

Table S1**Response to dietary plant sterols/stanols in subjects with mutations for sitosterolemia and familial hypercholesterolemia**

Genotype (Reference)	Experimental Protocol	Subjects	Response	Remarks
Heterozygotes for sitosterolemia (Stalenhoef et al. 2001) ^{S1}	2-week run-in: 40 g/d margarine, 35% fats, 0.3% plant sterols (120 mg/d) 4 weeks same diet + 8.3% plant sterols (3.3 g/d)	Parents of a homozygote, both hypercholesterolemic, obese and 52 years old, BMI=33.9 and 35 kg/m ²	Total cholesterol: -11% and -12%; LDL-C: -11%. Plasma plant sterols: +139% (father) (26.5→63.3 mmol/L) (1.08→2.58 mg/dl) and +83% (mother) (19.8→31.5 mmol/L) (0.95→1.29 mg/dl).	2 subjects only, with normal baseline plasma plant sterol concentrations. Father: campesterol=9.8 µmol/L (0.39 mg/dL), sitosterol=11.2 µmol/L (0.46 mg/dL). Mother: campesterol=8.4 µmol/L (0.34 mg/dL), sitosterol=10.7 µmol/L (0.44 mg/dL). 33 controls with plasma campesterol=13.1 µmol/L (0.52 mg/dL); sitosterol=8.9 µmol/L (0.37 mg/dL).
Heterozygotes for sitosterolemia (Kwiterovitch et al. 2003) ^{S2}	2.2 g/d plant sterol esters, 6 weeks and 12 weeks + low fat diet	12 obligate heterozygotes, 50% with moderate dyslipoproteinemia, 1/3 with high plasma plant	LDL-C: -11.2% with low fat diet, -5.9% additional change with plant sterol after 6 weeks but not 12 weeks. Plasma campesterol: +119%, sitosterol:	With the 12-week diet, heterogeneous response: LDL-C increased in one subject.

		sterol levels	+54%. Similar response as subjects without <i>ABCG5/G8</i> mutation.	
Heterozygotes for sitosterolemia (Kratz et al. 2007) ^{S3}	Crossover, 3 diets (control, with 2.0 g/d sterols, with 2.0 g/d stanols) in random order, 6 weeks each	7 heterozygotes, age 34 years, BMI=22.2kg/m ² , total cholesterol=5.81 mmol/L, LDL-C=3.09 mmol/L 10 controls, age 30 years, BMI=21.9 kg/m ² , total cholesterol=5.07 mmol/L, LDL-C=2.54 mmol/L Non hypercholesterolemic subjects	Similar decrease in total cholesterol and LDL-C in both groups, significant changes with stanols: -0.31 mmol/L (-6%) total cholesterol (<i>P</i> =0.04), -0.23 mmol/L (-9%) LDL-C (<i>P</i> =0.06). No difference in plasma plant sterol changes, as percentages, between the two groups. Plasma plant sterol changes with sterols: +14.5 µmol/L (+0.59 mg/dL, +23%) in heterozygotes, +4.9 µmol/L (+0.20 mg/dL, +20.5%) in controls. Plasma plant sterol changes with stanols: -34.2 µmol/L (-1.40 mg/dL, -54.2%) in heterozygotes, -12.2 µmol/L (-0.50 mg/dL, -50.6%) in controls.	Smaller decrease in total cholesterol and LDL-C with sterols than with stanols.
Heterozygotes for sitosterolemia	Crossover, random order, 4 weeks	10 heterozygotes for <i>ABCG8</i> S107X	Similar decrease in total cholesterol and LDL-C in the two groups.	Heterozygotes: 31.1 µmol/L (1.27 mg/dL) plasma plant

(Myrie et al. 2012) ^{S4}	each diet: 1.6 g/d sterols vs. control	(Hutterites), 15 healthy controls, 34 years, BMI=29.9 kg/m ²	<p>LDL-C: - 10.7% in heterozygotes vs. -9% in controls.</p> <p>Plasma sitosterol: +9% in heterozygotes vs. +6% in controls.</p> <p>Plasma campesterol: +40% vs. +28% (NS).</p> <p>Total plant sterols: +28% vs. +20% (NS).</p>	<p>sterols, increased to 39.7 µmol/L (1.62 mg/dL).</p> <p>Controls: 20.2 µmol/L (0.82 mg/dL) increased to 24.0 µmol/L (0.98 mg/dL).</p> <p>Plasma plant sterols increased more in heterozygotes than in controls but absorption and synthesis rates were similar in the two groups (stable isotope methods).</p>
Meta-analysis Heterozygotes for FH (Moruise et al. 2006) ^{S5}	4 weeks-3 months sterols /stanols in spreads (4 studies) 2 studies with granules (12.0 g/d and 24.0 g/d sterols) were excluded from the meta-analysis	<p>Age: 2 to 69 years</p> <p>average total cholesterol at baseline: 7.0 mmol/L (2.7 g/l)</p> <p>LDL-C: 5.4 mmol/L (2.09 g/l)</p> <p>In the meta-analysis: n=124 FH; 6.5±1.9 weeks intervention; 2.3±0.5 g/d sterols/stanols</p>	<p>2.3 g/d sterols and 2.8 g/d stanols (children): -11% total cholesterol, -14-15% LDL-C</p> <p>1.6 g/d sterols (children): -7.4% total cholesterol, -10.2% LDL-C.</p> <p>2.5 g/d sterols (adults): -8% total cholesterol, -10% LDL-C.</p> <p>Meta-analysis: -0.65 mmol/L total cholesterol (-0.88 mmol/L--0.42 mmol/L), -0.64 LDL-C (-0.86 mmol/L--</p>	<p>13 studies of which 6 were included in the review and 4 in the meta-analysis.</p> <p>No data on plasma plant sterols.</p> <p>With 12.0 g/d (granulates), HDL-C declined by 15%.</p>

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Abbreviations: ABCG8, ATP-binding cassette subfamily G member 8; FH, familial hypercholesterolemia; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol

References

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