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P308. Cimicifuga racemosa dry extract (BNO 1055) as active component of Klimadynon® improves sleep quality through GABAA-ergic activity

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BNO 1055 is a well characterized dry extract from Cimicifuga (syn. Actaea) racemosa (CR, black cohosh) and active component of Klimadynon®, which proved to be an effective phytotherapeutic agent for the treatment of climacteric complaints. Besides hot flushes, menopausal women often suffer from sleep disturbances, leading to significantly impaired quality of life.

Thus we analyzed BNO 1055, for its sleep modulating activity using a pentobarbital-induced sleep animal model. Male Swiss CD1 mice were treated orally with 1, 10 or 100 mg/kg BNO 1055 extract for 7 consecutive days before intraperitoneal injection of 45 mg/kg pentobarbital immediately before testing. Muscimol (0.4 mg/kg, i.p.) served as reference substance. To verify the proposed molecular target we analyzed the binding affinity to the GABAA1 receptor using competitive radioligand binding assays.

BNO 1055 dry extract induced prolongation of pentobarbital-induced sleep duration at 10 mg/kg, reaching statistical significance at 100 mg/kg. Latency to sleep was numerically reduced as well. Earlier studies suggested an agonistic effect of CR towards GABAA receptors, which are well known for their sedative and sleep modulating effects. Analysis of the binding to the GABAA1 receptor as potential molecular target demonstrated efficient binding in vitro with an IC50 value of 27.1 µg/ml.

In summary we showed that the CR extract BNO 1055, as contained in Klimadynon®, increased the sleep duration in vivo. We propose that the interaction with the GABAA1 receptor, as molecular mode of action, may account for the sleep improving effect. Thus, we conclude that Klimadynon® is well suited not only for the treatment of vasomotor symptoms but also to improve sleeping quality via the activation of the GABAA-ergic system.

[1] Bionorica SE, Neumarkt, [2] Bionorica SE, Neumarkt