

1 **Supplementary Table 1.** Fatty acid contents (g/100g meat)<sup>1)</sup> in the *longissimus thoracis* from  
 2 Korean cattle (KC), Holstein (HO), and Angus (AN) steers (n=12)

Fatty acid	KC	HO	AN	SEM	p-value
C12:0	0.02 <sup>a</sup>	0.01 <sup>b</sup>	0.00 <sup>c</sup>	0.00	0.001
C13:0	0.01	0.01	0.01	0.00	0.61
C14:0	0.77 <sup>a</sup>	0.34 <sup>b</sup>	0.15 <sup>c</sup>	0.05	0.001
C14:1	0.27 <sup>a</sup>	0.12 <sup>b</sup>	0.03 <sup>c</sup>	0.02	0.001
C15:0	0.04 <sup>a</sup>	0.03 <sup>b</sup>	0.02 <sup>b</sup>	0.00	0.001
C16:0	5.62 <sup>a</sup>	2.51 <sup>b</sup>	1.27 <sup>c</sup>	0.33	0.001
C16:1	0.97 <sup>a</sup>	0.43 <sup>b</sup>	0.17 <sup>c</sup>	0.06	0.001
C17:0	0.06	0.08	0.10	0.01	0.31
C17:1	0.09 <sup>a</sup>	0.06 <sup>b</sup>	0.06 <sup>b</sup>	0.00	0.001
C18:0	2.11 <sup>a</sup>	1.05 <sup>b</sup>	0.76 <sup>c</sup>	0.11	0.001
C18:1t	0.04 <sup>a</sup>	0.02 <sup>b</sup>	0.02 <sup>b</sup>	0.00	0.005
C18:1n9	8.33 <sup>a</sup>	3.55 <sup>b</sup>	1.90 <sup>c</sup>	0.51	0.001
C18:2	0.30 <sup>a</sup>	0.22 <sup>b</sup>	0.23 <sup>b</sup>	0.01	0.003
C18:3	0.01	0.01	0.01	0.00	0.35
C18:2 <sub>9c11t</sub> + C18:2 <sub>10t12c</sub>	0.07 <sup>a</sup>	0.03 <sup>b</sup>	0.02 <sup>b</sup>	0.01	0.001
C20:1	0.05 <sup>a</sup>	0.02 <sup>b</sup>	0.01 <sup>b</sup>	0.00	0.001
C20:3	0.03 <sup>a</sup>	0.03 <sup>a</sup>	0.02 <sup>b</sup>	0.00	0.01
C20:4	0.03 <sup>c</sup>	0.06 <sup>a</sup>	0.04 <sup>b</sup>	0.00	0.001
SFA <sup>2)</sup>	8.63 <sup>a</sup>	4.02 <sup>b</sup>	2.30 <sup>c</sup>	0.48	0.001
USFA <sup>3)</sup>	10.2 <sup>a</sup>	4.53 <sup>b</sup>	2.50 <sup>c</sup>	0.61	0.001
MUFA <sup>4)</sup>	9.75 <sup>a</sup>	4.19 <sup>b</sup>	2.18 <sup>c</sup>	0.59	0.001
PUFA <sup>5)</sup>	0.43 <sup>a</sup>	0.34 <sup>b</sup>	0.31 <sup>b</sup>	0.02	0.002

3 SEM, standard error of the mean.

4 <sup>1)</sup> Individual fatty acid content per meat (g/100g meat) was calculated as described in  
 5 Materials and Methods.

6 <sup>2)</sup> SFA (saturated fatty acids) = C12:0 + C13:0 + C14:0 + C15:0 + C16:0 + C17:0 +  
 7 C18:0.

8 <sup>3)</sup> USFA (unsaturated fatty acids) = C14:1 + C16:1 + C17:1 + C18:1t + C18:1c + C20:1.

9 <sup>4)</sup> MUFA (monounsaturated fatty acids) = C14:1 + C16:1 + C17:1 + C18:1t + C18:1c +  
 10 C20:1.

11 <sup>5)</sup> PUFA (polyunsaturated fatty acids) = C18:2 + C18:3 + C20:3 + C20:4 + C18:2<sub>9c11t</sub> +  
 12 C18:2<sub>10t12c</sub>.

13 <sup>a-c</sup> Means with different letters within the same row differ (p < 0.05).

14 **Supplementary Table 2.** Pearson correlation coefficients among chemical composition, physico-chemical parameters, and sensory traits of  
 15 pooled *longissimus thoracis* from Korean cattle (KC), Holstein (HO), and Angus (AN) steers (n=36)

Item	Crude protein	Crude fat	CIE <i>L</i> *	CIE <i>a</i> *	CIE <i>b</i> *	pH	Shear force	Flavor	Tenderness	Juiciness	Overall acceptance
<i>Chemical composition</i>											
Moisture	0.82***	-0.98***	-0.09	0.10	-0.24	0.08	0.53***	-0.71***	-0.82***	-0.79***	-0.68***
Crude protein	–	-0.88***	-0.04	-0.05	-0.14	-0.14	0.32	-0.71***	-0.54***	-0.55***	-0.67***
Crude fat		–	0.05	-0.05	0.23	-0.08	-0.48**	0.71***	0.76***	0.73***	0.67***
<i>Physico-chemical parameters</i>											
CIE <i>L</i> *			–	0.25	0.49**	0.26	-0.03	0.14	0.13	0.08	0.14
CIE <i>a</i> *				–	0.75***	0.30	0.07	0.30	-0.01	0.06	0.29
CIE <i>b</i> *					–	0.16	-0.03	0.41*	0.34*	0.38*	0.40*
pH						–	0.14	0.23	0.03	0.12	0.26
Shear force							–	-0.27	-0.45**	-0.39*	-0.30
<i>Sensory traits</i>											
Flavor								–	0.80***	0.84***	0.99***
Tenderness									–	0.96***	0.81***
Juiciness										–	0.85***

16 \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .

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18 **Supplementary Table 3.** Pearson correlation coefficients of chemical composition and physico-chemical parameters with fatty acid  
 19 composition (% of fat) of pooled *longissimus thoracis* from Korean cattle (KC), Holstein (HO), and Angus (AN) steers (n=36)

Item	C14:0	C16:0	C16:1	C18:0	C18:1n9	C18:2	SFA	USFA	MUFA	PUFA
<i>Chemical composition</i>										
Moisture	-0.49**	-0.55***	-0.56***	0.73***	-0.70***	0.77***	0.39*	-0.39*	-0.76***	0.79***
Crude protein	-0.32	-0.28	-0.35*	0.50**	-0.56***	0.51***	0.36*	-0.35*	-0.59***	0.56***
Crude fat	0.48**	0.50**	0.53***	-0.71***	0.67***	-0.72***	-0.39*	0.38*	0.73***	-0.75***
<i>Physico-chemical parameters</i>										
pH	-0.52***	-0.56***	-0.61***	0.66***	-0.28	0.56***	0.16	-0.16	-0.43**	0.51**
Shear force	-0.49**	-0.63***	-0.47**	0.45**	-0.12	0.47**	-0.10	0.11	-0.23	0.46**

20 \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .