

Supplemental Table S1. Lipid and inflammation proteins. Average protein composition after 4-weeks intervention with low-fat milk supplemented with Phytosterols

| | Protein | Basal* | PhyS* | PhyS/B | P-value |
|-----|-------------------------------|---------|--------|--------|---------|
| LDL | Apo A-I | 30.5 | 26.7 | 0.79 | 0.22 |
| | Apo A-IV | 1.4 | 1.9 | 1.64 | 0.08 |
| | Apo CIII | 6 | 3.7 | 0.43 | 0.18 |
| | Apo D | 8.1 | 4.4 | 0.60 | 0.14 |
| | Apo E | 23.5 | 25.6 | 0.96 | 0.89 |
| | Apo J | 2.2 | 2.4 | 0.92 | 0.50 |
| | Apo L1 | 0.7 | 0.7 | 1.30 | 0.22 |
| HDL | AAT | 2.46 | 2.4616 | 1.00 | 0.99 |
| | Apo D | 8.80 | 9.11 | 1.04 | 0.55 |
| | Apo L1 | 3.17 | 2.69 | 0.85 | 0.13 |
| | Apo M | 1.47 | 1.79 | 1.21 | 0.12 |
| | Apo AIV | 1.39 | 1.34 | 0.96 | 0.59 |
| | Apo AI | 1038.53 | 799 | 0.77 | 0.46 |
| | Apo E | 6.24 | 6.05 | 0.97 | 0.72 |
| | C3 Complement | 0.07 | 0.07 | 0.92 | 0.69 |
| | Fibrinogen gamma chain | 0.02 | 0.02 | 0.93 | 0.50 |
| | HPT | 0.26 | 0.26 | 0.99 | 0.95 |
| | LCAT | 0.81 | 0.94 | 1.17 | 0.22 |
| | PON-1 | 3.80 | 3.52 | 0.92 | 0.18 |
| | Serum albumin | 7.56 | 8.01 | 1.06 | 0.64 |
| | Serum Amyloid A-4 | 0.28 | 0.39 | 1.39 | 0.08 |
| | TTR | 0.20 | 0.25 | 1.20 | 0.12 |

* Protein intensity corrected by total-cholesterol levels, expressed as mean value of all subjects $\times 10^5$ AU

AAT=alpha-1 antitrypsin; Apo=apolipoprotein; HDL=high density lipoproteins; HPT=haptoglobin; LCAT=lecitin cholesterol acyltransferase; LDL=low density lipoproteins; PhyS=phytosterols; PON-1=paraoxonase-1; TTR=transthyretin.

Supplemental Table S2. Lipid and inflammation proteins. Average protein composition after 4-weeks intervention with low-fat milk supplemented with Omega 3

| | Protein | Basal* | $\omega 3^*$ | $\omega 3/B$ | P-value |
|-----|-----------------|--------|--------------|--------------|---------|
| LDL | Apo A-I | 105.4 | 170.5 | 1.8 | 0.50 |
| | Apo A-IV | 7.3 | 5.9 | 0.83 | 0.23 |
| | Apo CIII | 44.1 | 29.2 | 0.63 | - |
| | Apo D | 20.7 | 35.3 | 1.3 | 0.14 |

| | | | | |
|-------------------------------|---------|---------|------|--------------|
| Apo E | 120.8 | 138.9 | 1.5 | 0.04 |
| Apo J | 11.9 | 21.5 | 1.7 | 0.14 |
| Apo L1 | 2.7 | 2.8 | 1.00 | 0.89 |
| AAT | 12.19 | 17.64 | 1.45 | 0.13 |
| Apo D | 40.07 | 45.29 | 1.13 | 0.008 |
| Apo L1 | 11.30 | 16.54 | 1.46 | 0.04 |
| Apo M | 6.99 | 7.58 | 1.08 | 0.23 |
| Apo AIV | 7.29 | 8.22 | 1.13 | 0.22 |
| Apo AI | 3577.60 | 4733.38 | 1.32 | 0.009 |
| Apo E | 32.48 | 42.26 | 1.30 | 0.22 |
| C3 Complement | 0.35 | 1.03 | 2.95 | 0.25 |
| Fibrinogen gamma chain | 1.30 | 2.12 | 1.63 | 0.28 |
| HPT | 3.79 | 4.79 | 1.26 | 0.15 |
| LCAT | 19.24 | 22.40 | 1.16 | 0.04 |
| PON-1 | 35.23 | 49.10 | 1.39 | 0.05 |
| Serumalbumin | 2.58 | 1.39 | 0.54 | 0.24 |
| SerumAmyloid A-4 | 0.98 | 1.56 | 1.60 | 0.24 |
| TTR | 0.07 | 0.47 | 6.35 | 0.11 |

* Protein intensity corrected by triglyceride levels, expressed as mean value of all subjects $\times 10^5$ AU

AAT=alpha-1 antitrypsin; Apo=apolipoprotein; HDL=high density lipoproteins; HPT=haptoglobin; LCAT=lecitin cholesterol acyltransferase; LDL=low density lipoproteins; PON-1=paraoxonase-1; TTR=transthyretin.

Supplemental Table S3. Protein composition in lipoprotein depleted plasma after PhyS-milk intake.

| Protname | Basal* | PhyS* | PhyS/B | P Value |
|------------------------------|---------|---------|--------|---------|
| Alpha-1-antitrypsin | 5.47 | 14.57 | 2.66 | 0.18 |
| Alpha-1B-glycoprotein | 260.46 | 233.79 | 1.11 | 0.47 |
| Alpha-2-antiplasmin | 40.03 | 33.43 | 0.83 | 0.14 |
| Apo A-I | 2.81 | 9.18 | 3.27 | 0.14 |
| Apo A-IV | 122.39 | 129.95 | 1.06 | 0.72 |
| Apo E | 16.46 | 15.34 | 0.93 | 0.47 |
| Apo J | 181.43 | 176.98 | 0.98 | 0.47 |
| Beta-2-glycoprotein 1 | 48.15 | 63.03 | 0.76 | 0.47 |
| Complement C1r | 8.81 | 4.9 | 0.56 | 0.47 |
| Complement factor I | 6.15 | 10.02 | 1.63 | 0.47 |
| Fetuin A | 555.66 | 482.87 | 1.15 | 0.47 |
| Hemopexin | 1069.61 | 1033.66 | 0.97 | 0.47 |
| HPT | 218.92 | 147.46 | 1.48 | 0.72 |
| Kininogen | 5.27 | 4.37 | 1.20 | 0.07 |
| mTTR | 49.71 | 55.35 | 1.11 | 0.47 |
| Protein AMBP | 18.02 | 18.28 | 1.01 | 0.47 |

| | | | | |
|----------------------------------|--------|--------|------|------|
| RBP4 | 131.19 | 106.29 | 1.23 | 0.47 |
| SAP | 15.08 | 11.03 | 0.73 | 0.07 |
| Serumalbumin | 24.55 | 20.23 | 1.21 | 1.00 |
| Vitronectin | 24.21 | 16.29 | 0.67 | 0.72 |
| Zinc-alpha-2-glycoprotein | 66.74 | 72.36 | 1.08 | 1.00 |

* Protein intensity, expressed as mean value of all subjects $\times 10^5$ AU

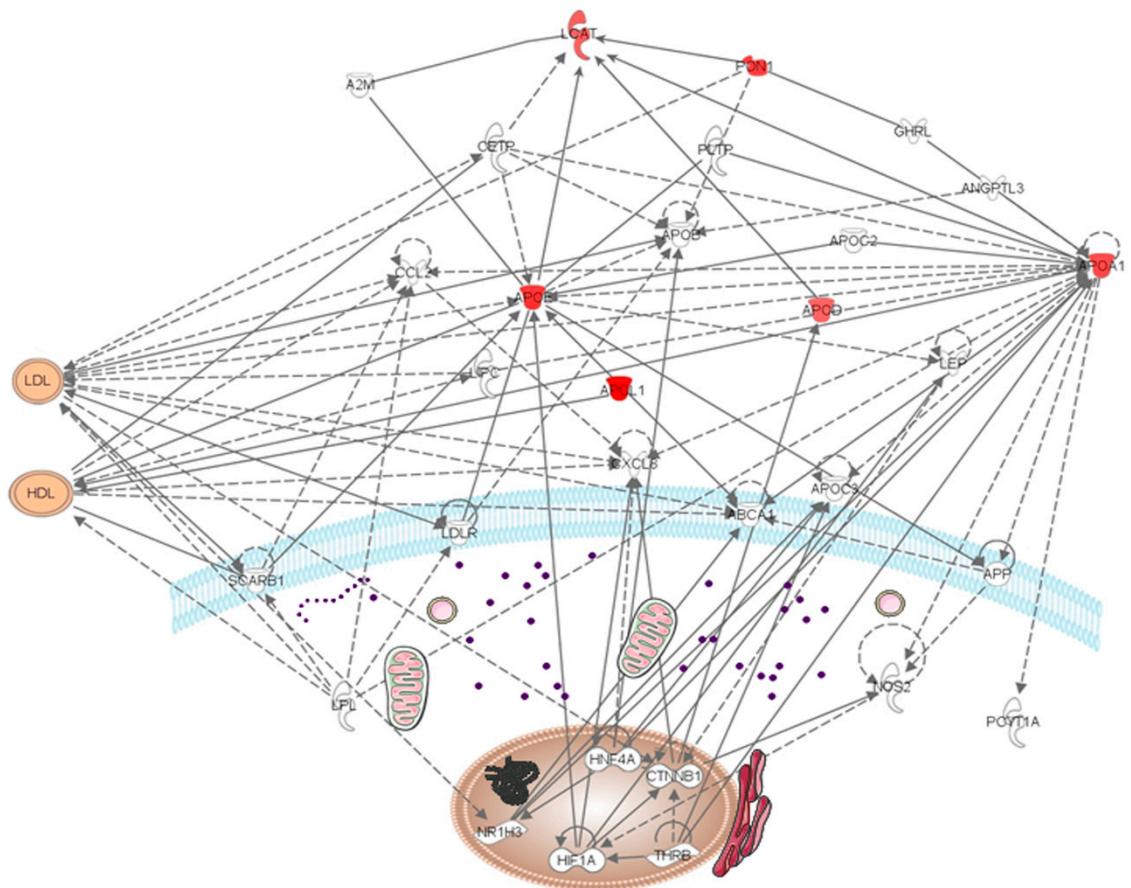
AMBP=alpha-1-microglobulin/bikunin precursor; Apo=apolipoprotein; HPT=haptoglobin; PhyS=phytosterols; mTTR=transthyretin monomer; RBP4=retinol binding protein 4; SAP=serum amyloid P.

Supplemental Table S4. Protein composition in lipoprotein depleted plasma after $\omega 3$ -milk intake.

| Protname | Basal | $\omega 3$ | $\omega 3/B$ | P Value |
|----------------------------------|--------|------------|--------------|---------|
| Alpha-1-antitrypsin | 2.16 | 2.83 | 0.76 | 0.59 |
| Alpha-1B-glycoprotein | 243.38 | 304.44 | 0.80 | 0.72 |
| Alpha-2-antiplasmin | 34.94 | 34.38 | 0.98 | 0.72 |
| Apo A-I | 3.17 | 4.66 | 0.68 | 0.11 |
| Apo A-IV | 133.11 | 150.49 | 1.13 | 1.00 |
| Apo E | 23.31 | 22.98 | 0.99 | 0.27 |
| Apo J Total | 213.17 | 215.08 | 1.01 | 1.00 |
| Beta-2-glycoprotein 1 | 58 | 55.25 | 0.95 | 0.72 |
| Complement C1r | 12.33 | 12.29 | 1.00 | 0.18 |
| Complement factor I | 6.99 | 7.02 | 1.00 | 0.72 |
| Fetuin A | 490.18 | 549.62 | 1.12 | 0.47 |
| Hemopexin | 897.6 | 1184.26 | 0.76 | 0.14 |
| HPT | 178.94 | 200.2 | 1.12 | 0.07 |
| Kininogen | 4.63 | 6.68 | 0.69 | 0.47 |
| mTTR | 58.14 | 64.96 | 1.12 | 1.00 |
| Protein AMBP | 24.17 | 21.1 | 1.15 | 0.07 |
| RBP4 | 118.88 | 142.04 | 0.83 | 0.14 |
| SAP | 18.99 | 17.17 | 0.90 | 0.47 |
| Serumalbumin | 27.02 | 24.69 | 0.91 | 0.07 |
| Vitronectin | 25.09 | 21.37 | 1.17 | 0.72 |
| Zinc-alpha-2-glycoprotein | 61.02 | 72.09 | 1.18 | 0.47 |

* Protein intensity, expressed as mean value of all subjects $\times 10^5$ AU

AMBP=alpha-1-microglobulin/bikunin precursor; Apo=apolipoprotein; HPT=haptoglobin; mTTR=transthyretin monomer; RBP4=retinol binding protein 4; SAP=serum amyloid P.



Supplemental Figure S1. *In silico* analysis of HDL protein changes. Bioinformatic analysis using the Ingenuity Systems Pathway Analysis software showing specific changes in the Lipid Metabolism neural network.