

## Supplemental Tables and Figure.

**Supplemental Table 1. Composition and nutritional values of the experimental diets.**

<i>Ingredients (g/kg)</i>		NC	HC-Con	HC-CamC24/C16
	Fish protein (from fish)	40.0		
	Plant protein (soy meal)	80.0		
	Cereals (wheat, corn, barley, wheat bran)	839		
	Casein		210	171
	Corn starch		115	115
	Sucrose		233	233
	Lard		229	229
	Camelina oil		21.0	-
	Camelina meal		-	107
	AIN-93M mineral mix		40.0	33.8
	AIN-93M vitamin mix		10.0	10.0
	Mineral & vitamin mix	41.0		
	$\alpha$ -Cellulose		50.0	15.4
	Choline		2.0	2.0
	Water		90.0	83.8
<i>Nutritional values</i>				
Weight %	Protein	16.1		21.0
	Carbohydrate	60.4		34.8
	Lipid	3.1		25.0
	Fibres	3.9		5.0
	Ashes	3.9		4.0
	Humidity	11.9		9.0
Energy content (kcal/kg)		3340		4480
Energy %	Protein	19.3		18.7
	Carbohydrate	72.4		31.1
	Lipid	8.4		50.2

Composition and nutritional value of the NC diet (pellets) were as provided by the manufacturer; nutritional value of the three HC diets was calculated from that of the ingredients, including the composition of the camelina meals as described in the Materials & Methods section.

**Supplemental Table 2. SL composition of the camelina meals (nmol/g)**

	Camelina meal C24	Camelina meal C16
	nmol/g	nmol/g
Total Cer	65.0	80.1
C16-Cer	7.01	29.4
C24-Cer	24.6	20.2
Total hCer	168	167
C16-hCer	4.59	19.0
C24-hCer	70.7	65.8
Total GluCer	107	72
C16-GluCer	16.8	42.8
C24-GluCer	70.5	18.5
Total NH <sub>2</sub> GIPC	3752	3679
C16-NH <sub>2</sub> GIPC	69	3316
C24-NH <sub>2</sub> GIPC	3082	271
Total SL	4093	3998
C16-SL	29.2	3407
C24-SL	3248	375
Total NH <sub>2</sub> GIPC (% of total SL)	91.7	92.0
C16-NH <sub>2</sub> GIPC (% of total NH <sub>2</sub> GIPC)	1.84	90.1
C24-NH <sub>2</sub> GIPC (% of total NH <sub>2</sub> GIPC)	82.1	7.37

Camelina meals C24 and C16 originated from the Céline and LOH2<sup>Y</sup> cultivars, respectively. Cer, ceramide; hCer, hydroxyceramide; GluCer, glucosyl-ceramide; NH<sub>2</sub>GIPC, aminoglycosyl-inositol-phosphoryl-ceramide.

**Supplemental Table 3. Body weight gain and food intake**

	NC	HC-Con	HC-CamC24	HC-CamC16	<i>P</i> ANOVA
Body weight gain after 5 wk (g)	3.47±1.06 <sup>b</sup>	8.78±2.98 <sup>a</sup>	5.21±1.24 <sup>b</sup>	5.08±1.07 <sup>b</sup>	<0.0001
BW after 1 wk (g)	25.0±1.7 <sup>a</sup>	26.9±1.8 <sup>a</sup>	25.6±1.0 <sup>a</sup>	26.0±1.1 <sup>a</sup>	0.0082
Food intake after 6 d (kcal/d)	12.1±0.6 <sup>b</sup>	14.7±1.6 <sup>a</sup>	12.7±1.4 <sup>b</sup>	13.3±0.9 <sup>ab</sup>	0.0028
Food intake after 6 d (kcal/100 g BW/d)	48.9±4.5 <sup>a</sup>	54.6±5.0 <sup>a</sup>	49.5±5.5 <sup>a</sup>	51.1±4.1 <sup>a</sup>	0.0972
Digestibility after 6 d (%)	79.2±1.4 <sup>c</sup>	90.8±1.0 <sup>b</sup>	92.5±1.0 <sup>a</sup>	91.1±0.5 <sup>a</sup>	<0.0001
BW after 4 wk (g)	26.1±1.7 <sup>b</sup>	30.1±3.2 <sup>a</sup>	27.8±1.5 <sup>ab</sup>	27.7±1.4 <sup>ab</sup>	0.0074
Food intake after 4 wk (kcal/d)	11.8±0.5 <sup>ab</sup>	13.6±1.2 <sup>a</sup>	11.1±1.7 <sup>b</sup>	12.0±1.7 <sup>ab</sup>	0.0073
Food intake after 4 wk (kcal/100 g BW/d)	45.3±2.3 <sup>a</sup>	44.3±3.3 <sup>a</sup>	40.0±6.1 <sup>a</sup>	43.2±6.3 <sup>a</sup>	0.1803
Digestibility after 4 wk (%)	81.6±1.0 <sup>c</sup>	90.7±1.2 <sup>b</sup>	92.5±1.0 <sup>a</sup>	91.1±0.5 <sup>b</sup>	<0.0001

Food intake was measured after 4 weeks on the experimental diets.

BW, body weight; NC, normo-caloric; HC, hyper-caloric; Con, control; CamC24, camelina meal C24 (from the commercial Céline cultivar rich in C24 fatty acids); CamC16, camelina meal C16 (from the experimental LOH2 cultivar rich in C16 fatty acids).

**Supplemental Figure 1.** NH<sub>2</sub>GIPCs and GluCers profiles in *Camelina sativa* seeds from the commercial Céline cultivar (CamC24) and from the LOH2<sup>Y</sup> line (CamC16).

NH<sub>2</sub>GIPC and GluCer amounts were shown according to their FA length hydroxylated (h) or nor (c) and to the nature of their LCB moieties [sphinganine (d18:0), sphingenine (d18:1), hydroxysphinganine (t18:0), hydroxysphingenine (t18:1)].

