



# Re: The Search for Human Pheromones: The Lost Decades and the Necessity of Returning to First Principles

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## EDITORIAL COMMENT

Pheromones are chemical signals that have evolved for communication with other members of the same species. We do not know yet if humans have pheromones. Over the last 45 years, some scientists have claimed that a number of molecules are human pheromones, but these claims have little scientific validity. The first chemical identification of a pheromone, the silk moth's female sex pheromone (bombykol), achieved by the German chemist Adolf Butenandt and after this finding, four steroid molecules have been described as human pheromones: androstenone, androstenol, androstadienone and estratetraenol. The possibility of human pheromones has been downplayed in part because in the past, it has been assumed erroneously that we have a poor sense of smell. Humans have a "main olfactory system" but they do not have a functional vomeronasal organ (or "second nose"; Jacobson's organ, is an auxiliary olfactory sense organ that is found in many animals. It lies close to the vomer and nasal bones).

In the near future, researches will be focused on identification and synthesis of these bioactive molecule(s), followed by bioassay techniques, again. Especially, comparison of secretions from adult and pre-pubertal humans may highlight potential molecules involved in sexual behaviour. Further search will benefit from the techniques developed by olfactory researchers including those who have worked on the steroids previously.

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