HOKKAIDO UNIVERSITY

Title	Microwave-assisted Derivatization of Fatty Acids for Its Measurement in Milk Using High-Performance Liquid Chromatography
Author(s)	Shrestha, Rojeet; Miura, Yusuke; Hirano, Ken-ichi et al.
Citation	Analytical sciences, 34(5), 575-582 https://doi.org/10.2116/analsci.17P557
Issue Date	2018-05
Doc URL	https://hdl.handle.net/2115/70942
Type	journal article
File Information	34_575_1.pdf, Supporting Information

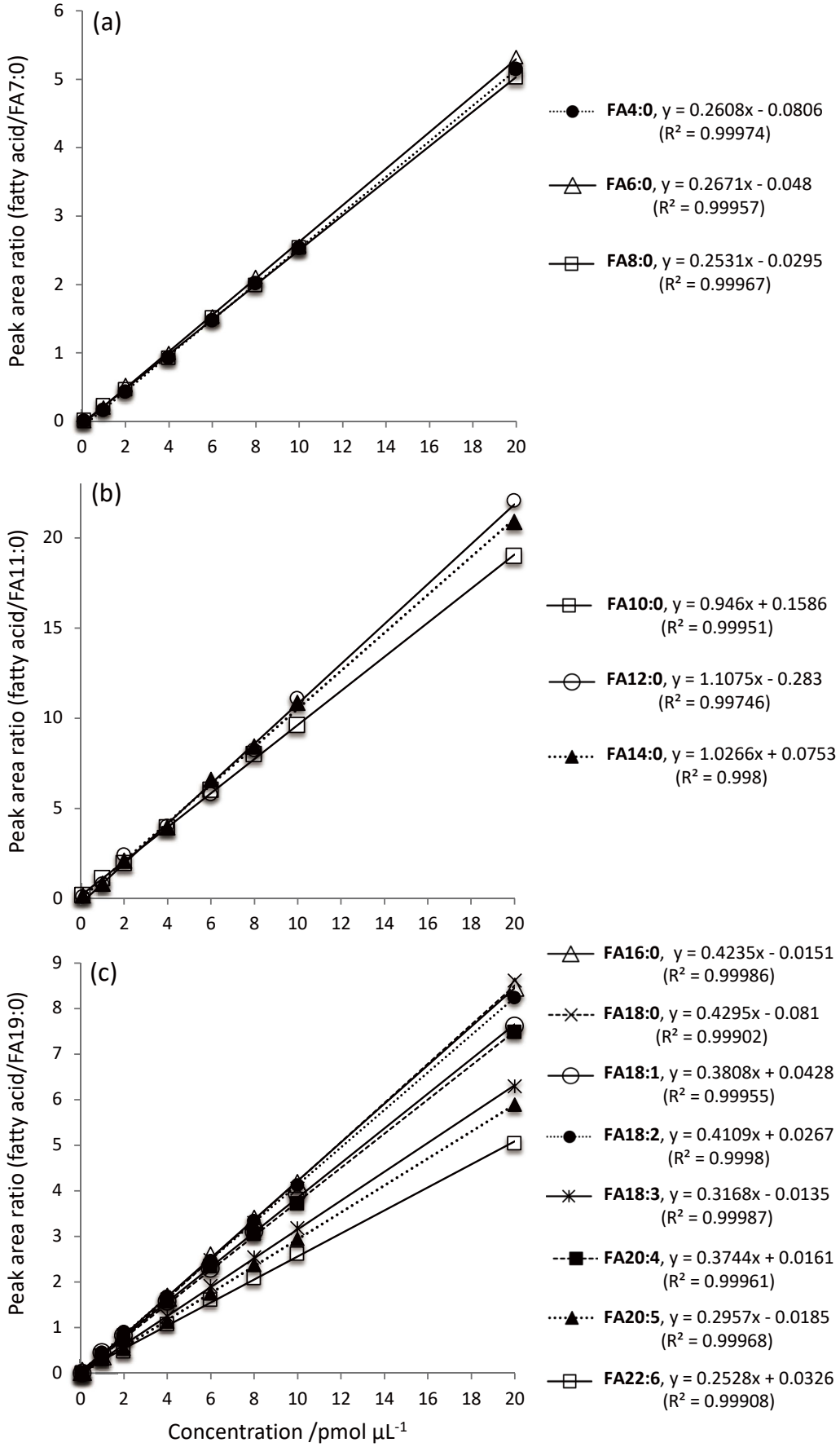


Hokkaido University Collection of Scholarly and Academic Papers : HUSCAP

2018 © The Japan Society for Analytical Chemistry

Supporting Information

Fig. S1 Calibration curve for 2-nitrophenylhydrazine derivatives of (a) butyric (FA4:0), hexanoic (FA6:0), and octanoic acid (FA8:0) using heptanoic acid (FA7:0) as an internal standard; (b) capric (FA10:0), lauric (FA12:0), and myristic acid (FA14:0) using undecanoic acid (FA11:0) as an internal standard; and (c) palmitic (FA16:0), stearic (FA18:0), oleic (FA18:1), linoleic (FA18:2), linolenic (FA18:3), arachidonic (FA20:4), eicosapentaenoic (FA20:5), and docosahexaenoic acid (FA22:6) using nonadecanoic acid (FA19:0) as an internal standard.


(a)
Peak area ratio (fatty acid/FA7:0)
FA4:0, y = 0.2608x - 0.0806 (R² = 0.99974)
FA6:0, y = 0.2671x - 0.048 (R² = 0.99957)
FA8:0, y = 0.2531x - 0.0295 (R² = 0.99967)
(b)
Peak area ratio (fatty acid/FA11:0)
FA10:0, y = 0.946x + 0.1586 (R² = 0.99951)
FA12:0, y = 1.1075x - 0.283 (R² = 0.99746)
FA14:0, y = 1.0266x + 0.0753 (R² = 0.998)
(c)
Peak area ratio (fatty acid/FA19:0)
FA16:0, y = 0.4235x - 0.0151 (R² = 0.99986)
FA18:0, y = 0.4295x - 0.081 (R² = 0.99902)
FA18:1, y = 0.3808x + 0.0428 (R² = 0.99955)
FA18:2, y = 0.4109x + 0.0267 (R² = 0.9998)
FA18:3, y = 0.3168x - 0.0135 (R² = 0.99987)
FA20:4, y = 0.3744x + 0.0161 (R² = 0.99961)
FA20:5, y = 0.2957x - 0.0185 (R² = 0.99968)
FA22:6, y = 0.2528x + 0.0326 (R² = 0.99908)
Concentration /pmol µL-1