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(中)	
關鍵字 (英)	Synthetic Peptide
摘要 (中)	<p>哺乳類動物皆具有嗅覺器官可以辨別出各種不同的氣味分子，當鼻腔上皮組織中的嗅覺受體 (olfactory receptor) 被氣味分子活化後，會促使 cAMP 的形成，進而開啟離子通道，並將嗅覺訊號傳遞至大腦。而嗅覺受體基因已經被選殖出，並且辨認出嗅覺受體蛋白的胺基酸序列。根據文獻資料顯示氣味分子與嗅覺受體蛋白的結合，可能主要與嗅覺受體蛋白的細胞外環狀結構 (extracellular loop) 及細胞膜通道區域 (transmembrane domain) 之特定胺基酸序列片段有關。本研究利用固相肽合成法，製備具有特定受體蛋白的胺基酸序列之合成肽，進而將特定胺基酸序列片段聯結於壓電晶體訊號轉換元件 (piezoelectric transducer) 所製成的生物晶片上。探討仿嗅覺分子的合成肽對氣體分子親和力的選擇性。此研究結果可提供具有特異性、選擇性辨認功能的仿嗅覺分子合成肽，應用於氣味分子檢測工具的開發，亦可應用於醫藥、食品、環保、農藥、化妝品的樣品檢測。</p>
摘要 (英)	<p>The mammalian olfactory organs can distinguish different kind of odorant molecules. When olfactory receptor in the nasal epithelium is activated by odorant molecules can stimulate the formation of cAMP, then open ion channels, and transmit olfactory signals to the brain. The olfactory receptor gene has already been cloned, and the amino acid sequence of the olfactory receptor has been recognized. The literature suggested that the odorant binding domain in olfactory receptors might be related to the specific amino acid sequence of the extracellular loop and transmembrane domain. In this study, a series of synthetic peptides with specific amino acid sequence of olfactory receptor are prepared with the solid phase peptide synthesis method. The synthetic peptides are coated onto the surface of a piezoelectric electrode (PE). The PE biochip serves as a signal transducer to determine the binding affinity of synthetic peptides and odorants. The result of these studies can determine the binding specificity and selectivity of synthetic peptides with odorants. The result can use for further development of biochips for odorant sensing tools in medicine, food, environmental, pesticide and cosmetic.</p>
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