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**Attractive host odours for mosquitoes: the blend ratio makes the difference**

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Mosquito species differ with respect to their host preferences, and some discern not only different species of vertebrate hosts but also different individuals of a given species. Olfactory cues derived from the hosts determine to a large extent the host choice, and it is an intriguing question how these insects accomplish the necessary fine odour discrimination. Emanations from vertebrate hosts consist of complex blends. Attention has focused on the identification of kairomones that guide mosquitoes to their hosts. Here we show that odour blends rather than their single constituents attract the anthropophilic yellow fever mosquito *Aedes aegypti* (L.). Highly attractive blends consist of L-(+)-lactic acid, ammonia, and distinct fatty acids which were essential to maximise the attractiveness of the blend. The mosquitoes' responses, however, depended markedly on the ratio of these compounds. In a direct competition bioassay a distinct blend ratio turned out to be as attractive as an average human hand. When added to natural human skin emanations some compounds also altered significantly the attractiveness of the host. The data show that the blend ratio of a few distinct compounds is crucial for the attraction of mosquitoes to human hosts.