

## Abstract

Chemical communication is the most important way of communication in the house mouse. Traditionally, the urine of the house mouse was the most studied source of signals. Typical way of scent marking, relatively simple way of collection and analysis was the main reason. The analysis of physical interaction of two mouse conspecifics has shown that there are several other very important sources of chemical signals. My ethological analysis has revealed that during the first interaction of two individuals of opposite sex, the most investigated body part is the orofacial region, and that the oral contact with salivary exchange is very frequent. At the same time, the results of this research have demonstrated the significant influence of reproductive status on behavioural patterns in individuals of both sex. One of these important sources of chemical signals is the saliva. During the interaction between two individuals, saliva is actively investigated by sniffing and physically exchanged. Gas chromatography and mass spectrometry (GC-MS) was used for chemical analysis of saliva. It has revealed that saliva is a sexually dimorphic signal, which may represent individual odour profiles. Uniqueness of this odour is not based on the presence of special substances typical just for one sex, unique is the blend, the mixture of the substances. This work may serve to provide the basis for further research on chemical signals and their importance in social communication of the house mouse.

**Key words:** *Mus musculus*, chemical communication, social behaviour, oestrous cycle, gas chromatography, GS-MS