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The endocrine, behavioral and autonomic actions of neuropeptide SF

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Neuropeptide SF (NPSF) is a mammalian amidated neuropeptide, which is highly concentrated in the hypothalamus. Concerning its physiological function, to date, only its role in pain modulation and appetite were investigated, thus the present experiments focused on measuring the effect of NPSF on the hypothalamus-pituitary-adrenal (HPA) axis, behavior and autonomic function. The peptide was administered in different doses (0.25, 0.5, 1, 2, 5 μg) intracerebroventricularly to adult male rats, the behavior of which were then observed by means of telemetry, open field (OF) and elevated plus maze (EPM) tests. Plasma concentrations of ACTH and corticosterone were measured to determine NPSF's influence on the HPA system. Effect on core temperature was also measured via telemetry. To establish the mediation of the HPA response, animals were pretreated with the corticotrophin-releasing factor (CRF) receptor antagonist α-helical CRF(9-41) (1 μg). Our results showed that NPSF triggered both ACTH and corticosterone secretion, however α-helical CRF(9-41) failed to inhibit these actions of NPSF. Spontaneous locomotor activity and the core temperature were elevated, however, the exploratory and stereotyped behavior in the OF experiment and the EPM test was not altered significantly by NPSF. These results demonstrate, that NPSF stimulates the HPA axis, although CRH mediation alone may not be responsible for its action. It would seem that NPSF has a hyperthermic effect and also induces locomotor activity.