

Antennal movement responses of male *Glossina morsitans morsitans* Westwood to twelve analogues of the tsetse olfactory attractant 1-octen-3-ol were investigated to determine their structure-activity relationships. The results indicate that the chemoreceptors which perceive this set of kairomones may not be highly specific. Activity is dependent on the length of the alkyl chain; also homologues with odd alkyl chains such as 3-buten-2-ol, 1-hexen-3-ol and 1-octen-3-ol evoked higher antennal responses than homologues with even alkyl chains such as 1-nonen-3-ol, 1-hepten-3-ol and 1-penten-3-ol. Comparison of the activities of eight carbon structural variants of 1-octen-3-ol showed that the structural requirements for activity of the functional end of the molecule may not be rigid; thus, 1-octyn-3-ol elicited relatively high responses. However, low responses to 1-octene and 3-octanol showed that both the π electron system as well as the oxygen function are important for activity. Laboratory bioassay findings indicate that compounds such as 1-octyn-3-ol, 3-buten-2-ol, allyl alcohol and 1-octen-3-one which evoke antennal responses 2–3 times greater than the control have attractive properties and preliminary field investigations show that 3-buten-2-ol and allyl alcohol significantly increase trap catches.