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## Taste for fat-The 6th taste modality: Implications in obesity

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It has been well propounded that there exists five basic taste modalities, e.g., sweet, sour, bitter, salty and umami. Recent compelling evidence from rodent and human studies raise the possibility for an additional sixth taste modality devoted to the perception of lipids. A number of studies have recently suggested that lingual CD36, a glycoprotein, mainly expressed by circumvallate papillae of the tongue, might be implicated in the perception of dietary fat taste. Recent studies have not only supported the existence of the 6th taste modality, destined for the perception of fat, but also explored the intracellular signalling mechanisms, involved in this phenomenon. It has been shown that lingual CD36, after activation by free fatty acids, induces increases in free intracellular calcium concentrations, ( $[Ca^{2+}]_i$ ), phosphorylation of protein-tyrosine kinase (PTK) and release of the neurotransmitters like serotonin and nor-adrenaline into synaptic clefts. This signalling cascade is likely responsible for physiologic responses, induced by the detection of lipids in the oral cavity. The lipid-mediated regulation of feeding behaviour which is very critical in the development of several diseases like obesity and other metabolic disorders. Our studies show that fat taste signaling is altered in obese animals and there is a polymorphism of CD36 in obese subjects.

### Biography

Naim A Khan obtained his PhD degree in India and worked at AIIMS (New Delhi) as Asst. Research Officer. Later on, he did his post-doc at National Institute of Neurology (Mexico) and settled in France since 1988. He Worked as Asst. Prof. in Rennes and then Associate Prof. in Limoges and finally as Full Professor in Dijon. He has been the Head of Immunology, Physiology and Neurosciences department. He has been the Director of a research team EA4183 on Lipid and Cell Signaling for 5 years. The main theme of his research is to elucidate the role of dietary fatty acids in taste bud cell activation which might be involved in the pathology of several diseases like diabetes and obesity. He is studying the interaction of these fatty acids with the second messenger cascade/cell signalling (MAP kinases, calcium signalling, protein kinases C & diacylglycerol). At present, his investigations are oriented to show that there is a 6th taste modality destined for "a fat taste".

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