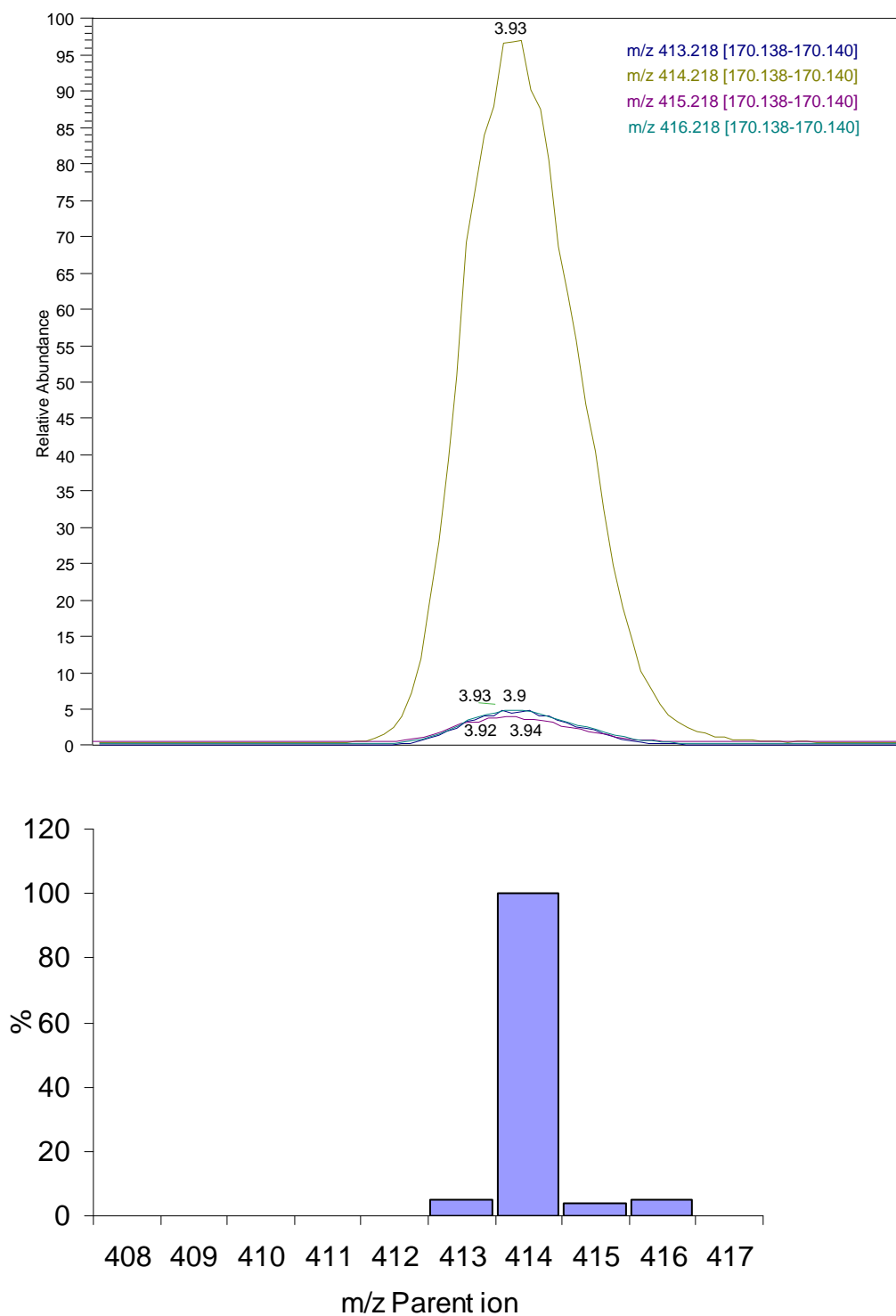


# Online Supporting Material



Supplemental Figure 1. Isotopologue distribution of dansylated U-<sup>13</sup>C<sub>6</sub> arginine. The m/z 414 ion corresponds to the M+6 arginine.

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Supplemental Table 1. Rate of intragastric and intravenous infusion of amino acid and glucose in mice

	Infusion Rate
	$\mu\text{mol kg}^{-1} \cdot \text{h}^{-1}$
Intragastric infusion	
L-Tryptophan	69
L-Tyrosine	77
L-Phenylalanine	374
L-Leucine	916
L-Valine	628
L-Isoleucine	515
L-Lysine	620
L-Threonine	617
L-Histidine	264
L-Proline	759
L-Arginine	301
L-Alanine	680
L-Aspartate	701
L-Serine	621
L-Glutamate	876
L-Glutamine	638
Glycine	606
L-Methionine	203
L-Cysteine	154
Dextrose	12890
Intravenous infusion	
L-Proline	25
L-Arginine	25
L-Glutamate	100
L-Glutamine	100

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Supplemental Table 2. Precursor-intermediate-product model. Tracer recovered in plasma ornithine and precursor contribution to plasma ornithine in fed and feed-deprived mice

	Tracer recovered		Precursor contribution	
	$\mu\text{mol kg}^{-1}\cdot\text{h}^{-1}$	% infused	$\mu\text{mol kg}^{-1}\cdot\text{h}^{-1}$	%RaOrn
Fed				
Dietary Precursors				
Arginine	39.3 ± 1.4	39.1 ± 1.1	117.9 ± 4.1	44.8 ± 2.0
Glutamine	1.0 ± 0.0	0.5 ± 0.0	3.0 ± 0.1	1.2 ± 0.1
Glutamate	1.6 ± 0.2	0.9 ± 0.1	6.8 ± 0.8	2.9 ± 0.4
Proline	2.3 ± 0.4	2.2 ± 0.2	17.3 ± 2.7	7.4 ± 0.9
Plasma Precursors				
Arginine	4.8 ± 0.3	19.1 ± 1.6	90.4 ± 7.4	44.0 ± 3.3
Glutamine	0.8 ± 0.0	0.8 ± 0.0	24.6 ± 1.6	11.5 ± 0.7
Glutamate	0.7 ± 0.0	0.7 ± 0.0	5.6 ± 1.0	2.9 ± 0.5
Proline	0.9 ± 0.0	3.4 ± 0.1	36.4 ± 2.8	16.1 ± 1.9
Total Fed			302.0 ± 9.5	130.8 ± 3.9
Feed-deprived				
Plasma Precursors				
Arginine	6.7 ± 0.6	26.9 ± 2.4	103.3 ± 11.3	89.7 ± 4.2
Glutamine	0.8 ± 0.1	0.8 ± 0.0	16.2 ± 1.4	11.4 ± 1.2
Glutamate	0.7 ± 0.0	0.7 ± 0.0	5.0 ± 1.1	3.9 ± 1.0
Proline	0.9 ± 0.0	3.5 ± 0.0	10.8 ± 0.4	7.1 ± 1.0
Total Feed-deprived			135.3 ± 11.4	112.1 ± 4.6

<sup>1</sup>Values are means ± SEM, *n* =5. Values were obtained using Equations 4, 5, 6 and 7

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Supplemental Table 3. Multifactorial Model. Precursor contribution to plasma ornithine in fed and feed-deprived mice

	Full Model		AIC selected model <sup>b</sup>	
	$\mu\text{mol kg}^{-1}\cdot\text{h}^{-1}$	%RaOrn	$\mu\text{mol kg}^{-1}\cdot\text{h}^{-1}$	%RaOrn
Fed				
Dietary Precursors				
Arginine	57.4 ± 1.8	26.8 ± 0.9	57.1 ± 2.0	26.7 ± 0.9
Glutamine	0.9 ± 1.2 <sup>a</sup>	0.4 ± 0.6 <sup>a</sup>	0.9 ± 1.3	0.4 ± 0.6
Glutamate	4.3 ± 1.2	2.0 ± 0.8		
Proline	-1.9 ± 9.4	-0.9 ± 4.4 <sup>a</sup>		
Plasma Precursors				
Arginine	103.6 ± 9.0	48.4 ± 4.2	104.0 ± 9.7	48.6 ± 4.5
Glutamine	23.1 ± 15.0	10.8 ± 7.0 <sup>a</sup>	27.8 ± 15.8	13.0 ± 7.4
Glutamate	3.6 ± 3.3	1.7 ± 1.5 <sup>a</sup>		
Proline	27.0 ± 17.1	12.6 ± 8.0 <sup>a</sup>	23.5 ± 6.9	11.0 ± 3.2
Total Fed	217.9 ± 26.9	101.8 ± 12.4	213.4 ± 19.9	99.3 ± 9.3
Feed-deprived				
Plasma Precursors				
Arginine	126.8 ± 3.1	89.9 ± 2.2	126.8 ± 3.1	89.9 ± 2.2
Glutamine	14.8 ± 4.0	10.5 ± 2.9	14.8 ± 4.0	10.5 ± 2.9
Glutamate	3.4 ± 1.2	2.4 ± 0.9	3.4 ± 1.2	2.4 ± 0.9
Proline	8.9 ± 2.5	6.3 ± 1.8	8.9 ± 2.5	6.3 ± 1.8
Total Feed-deprived	153.8 ± 5.8	109.1 ± 4.2	153.8 ± 5.8	109.1 ± 4.2

<sup>1</sup>Values are means ± SEM, *n* =5. Values were obtained using Equations 10 and 11

<sup>a</sup>Not different from 0, *P* > 0.05

<sup>b</sup>Akaike's Information Criterion selected model