

SUPPORTING INFORMATION

Quantitation of Acyl Chain Oxidation Products Formed upon Thermo- Oxidation of Phytosteryl/-stanyl Oleates and Linoleates

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Table S1. Amounts of Nonoxidized Fatty Acid Esters [$\mu\text{g}/\text{mg}$ Esters] Remaining in the Phytostanyl Fatty Acid Ester Mixtures after Thermal Treatment (180 °C/ 40 min) and Percentage Proportions of Ester Losses.

phytostanyl fatty acid esters [$\mu\text{g}/\text{mg}$] ^a	phytostanyl oleates ^b	phytostanyl linoleates ^b
campestanol fatty acid ester**	15.2 ± 0.6	12.1 ± 0.7
sitostanol fatty acid ester***	598.4 ± 6.7	528.0 ± 11.6
total fatty acid esters***	613.6 ± 7.0	540.1 ± 11.0
losses of fatty acid esters [%]***	38.6 ± 0.7	46.0 ± 1.1

^a Statistically significant differences between the means were identified using unpaired Student's *t*-test. Values represent the mean ± standard deviation (n = 3). Levels of significance: p < 0.001, highly significant (***); p < 0.01, very significant (**); p < 0.05, significant (*).

^b Phytostanols esterified to linoleic/oleic acid: 98% sitostanol and 2% campestanol.

Table S2. Amounts of Nonoxidized Fatty Acid Esters [$\mu\text{g}/\text{mg}$ Esters] Remaining in the Phytosteryl/-stanyl Fatty Acid Ester Mixtures after Thermal Treatment (180 °C/ 40 min) and Percentage Proportions of Ester Losses.

phytosteryl/-stanyl fatty acid esters [$\mu\text{g}/\text{mg}$] ^a	phytosteryl/-stanyl oleates ^b	phytosteryl/-stanyl linoleates ^b
campesteryl fatty acid ester***	36.0 \pm 1.8	22.7 \pm 1.1
campestanol fatty acid ester***	13.9 \pm 0.3	9.0 \pm 0.6
sitosteryl fatty acid ester*	282.2 \pm 10.6	259.0 \pm 8.4
sitostanyl fatty acid ester***	68.8 \pm 3.4	43.8 \pm 2.2
total fatty acid esters**	400.9 \pm 13.4	319.0 \pm 17.0
losses of fatty acid esters [%]**	60.0 \pm 1.3	68.1 \pm 1.7

^a Statistically significant differences between the means were identified using unpaired Student's *t*-test. Values represent the mean \pm standard deviation (n = 3). Levels of significance: p < 0.001, highly significant (***); p < 0.01, very significant (**); p < 0.05, significant (*).

^b Phytosterols/-stanols esterified to linoleic/oleic acid: 75% sitosterol, 12% sitostanol, 10% campesterol, 2% campestanol and 1% others.

Table S3. Phytosterol Oxidation Products (POPs) [$\mu\text{g}/\text{mg}$ Esters] Formed upon Heating (180 °C / 40 min) of Phytosteryl/-stanyl Fatty Acid Esters.

phytosterol oxidation products [$\mu\text{g}/\text{mg}$]	phytosteryl/-stanyl oleates ^b	phytosteryl/-stanyl linoleates ^b
5,6 β -epoxycampesterol (*) ^a	2.21 \pm 0.08	1.92 \pm 0.14
5,6 β -epoxysitosterol (*)	22.81 \pm 1.55	19.09 \pm 1.03
5,6 α -epoxycampesterol	1.11 \pm 0.04	1.01 \pm 0.06
7 α -hydroxycampesterol (**)	1.35 \pm 0.10	1.00 \pm 0.06
5,6 α -epoxysitosterol	10.63 \pm 0.95	9.10 \pm 0.64
7 α -hydroxysitosterol (*)	15.81 \pm 1.35	11.62 \pm 0.94
7 β -hydroxycampesterol	1.35 \pm 0.06	1.19 \pm 0.08
7 β -hydroxysitosterol	14.45 \pm 0.88	12.48 \pm 0.92
7-ketocampesterol (***)	2.25 \pm 0.04	1.23 \pm 0.03
7-ketositosterol (***)	24.07 \pm 0.91	13.99 \pm 0.57
total POPs (***)	96.04 \pm 2.80	72.63 \pm 3.16
molar oxidation rate ^c [%]	15.05 \pm 0.51	11.36 \pm 0.44

^a Statistically significant differences between the means were identified using unpaired Student's *t*-test. Values represent the mean \pm standard deviation (n = 3). Levels of significance: p < 0.001, highly significant (***) ; p < 0.01, very significant (**); p < 0.05, significant (*).

^b Phytosterols/-stanols esterified to linoleic/oleic acid: 75% sitosterol, 12% sitostanol, 10% campesterol, 2% campestanol and 1% others.

^c Molar oxidation rate [%] = (total POPs [mol]/ fatty acid esters subjected to thermo-oxidation [mol]) \times 100.