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## HOW EFFECTIVE IS OUR “UNIVERSAL” RECEPTOR SYSTEM?

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### ABSTRACT

*To what extent does the receptor mechanism reflect the pluripotent hormonal and mediator functions of secretory cells in vertebrate mammals? Even an analysis of relatively few, but quite informative literature sources indicates that existing concepts and hypotheses regarding receptor mechanisms require substantial correction.*

*In this context, the authors consider it appropriate to discuss several fundamental conceptual issues concerning future approaches to studying the functional activity of the receptor system in target cells throughout the organs and systems of our body.*

*In our body, the hormone-mediator functions of specialized target cells are likely not carried out by the specific binding of a single hormone and/or mediator to one receptor, but rather by the synchronous activity of several endogenous ligands acting on a single secretory cell. The existence of hybrid receptors in the human body supports the hypothesis that we have put forward. It is possible that the binding of one endogenous ligand may potentiate the entry of another ligand, which may already be recognized on the inner surface of the cell membrane and/or on the surface of the endoplasmic reticulum of the same target cell. Unfortunately, there is still no clear answer to this hypothesis. Is the synchronous activity within a single target cell ensured by strictly determined, evolutionarily conserved hormones and mediators, or does it follow a principle of selective “assembly” of multiple ligands?*

*Finally, the third important question: In cases where two or more ligands bind simultaneously to a single target cell, is the specific functional activity of each of them preserved, especially when these ligands are similar in their structural and functional characteristics?*

*It is also possible that under such conditions, many endogenous ligands acting simultaneously may have novel mediator and hormonal effects on the same target cell.*

*Unfortunately, our considerations have not been discussed by leading scientists studying receptor-mediated mechanisms in the human body.*

*Therefore, previously established theories, paradigms, and concepts concerning the formation and functioning of the receptor system of living cells require careful re-examination and, possibly, revision in light of the recommendations presented in this study.*

**KEYWORDS:** receptor system, secretory cells, hybrid receptors, ligands, own interpretation

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