



()

*

Acrp30 Adipo Q apM1 GBP-28 :: _____

(=)

HDL **LDL** : _____
(=)

(/ ± /)
(BMI)

(/ ± /) : _____
LDL .(P< /)
HDL

: _____

// : // :

(.)
 (Ryan) ()
 () :)
) () TNF α
 ()
 () aPMI cDNA
 q
 .()

(BMI) .()

) AMPK
 (AMP
 .()

.()

3q27

mRNA

() .()

$^{\circ}$ C

() Biovondor

¹ Adipose most abundant Gene transcript

/

/

.()

(Mantzores)

(BMI)

LDL-C

) (P< /)

HDL

.(

.()

)

HDL

.(P< / r= /)

(

.()

LDL

HbA1c

(CRP)

HDL

(Matsubara)

LDL

) Lypotype

HDL

(BMI)

HDL

ApoB

(LDL

.()

()

.()

.()

(BMI)

(BMI)

.()

(BMI)

()

References:

1. Arita Y, Kihara S, Ouchi N, et al. Paradoxical decrease of an adipose-specific protein, adiponectin, in obesity. *Biochem Biophys Res Commun* 1999;257:79-83.
2. Maeda K, Okubo K, Shimomura I, Funahashi T, Matsuzawa Y, Matsubara K. cDNA cloning and expression of a novel adipose specific collagen-like factor, apM1 (AdiPose Most abundant Gene transcript 1). *Biochem Biophys Res Commun* 1996;221:286-9.
3. Saito K, Tobe T, Minoshima S, et al. Organization of the gene for gelatin-binding protein (GBP28). *Gene* 1999;229:67-73.
4. Berg AH, Combs TP, Du X, et al. The adipocyte-secreted protein Acrp30 enhances hepatic insulin action. *Nat Med* 2001;7:947-53.
5. Yamauchi T, Kamon J, Minokoshi Y, et al. Adiponectin stimulates glucose utilization and fatty-acid oxidation by activating AMP-activated protein kinase. *Nat Med* 2002;8:1288-95.
6. Tomas E, Tsao TS, Saha AK, et al. Enhanced muscle fat oxidation and glucose transport by ACRP30 globular domain: acetyl-CoA carboxylase inhibition and AMP-activated protein kinase activation. *Proceedings of the National Academy of Sciences of the United States of America*; Boston, 10 Dec 2002; 99: 16309-13.
7. Stefan N, Bunt JC, Salbe AD, et al. Plasma adiponectin concentration in children: relationships with obesity and insulinemia. *J Clin Endocrinol Metab* 2002; 87: 4652-6.
8. Vionnet N, Hani EH, Dupont S, et al. Genomewide search for type 2 diabetes-susceptibility genes in French whites: evidence for a novel susceptibility locus for early-onset diabetes on chromosome 3q27-qter and independent replication of a type 2-diabetes locus on chromosome 1q21-q24. *Am J Hum Genet* 2000;67:1470-80.
9. Hotta K, Funahashi T, Arita Y, et al. Plasma concentration of a novel, adipose-specific protein, adiponectin, in type 2 diabetes patients. *Arterioscler Thrombo Vasc Biol* 2000; 20: 1595-9.
10. Ryan AS, Berman DM, Nicklas BJ, et al. Plasma adiponectin and leptin levels, body composition, and glucose utilization in adult women with wide ranges of age and obesity. *Diabetes Care* 2003; 26: 2383-8.
11. Zurawska-Klis M, Drzewoski J. Inflammatory markers and adiponectin plasma level in patients with type 2 diabetes. *Pol Arch Med Wewn* 2005; 114: 652-7.
12. Spranger J, Kroke A, Mohlig M, et al. Adiponectin and protection against type 2 diabetes mellitus. *Lancet* 2003;361:226-8.
13. Friedewald WT, Levy RI, Fredrickson DS. Estimation of the concentration of low-density lipoprotein cholesterol in plasma, without use of the preparative ultracentrifuge. *Clin Chem* 1972;18:499-502.
14. Haque W, Shimomura I, Matsuzawa Y, et al. Serum adiponectin and leptin levels in patients with lipodystrophies. *J Clin Endocrinol Metab* 2002; 87: 2395-8.
15. Report of the Expert Committee on the Diagnosis and Classification of Diabetes Mellitus. *Diabetes Care* 1997;20:1183-97.
16. Ryan AS, Nicklas B, Berman DM, et al. The insertion/deletion polymorphism of the

- ACE gene is related to insulin sensitivity in overweight women. *Diabetes Care* 2001; 24:1646-52.
17. Comuzzie AG, Funahashi T, Sonnenberg G, et al. The genetic basis of plasma variation in adiponctin, a global endo phenotype for obesity and metabolic syndrome. *J Clin Endocrinol Metab* 2001; 86: 4321-5.
 18. Takahashi M, Arita Y, Yamagata K, et al. Genomic structure and mutations in adipose-specific gene, adiponectin. *Int J Obes* 2000; 24: 861-8.
 19. Schaffler A, Langmann T, Palitzsch KD, et al. Identification and characterization of the human adipocyte apM-1 promoter. *Biochim Biophys Acta* 1998;1399:187-97.
 20. Stumvoll M, Tschrirter O, Fritsche A, et al. Association of the T-G polymorphism in adiponectin (exon 2) with obesity and insulin sensitivity: interaction with family history of type 2 diabetes. *Diabetes* 2002;51:37-41.
 21. Yamauchi T, Kamon J, Waki H, et al. The fat derived hormone adiponectin reverses insulin resistance associated with both lipoatrophy and obesity. *Nat Med* 2001; 7: 941-6.
 22. Mantzoros C, Li T, Manson J, et al. Circulating adiponectin levels are associated with better glycemic control, more favorable lipid profile and reduced inflammation in women with type 2 diabetes. *J Clin Endocrinol Metab* 2005; 372: 1-22.
 23. Stefan N, Funaahshi T, Matsuzawa Y, et al. Plasma adiponectin concentration is associated with skeletal muscle insulin receptor tyrosine phosphorylation, and low plasma concentration precedes a decrease in whole-body insulin sensitivity in human. *Diabetes* 2002; 51: 1884-8.
 24. Matsubara M, Maruoka S, Katayose S. Decreased plasma adiponectin concentration in women with dyslipidemia. *J Clin Endocrinol Metab* 2002; 87: 2764-9.
 25. Stejskal D, Ruzicka V, Adamovska S, et al. Adiponectin concentration as a criterion of metabolic control in persons with type 2 diabetes mellitus? *Biomed Papers* 2003; 147: 167-72.