
Abstract:

This review contains background information on the serotonin system, furthermore the suggestion to introduce the term Contemporary Witness Report (CWR) for a novel type of review and, as the main part, an overview over the history of serotonin discovery as a basis for the identification of its receptor heterogeneity and the increase in complexity by genetic and allosteric variation.

The present article conforms to CWRs in historical and autobiographical elements, in more emphasis on the author's work than in conventional reviews and in aspects neglected in previous reviews, but not in the main feature namely the work of a scientist with comprehensive expertise in a field in which, over long time, he/she continuously performed research and published. A scientist complying with these requirements is a contemporary witness in that field. His report on the scientific achievements in that period, a CWR, comprises confirmation and putative re-interpretation of data from a superior viewpoint.

Identification of serotonin's vascular properties (publication year: 1912) as an "adrenaline mimicking substance" (without attempt to isolate it) by O'Connor preceded the discovery of serotonin in the gastrointestinal tract by Erspamer [1937] and in blood by Rapport [1948, 1949], who identified its structure as 5-hydroxytryptamine [1949]. Detection as a neurotransmitter in invertebrates suggested its occurrence in vertebrate CNS as well. This was verified by finding it in dog, rat and rabbit brain [1953]. The Falck-Hillarp technique [1962] visualized serotonin neurones as fluorescent structures. The neurotoxin 5,7-dihydroxytryptamine [1972] indirectly proved the involvement of 5-HT in multiple CNS functions.

Key words:

serotonin discovery, serotonin receptors, novel type of review, Contemporary Witness Report, Vittorio Erspamer, Maurice Rapport, serotonin neurotoxins, 5,7-dihydroxytryptamine
