Towards more implications of biochemistry in neuroscience

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Editorial

Neuroscience is among the most important modern sciences and that includes a variety of fields such as cognitive neuroscience[1,2] and educational neuroscience.[3] The main focus of neuroscience is the physiology and the pathology of the nervous system at molecular, cellular and organizational levels

The nervous system represents a network within which a huge amount of signals are transmitted via neurons thorough a variety of neurotransmitters[4,5] and gap junctions. Many phenomena related to the nervous system remain unexplained[6] and among those explained, the explanations are still theories yet to become facts. May be it is necessary to go beyond the neurotransmitters mechanisms, cognition and psychology; and further investigate the "non-neurological" aspects of the nervous system to further understand the panoramic image of this mysterious yet amazing system.

Indeed, biochemistry, as a science that defines the chemistry of life, provides key features to elucidate the functions of enzymes, biomolecules, and ions. These elements play important role in the physiology and the biology of the nervous system and the neurons; including energy transfer, neurotransmitters synthesis and degradation, cell death and membranes potential. In addition biochemistry can explain the effects chemical can have on neurons too.[7] Importantly, biochemistry also describes metabotropic receptors of the nervous system, such as the G protein coupled receptors,[8] that play important roles in both neurophysiology[9] and neuropharmacology.[10] Furthermore, biochemistry governs biological events related to field such as genetic (gene expression) and proteomics that are closely related to the well-functioning of the nervous system as well.

Such concepts, if put within the adequate context, would surely strengthen our knowledge about neuroscience and provide fruitful details to understand neurological functioning, develop therapies (based on both biochemistry and pharmacology[11-13]), build animal models of neurological disease[14,15] such as Alzheimer's disease[16,18] and Parkinson disease.[19]

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Conflicts of interest

None.

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