Rapid measurement of phytosterols in fortified food using gas chromatography with flame ionization detection

Supplementary Material

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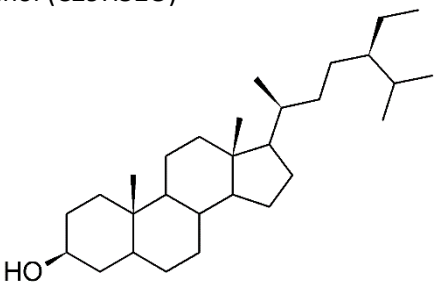
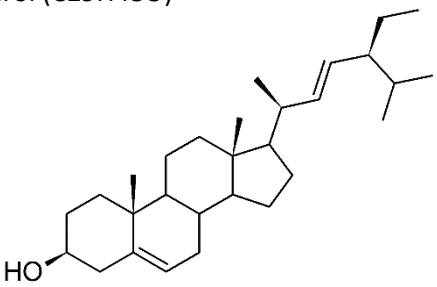
Figure S1. Structures of common phytosterols (Moreau et al., 2002).

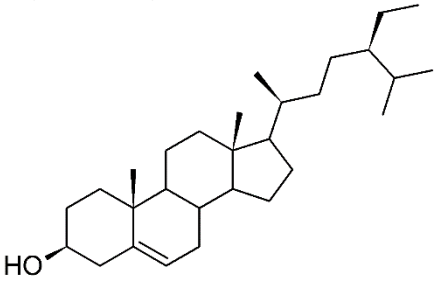
Stigmastanol (C29H52O)



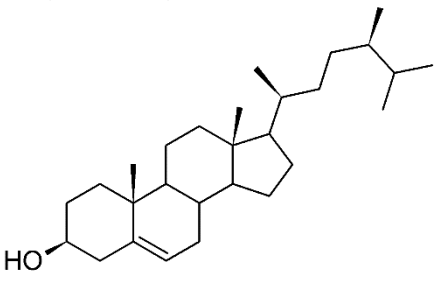
Stigmasterol (C29H48O)



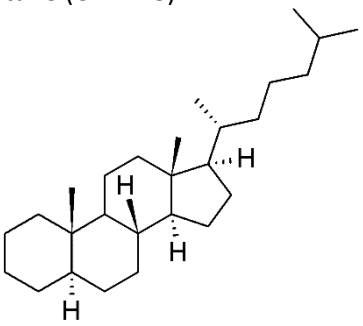
ß-sitosterol (C29H50O)



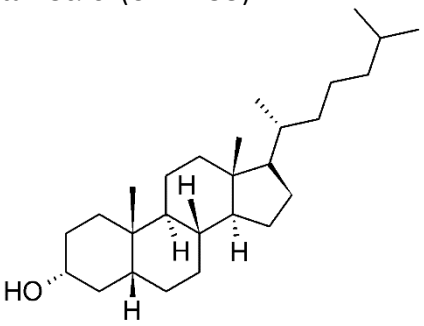
Campesterol (C28H48O)



5α-cholestane (C27H48)



5ß-cholestan-3α-ol (C27H48O)



Brassicasterol (C28H46O)

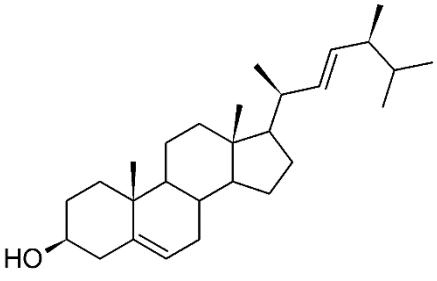
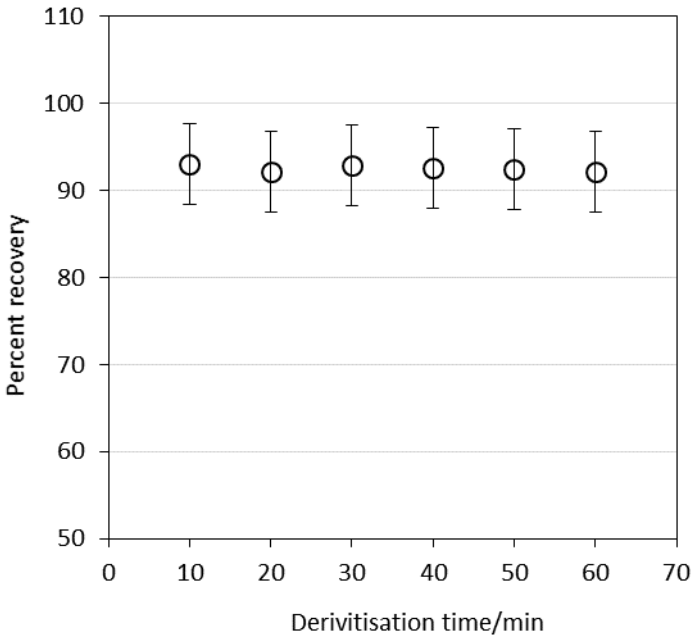


Table S1. Plackett Burnman experimental design to investigate critical method parameters.

Experiment	Extraction solvent	Incubation temperature /°C	Saponification mixture	Saturated NaCl	Aqueous HCl	Water
A	Toluene	100	2.3 M NaOH in methanol	Yes	Yes	
B	Toluene	80	2.3 M KOH in methanol	Yes	Yes	
C	Toluene	100	2.3 M NaOH in methanol	Yes	Yes	
D	Toluene	100	2.3 M NaOH in methanol	Yes	No	
E	Heptane	100	2.3 M NaOH in methanol	Yes	Yes	
F	Toluene	100	2.3 M NaOH in methanol	No	Yes	
G	Heptane	80	5M ethanolic KOH	No		Yes
H	Heptane	80	5M ethanolic KOH	Yes		Yes
I	Heptane	80	5M ethanolic KOH	Yes		No

Figure S2. Effect of BSTFA/TCMS derivatisation time on sterol recovery.



Equation S1. Recovery calculation.

$$Recovery\ \% = \frac{sample\ value}{theorectical\ certified\ value} \times 100$$