**Inhibitory effects of high stability**

In recent decades, metabolic surgery for the remission of type II diabetes has become a suggestive option for obese patients, and high remission rate up to 80% after Roux-en-Y gastric bypass, biliopancreatic diversion and sleeve gastrectomy has been presented. The comprehensive weight management center in our afflicted hospital is focus on the treatment of obesity for the past 8 years. Near 2,000 patients underwent bariatric and metabolic surgery. Complete data was documented form the surgical patients, and biobank including serum and resected stomach were well preserved.

**Major Research Aims**

1. Highly advanced glycation end products on the ADSCs.
2. Different kinds of antioxidants on adipose cells culture. For example, the effects of I3C, DM and ICZ on adipogenesis and adipose angiogenesis by using both animal and cultured cell models. Role of AhR and Arnt in these processes.
3. Disease improvement, differences in body composition changes between genders and the life style modification

For the further study, we want to evaluate potential adjuvant therapy for metabolic diseases.

**Major achievements**

In our research, we not only focus on disease improvement and differences in body composition changes between genders, but also evaluate many human adipose cell models, including the adipose-derived stem cells (ADSCs). Adipose tissue will affect the change in hormones, cytokines and immune regulatory factors. Phytochemicals could change the adipogenesis and adipose angiogenesis pathway. For example, we have previously indicated that indole-3-carbinol (I3C), an indolic compound derived from cruciferous vegetable, possesses anti-obesity activities in animals. We have constructed the ADSCs culture for obese subjects on gene expression. ADSCs have the potential to differentiate into myocardial cells, cartilage and osteogenic cells, and more intensive clinical application potential. Based on these achievements, our research projects currently as following:

1. Highly advanced glycation end products on the ADSCs.
2. Different kinds of antioxidants on adipose cells culture. For example, the effects of I3C, DM and ICZ on adipogenesis and adipose angiogenesis by using both animal and cultured cell models. Role of AhR and Arnt in these processes.
3. Disease improvement, differences in body composition changes between genders and the life style modification

**Representative figures of major achievements**

**Major relevant publications**


