

Meeting abstract

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## Restricted expression between parvalbumin and substance P receptor NK<sub>1</sub> in interneurons of the lateral amygdala

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Increasing evidence suggests that substance P (SP) and its receptor, namely the neurokinin 1 receptor (NK<sub>1</sub>-R), play an important role in the modulation of stress-related, affective and/or anxious behaviours. Both SP and NK<sub>1</sub>-R are expressed in brain regions critically involved in stress, fear and affective responses such as the amygdala, hippocampus and frontal cortex. In this study we aimed at identifying the types of NK<sub>1</sub>-R immunoreactive neurones in the basolateral complex of the amygdala according to their content of other neurochemical markers by dual or triple labelling immunofluorescence. The basolateral amygdaloid complex consists of the lateral (LA) and basolateral (BL) nuclei, which are believed to be cytoarchitectonically similar. Our study reveals that in the rat LA, 38.7 ± 6.7% of NK<sub>1</sub>-R immunopositive interneurons (124/331) co-express the calcium binding protein parvalbumin (PV), representing 15.2 ± 3.4% (124/820) of PV<sup>+</sup> neurones. Conversely, in the BL no coexistence between NK<sub>1</sub>-R (293 neurones counted) and parvalbumin (2385 neurones counted) expressing interneurons was detected. These results suggest that interneurons in the LA and BL differentially express molecules involved in cell signalling and indicate a distinct organization in local interneurons. The BL resemble the hippocampal region CA1, in which NK<sub>1</sub>-R-expressing neurones do not coexist with PV[1].

distinct termination patterns in the hippocampus. *J Comp Neurol* 1997, **378**:320-336.

### References

1. Acsády L, Katona I, Gulyás AI, Shigemoto R, Freund TF: **Immunostaining for substance P receptor labels GABAergic cells with**