How **Korean Red Ginseng** has an impact on obesity indices by gene

Background

Theory

The effect of Korean red ginseng (KRG) on obesity:

Obesity is caused by the imbalance of energy metabolism. KRG or ginseng has been proven to be very effective for improving obesity and abnormal metabolism in animal studies and clinical studies. These effects of KRG and ginseng on the treatment of obesity can be thought to be greater in the obesity caused by reduced energy metabolism. This study examined the effects of KRG on obese women and aimed to confirm that the effects of KRG on obesity differ dependently on a gene.

Method

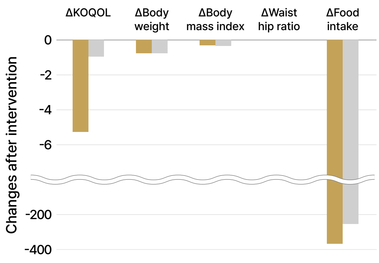
A randomized, double-blind, placebo-controlled, single center clinical trial:

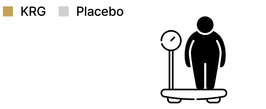
Fifty obese women were recruited and randomized to receive KRG 6g extract (500mg x 12 capsules, 3 times/day) (n=24) or placebo (n=26) for 8 wk. Measurements of blood pressure, height, weight, waist circumference, waist-hip ratio, total fat mass, percentage of body fat, resting metabolic rate, basal body temperature, and daily food intake, blood test, Korean version of obesity-related quality of life scale, and a gene examination were performed.

Outcome

With 50 obese women (24 taking KRG 6g extract, 26 taking placebo) for 8 weeks

Physical parameter





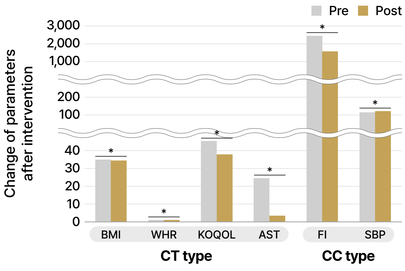
In the comparison between before and after the administration of KRG group, there were significant improvements of obesity in the items of body weight, BMI, WHR, daily FI and KOQOL.

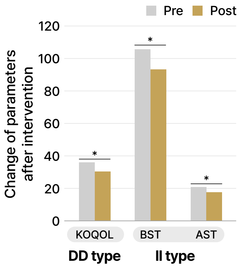
KOQOL (Korean obesity quality of life): Questionnaire concerning the oriental medical obesity pattern differentiation and the Korean-style questionnaire on the quality of life

The participants were divided into one with and without gene mutation: GNB3 (G protein beta 3), ADRB3 (beta 3 adrenergic receptor), ACE (angiotensin 1 converting enzyme)

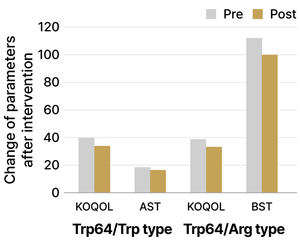
- GNB3: CC type and TT type (mutation); ADRB3: Trp64/Trp and Trp64/Arg type (mutation); ACE: ID and DD type (mutation)
- Genetic polymorphisms also play an important role as they can impact a population's susceptibility to becoming overweight or obese and developing related chronic complications, such as uncontrolled T2DM.

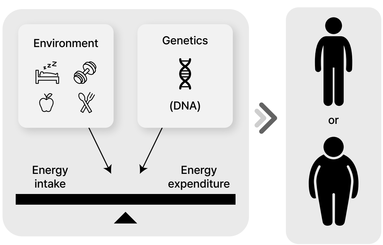
Obesity gene





* $p<0.05$, p-value derived from paired t-test between pre and post.





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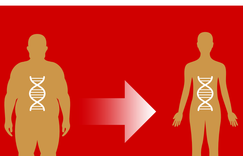
KRG displayed significant efficacy on BMI and KOQOL in the CT genotype of GNB3, but not in the CC genotype, on blood sugar test in the Trp64/Arg genotype of ADRB3, but not in Trp64/Trp genotype, on KOQOL in the DD genotype of ACE gene, but not in the ID and DD genotypes.



Impact

Effect of Korean Red Ginseng on obesity

KRG is more effective **for improving the secondary issues of the quality of life derived from obesity rather than having direct effects on the obesity-related anthropometric assessment and blood test indices.**

Conclusion

The benefit of Korean Red Ginseng on obesity and energy metabolism

This study tried to examine the differences of the effects of KRG **on the obesity indices by gene mutation.**

Source: Kwon DH et al. "Efficacy of Korean Red Ginseng by Single Nucleotide Polymorphism in Obese Women: Randomized, Double-blind, Placebo-controlled Trial" *J Ginseng Res.* 2012;36(2):176-189.