozygous pathogenic <i>PDHA1</i>	Y	BF
M	28	1200	24	<b><u>4.4</u></b>	<b><u>7.1</u></b>	61	3.0	2.5	Prematurity, renal disease, transaminitis, bilateral hydrocele, dysmorphic facial features	Y	B
F	41	3210	30	3.4	1.9	2	<b><u>5.5</u></b>	<b><u>3.4</u></b>	Jaundice, functional murmur, acidosis	Y	B
F	39	2566	28	3.4	1.9	65	<b><u>5.4</u></b>	<b><u>5.6</u></b>	Proximal RTA, biallelic pathogenic <i>SLC4A4</i>	N	F
M	37	2330	28	2.2	1.5	6	<b><u>5.4</u></b>	<b><u>3.1</u></b>	FTT	N	F
M	29	1050	24	1.3	1.3	16	<b><u>4.8</u></b>	<b><u>3.0</u></b>	Prematurity, abnormal NBS methionine, congenital dilation of cerebral ventricles, ASD, twin-twin transfusion syndrome donor twin, multiple congenital anomalies	Y	B
F	27	1210	26	3.1	1.6	35	<b><u>4.4</u></b>	<b><u>3.1</u></b>	Prematurity, abnormal NBS methionine	Y	B
M	35	2568	24	2.8	2.4	503	<b><u>4.3</u></b>	<b><u>3.7</u></b>	Prematurity, FTT, celiac disease (biopsy proven disease)	N	B or F
F	41	3930	24	2.8	1.8	264	<b><u>4.2</u></b>	<b><u>3.1</u></b>	Transcobalamin deficiency, methylmalonic acidemia	N	B
<b>Average</b>	35	2420	26	4.2	3.1	98	7.4	5.0			
<b>Median</b>	38	2567	25	3.2	1.9	32	5.1	3.3			
<b>SD</b>	5	979	2	3.0	2.3	162	6.0	3.3			
<b>Min</b>	27	1050	24	1.3	1.3	1	3.0	2.5			
<b>Max</b>	41	3930	30	11.4	7.4	503	20.1	11.5			
<b>n</b>	10	10	10	10	10	10	10	10			

Abbreviations: ASD, atrial septal defect; BW, birth weight; Diet B, F, or BF refers to breast milk, formula or mix of breast milk and formula, respectively; DBS, dried blood spot; FTT, failure to thrive; GA, gestational age; NBS, newborn screening; PAA, plasma amino acids; RTA, renal tubular acidosis; and SD, standard deviation.

Numbers in red, bold and underlined indicate fulfillment of the combined Ala:Leu  $\geq 4.0$  and Pro:Leu  $\geq 3.0$  criterion (CRC) and also correspond to the red dots in Fig 2A (for NBS DBS) and Fig 2B (for PAA).