

# Molecular basis and development of novel diagnostic/therapeutic modalities for the metabolic syndrome based on adipocyte endocrinology and adiposcience

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## **【 Outline of survey 】**

The metabolic syndrome, a cluster of obesity (especially visceral fat obesity), diabetes, hypertension, dyslipidemia and fatty liver (steatosis), is a high risk for myocardial infarction and apoplexy. Prevalence of the metabolic syndrome is rapidly growing in Japan, along with drastic changes of life style such as overnutrition, excess in fat intake, motionless and stress

.From the standpoint of adipocyte endocrinology and adiposcience, we are approaching the molecular basis of metabolic syndrome.

In this project, we especially focus our attention on adipocyte function, and plan to perform translational medicine targeting leptin, a prototype of fat cell-derived hormone, and adiposteroid (glucocorticoid action in terms of adipocytokine regulation and adipocyte metabolism)

## **【 Expected results 】**

Despite the clinical importance including high prevalence rate and well-recognized risk for fatal cardiovascular event, molecular basis of the metabolic syndrome has not been fully elucidated. We have a firm belief that a line of approaches based on adipocyte endocrinology and adiposcience provide a novel insight into and understanding of molecular mechanism of the metabolic syndrome.

Through such an ambitious attempt, establishment of novel therapeutic and diagnostic modalities for the syndrome is strongly anticipated.

## **【 References by the principal researcher 】**

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H. Masuzaki, Y. Ogawa, N. Sagawa, K. Hosoda, T. Matsumoto, H. Mise, H. Nishimura, Y. Yoshimasa, I.Tanaka, T. Mori, and K. Nakao. Nonadipose tissue production of leptin: leptin as a novel placenta-derived hormone in humans. **Nat. Med.** 3: 1029-1033, 1997.

**【 Term of project 】** FY 2004 - 2008

**【 Budget allocation 】** 88,000,000 yen

**【 Homepage address 】** <http://www.kuhp.kyoto-u.ac.jp/med2/toppage.html>