

**Title** EFFECTS OF ASPARAGUS RACEMOSUS ROOT  
EXTRACT ON BONE AND REPRODUCTIVE ORGANS  
IN OVARIECTOMIZED RATS

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#### ABSTRACT

Osteoporosis is a bone disease caused mainly by estrogen depletion after menopause. Supplements of hormones have been developed to treat osteoporosis but they are associated with undesired adverse effects. Therefore, many natural estrogens have been considered as an alternative treatment. *Asparagus racemosus* (AR) is well known for its phytoestrogenic properties in stimulating female rejuvenation. This study aimed to evaluate the protective effect of the AR root extract on bone loss in ovariectomized (OVX) rat. Adult female Wistar rats were divided into five groups; 1) sham operated control (SHAM), 2) OVX control, 3) OVX+AR100, 4) OVX+AR1000 and 5) OVX+EE. OVX resulted in bone loss as evident by decreased femoral length, thickness and weight. In AR treated rats, these femoral parameters were enhanced significantly. OVX rats treated with AR showed an osteopreventing effect as the levels of the bone turnover markers, such as  $\beta$ -crosslaps ( $\beta$ -CTx), N-terminal propeptides of type I procollagen (P<sub>1</sub>NP) and total alkaline phosphatase (ALP) were lower than OVX control rats. Histological examination of the bone in OVX rats revealed the loss of trabeculae and widening of intertrabecular spaces. AR root extract reversed these histological changes. The histomorphometrical results also confirmed the preventing effect of AR root extract. Furthermore, all dose treatment groups of AR root extract did not exert stimulatory effect on the uterus and mammary gland. The present study

suggested that AR root extract may be effective for prevention of bone loss in rats induced by ovariectomy without causing undesirable effects in reproductive organs.

