

**Table 1.** Clinical characteristics of all subjects according to Caveolin-1 rs3807992 genotypes

|                   | means±SD        |                 | <i>Pvalue*</i>    |
|-------------------|-----------------|-----------------|-------------------|
|                   | (GG)            | (AG/AA)         |                   |
| Age(year)         | 37.56± 9.49     | 35.75±8.78      | 0.05              |
| Height(cm)        | 161.30±6.08     | 160.96±5.58     | 0.58              |
| Weight(kg)        | 79.71±10.91     | 82.12±13.23     | 0.07              |
| BMI (kg/m2)       | 30.68±4.01      | 31.66±4.46      | <b>0.02</b>       |
| Physical Activity | 1215.46±2033.81 | 1199.02±2251.97 | 0.95              |
| WC(cm)            | 98.22±9.30      | 100.48±10.38    | <b>0.02</b>       |
| FBS(mg/dl)        | 87.98±9.62      | 86.95±9.75      | 0.36              |
| LDL-C (mg/dl)     | 98.80±22.66     | 91.27±25.07     | <b>0.006</b>      |
| HDL-C (mg/dl)     | 49.7±11.16      | 44.04±10.16     | <b>&lt;0.0001</b> |
| TC (mg/dl)        | 186.76±33.74    | 182.71±37.36    | 0.30              |
| TG(mg/dl)         | 113.11±51.20    | 133.31±84.14    | 0.13              |
| SBP (mmHg)        | 109.6±15.05     | 112.90±14.75    | 0.08              |
| DBP (mmHg)        | 75.87±10.77     | 79.31±10.06     | <b>0.01</b>       |

SD: Standard deviation; BMI: Body mass index; WC: Waist circumference; FBS: Fasting blood sugar; LDL: Low density lipoprotein; HDL: High density lipoprotein; TC: Total cholesterol; TG: Triglyceride; SBP: Systolic blood pressure; DBP: Diastolic blood pressure. Values are presented as mean ± SD. Comparisons between groups were determined based on independent-samples t test. Bold values indicate statistical significance (P < 0.05).

| Models            | SNP<br>Rs3807992 | Frequencies for the<br>Caveolin-1 SNP |           | Odds Ratio(95%CI) | <i>P</i>    |
|-------------------|------------------|---------------------------------------|-----------|-------------------|-------------|
|                   |                  | Control                               | MetS      |                   |             |
| <b>Codominant</b> | GG               | 94(55.2%)                             | 30(45.5%) |                   | 0.06        |
|                   | AG               | 31(18.4%)                             | 13(19.7%) | 2.04(0.79,5.26)   | 0.13        |
|                   | AA               | 41(24.7%)                             | 23(34.8%) | 2.52(1.11,5.70)   | <b>0.02</b> |
| <b>Dominant</b>   | GG               | 94(56.6%)                             | 30(45.5%) |                   |             |
|                   | AG/AA            | 72(43.4%)                             | 36(54.5)  | 2.31(1.16,4.61)   | <b>0.01</b> |
| <b>Recessive</b>  | AG/GG            | 125(75.3%)                            | 43(65.2%) |                   |             |
|                   | AA               | 41(24.7%)                             | 23(34.8%) | 2.04(0.97,4.31)   | 0.05        |

**Table 2.** Investigation of the Caveolin-1 polymorphisms and a comparison of genotype

Comparisons between groups were determined based on logistic regression analysis

**Table 3.** Dietary fat intakes of all subjects according to Cav-1 rs3807992 genotypes

| <b>Rs3807998</b>           | <b>Genotype (GG)<br/>means±SD</b> | <b>Genotype (AG/AA)<br/>means±SD</b> | <b><i>P</i>value*</b> | <b><i>P</i>value†</b> |
|----------------------------|-----------------------------------|--------------------------------------|-----------------------|-----------------------|
| <b>Energy (Kcal)</b>       | 2606.84±784.51                    | 2679.13±830.34                       | 0.387                 |                       |
| <b>Total Fat (gr)</b>      | 94.38±33.95                       | 96.11±34.59                          | 0.625                 | 0.47                  |
| <b>Protein (gr)</b>        | 91.09±30.68                       | 92.63±32.57                          | 0.637                 | 0.54                  |
| <b>Carbohydrate (gr)</b>   | 367.59±121.64                     | 380.70±128.47                        | 0.312                 | 0.32                  |
| <b>SFA (gr)</b>            | 28.84±12.27                       | 28.12±10.80                          | 0.544                 | <b>0.04</b>           |
| <b>Cholesterol(gr)</b>     | 273.82±119.27                     | 256.5±107.73                         | 0.14                  | <b>0.01</b>           |
| <b>Total fiber(gr)</b>     | 46.88±21.24                       | 48.52±21.72                          | 0.46                  | 0.7                   |
| <b>PUFA intake, %E</b>     | 6.45±2.73                         | 6.43±2.22                            | 0.9                   | 0.16                  |
| <b>MUFA intake, %E</b>     | 11.08±3.01                        | 10.84±2.63                           | 0.4                   | 0.07                  |
| <b>n-6 PUFA intake, %E</b> | 5.99±2.64                         | 5.95±2.13                            | 0.8                   | 0.14                  |
| <b>n-3 PUFA intake, %E</b> | 0.45±0.19                         | 0.47±0.2                             | 0.8                   | 0.56                  |

Values are represented as means ± SD.

Independent T test (*P* value\*) was performed to identify significant differences between Cav-1 rs380798 genotypes in crude model

ANCOVA (*P* value†) was performed to adjusted potential confounding factors (age, energy intake, educational level, DBP)

**Table 4.** Associations between Cav-1 rs3807992 and the risk of MetS and its components

| Components of MetS       | (AG/ AA) vs GG<br>OR (95%CI) | <i>P value</i> |
|--------------------------|------------------------------|----------------|
| <b>MetS</b>              | 2.31(1.16,4.61)              | <b>0.01</b>    |
| <b>Abdominal obesity</b> | 1.42(0.98,2.06)              | 0.06           |
| <b>BP</b>                | 7.03(1.43,34.44)             | <b>0.01</b>    |
| <b>Glucose</b>           | 0.7(0.27,1.78)               | 0.45           |
| <b>HDL-C</b>             | -1.4(1.02,1.93)              | <b>0.03</b>    |
| <b>TG</b>                | 2.12(1.13,3.95)              | <b>0.01</b>    |

MetS: metabolic syndrome, BMI: body mass index, BP: blood pressure, HDL: high density lipoprotein, TG: triglycerides. Binary logistic adjusted: Age OR (95% CI): odds ratio (95% confidence interval)

**Table 5.** Interactions between the Cav-1 rs3807992 gene polymorphism and SFA intake in relation to MetS or its components

|                | SFA ( $\geq 25$ g/d) *(AG/ AA) vs GG<br>(95 % CI) | <i>Pvalue</i> |
|----------------|---------------------------------------------------|---------------|
| <b>MetS</b>    | 5.60(1.14,27.40)                                  | <b>0.03**</b> |
| <b>DBP</b>     | 6.52(1.59,11.45)                                  | <b>0.01*</b>  |
| <b>HDL-C</b>   | -0.87(-6.32,4.58)                                 | 0.75*         |
| <b>LDL</b>     | 12.95(1.21,24.69)                                 | <b>0.03*</b>  |
| <b>LDL/HDL</b> | 0.28(-0.01,0.57)                                  | 0.05*         |
| <b>TG</b>      | 12.64(-17.89,43.19)                               | 0.41*         |
| <b>TC</b>      | 1.92(-15.98,19.83)                                | 0.83*         |

\*Generalized linear model Adjusted (age, energy intake)

\*\* Binary logistic Adjusted (age, energy intake, BMI, Smoking status, age at onset of obesity, total PUFA intake)

**Table 6.** Interactions between the Cav-1 rs3807992 gene polymorphism and PUFA intake in relation to MetS or its components

|                                            | <b>PUFA (<math>\geq 6\%</math> energy) *(AG/ AA) vs GG<br/>OR (95 % CI)</b> | <b>P value</b> |
|--------------------------------------------|-----------------------------------------------------------------------------|----------------|
| <b>MetS</b>                                | -0.207(0.04,0.95)                                                           | <b>0.04</b>    |
| <b>TG<br/><math>\geq 150</math> mg/dl</b>  | -0.207(0.05,0.8)                                                            | <b>0.02**</b>  |
| <b>FPG<br/><math>\geq 100</math> mg/dl</b> | -0.06(0.005,0.75)                                                           | <b>0.02**</b>  |
| <b>HOMA-IR<br/><math>\geq 2.7</math></b>   | -0.22(0.06,0.78)                                                            | <b>0.01**</b>  |

\*\* Binary logistic Adjusted (age, energy intake, BMI, smoking status, age at onset of obesity)