

Eur J Endocrinol. 2003 Oct;149(4):351-62.

Evidence for selective estrogen receptor modulator activity in a black cohosh (*Cimicifuga racemosa*) extract: comparison with estradiol-17beta.

Seidlova-Wuttke D, Hesse O, Jarry H, Christoffel V, Spengler B, Becker T, Wuttke W.

Department of Clinical and Experimental Endocrinology, University of Gottingen, Robert-Koch-Strasse 40, D-37075 Gottingen, Germany.

OBJECTIVE: Some phytoestrogens are believed to have selective estrogen receptor modulator (SERM) activity with no action in the uterus but beneficial effects in the hypothalamo/pituitary unit and in the bone and are presently the focus of clinical interest. In the present experiments, the effects of the clinically used *Cimicifuga racemosa* (CR) extract BNO 1055 in the uterus, in the bone and on serum luteinizing hormone (LH) were compared with the effects of estradiol-17beta (E(2)) under acute and chronic conditions in ovariectomized rats. **METHODS:** Ovariectomized rats were treated either acutely (6 h) or chronically (3 Months) with E(2) or the CR extract. Gene expression of some estrogen-regulated genes in the metaphysis of the tibia and the uterus was determined. Furthermore, bone mineral density was measured by quantitative computer tomography. **RESULTS:** When given acutely, both E(2) and the CR extract inhibited LH secretion and slightly stimulated gene expression of IGF-I, collagen-1alpha1, osteoprotegerin and osteocalcin (all osteoblast products), and of tartrate-resistant acid phosphatase (TRAP, an osteoclast product) in the metaphysis of the femur. While E(2) stimulated uterine weight and expression of progesterone receptor (PR), the complement protein (C3) and IGF-I genes, and inhibited gene expression of the estrogen receptor beta (ERbeta) in the uterus, no such effect was observed under acute CR treatment. After chronic application with pelleted food over 3 Months E(2) had profound effects in the uterus on weight and gene expression (ERbeta, PR, C3 and IGF-I) which were not seen in the CR-treated animals. Within 3 Months after ovariectomy, control rats had lost more than 50% of the metaphyseal bone mass of the tibia, an effect prevented by E(2) and partially by CR supplementation. **CONCLUSIONS:** These data confirm the concept that the CR extract BNO 1055 contains as yet unidentified substances with SERM properties which act in the hypothalamo/pituitary unit and in the bone but not in the uterus.

PMID: 14514351 [PubMed - indexed for MEDLINE]