

# Analytical characterization of body odour constituents in the songbird *Taeniopygia guttata*

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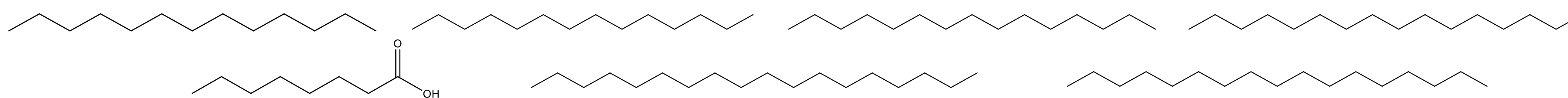
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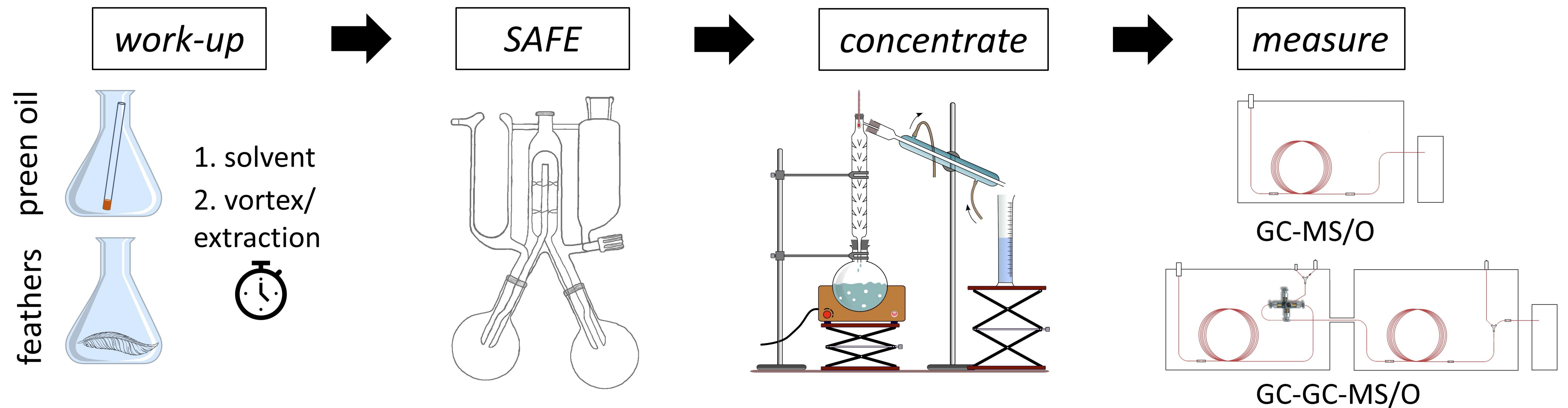
**Introduction:** Birds use olfactory cues in various social and non-social contexts. In the zebra finch volatile substances contribute to the discrimination of kin and non-kin, of own and conspecific eggs, to nest preferences and to the typical begging behaviour of chicks.<sup>1</sup> So far, in zebra finch preen oil 7 volatile compounds have been identified.<sup>2</sup> Due to the latest findings in behavioural ecology, a more detailed identification of the volatilome of zebra finches seems necessary.



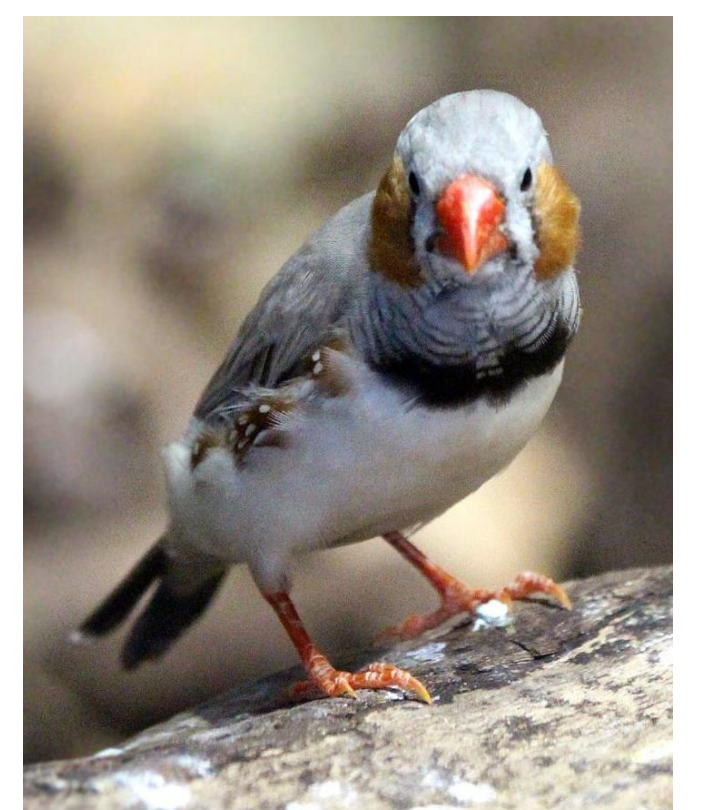
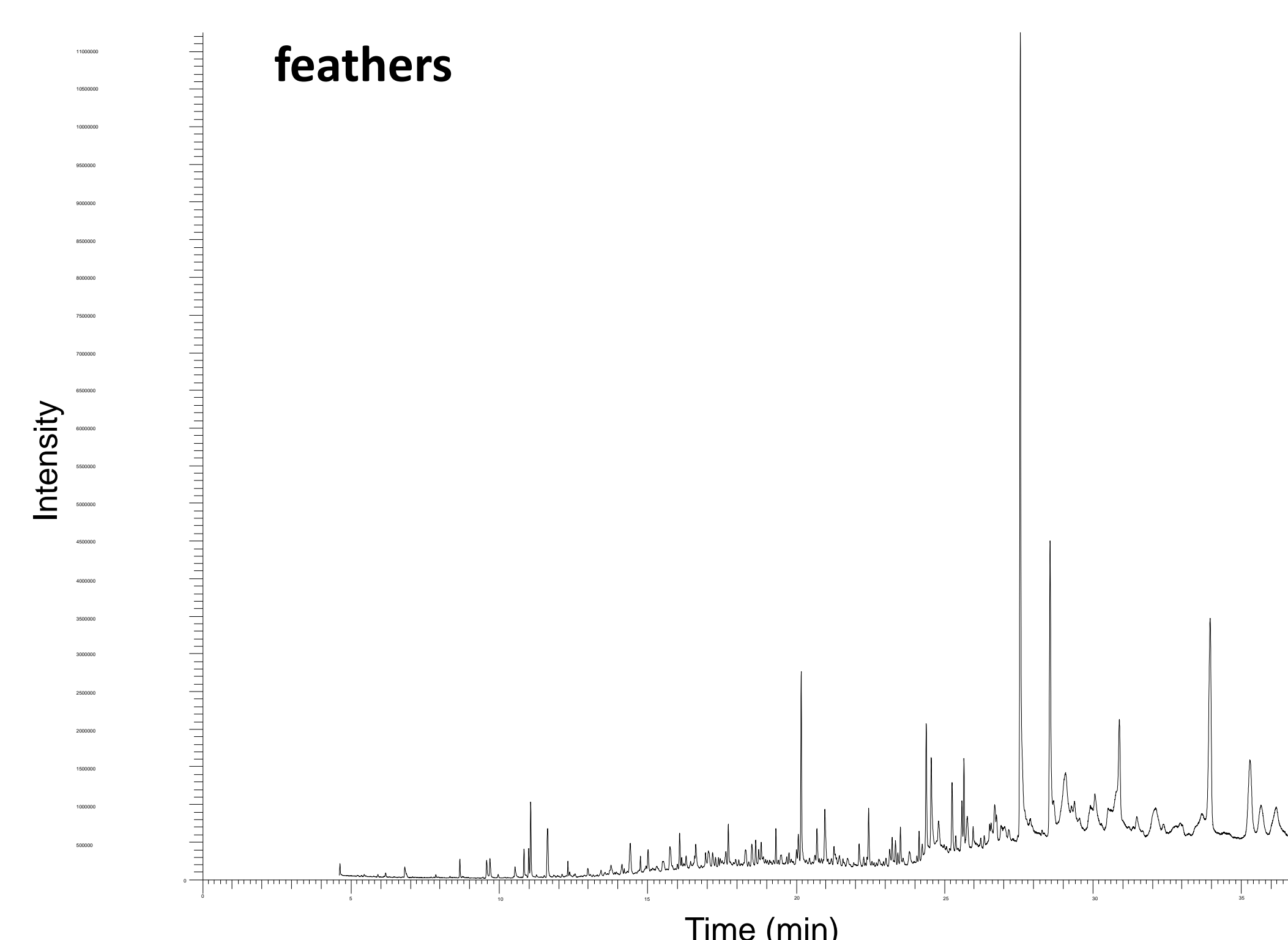
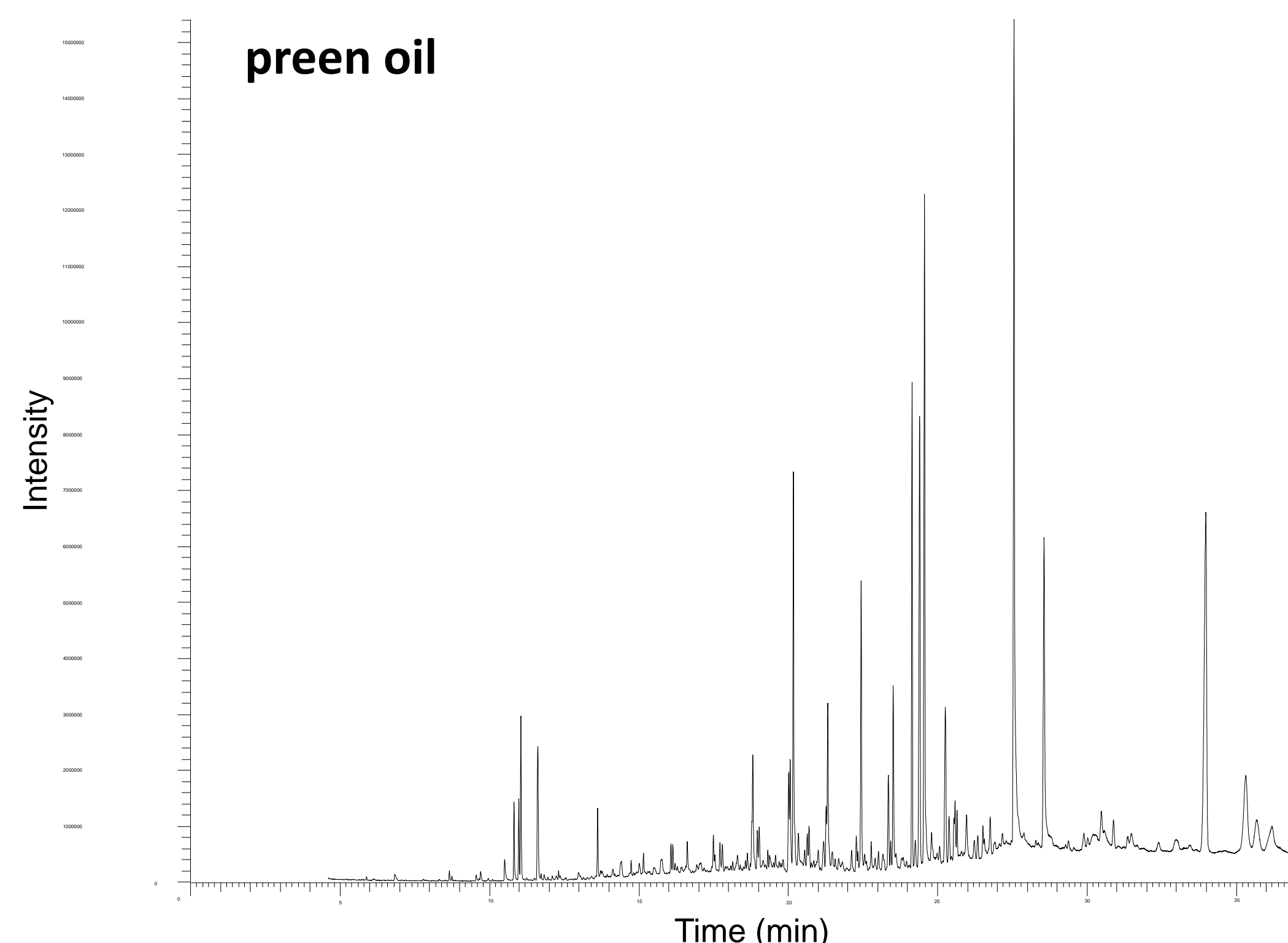
So far identified compounds in zebra finch preen oil<sup>2</sup>



## Method:



**Results:** Applying our newly established methods, we were able to identify 51 odour-active and/or volatile compounds with GC-MS/O and/or GC-GC-MS/O. The main identified substance classes were alcohols, aldehydes, alkanes, carboxylic acids, ketones and esters.



**Conclusion:** Our newly established method seems to be a promising approach to link behavioural ecology and chemical analysis to identify substances releasing a behavioural response.

## References:

<sup>1</sup>Krause, E. T., Bischof, H. J., Engel, K., Goluke, S., Maraci, O., Mayer, U., . . . Caspers, B. A. (2018). Olfaction in the Zebra Finch (*Taeniopygia guttata*): What Is Known and Further Perspectives. *Advances in the Study of Behavior*, Vol 50, 50, 37-85. doi:10.1016/bs.asb.2017.11.001

<sup>2</sup>Zhang, J.-X., Sun, L., & Zuo, M.-X. (2009). Uropygial gland volatiles may code for olfactory information about sex, individual, and species in Bengalese finches *Lonchura striata*. *Current Zoology*, 55(5), 357-365. doi:10.1093/czoolo/55.5.357

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