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Sommario/riassunto	Virtually involved in all pathologies that present an inflammatory component, it is now evident that, in the central nervous system, chemokines and chemokine receptors possess pleiotropic properties beyond chemotaxis: costitutive brain expression of chemokines and their receptors on endothelial cells, but also on neurons and glia, suggests a role for such molecules in mediating homeostatic cross-talk between cells of the brain perenchyma. Cross-talk between neurons and glia is determinant to the establishment and maintenance of a brain environment that ensure normal function, and in particular glial cells are active players that respond to environmental changes and act for the survival, growth, differentiation and repair of the nervous tissue: in this regard brain endogenous chemokines represent key molecules that play a role in brain development, neurogenesis, neurotransmission and neuroprotection. As important regulators of peripheral immune response, chemokines are molecules of the immune system that play a central role in coordinating communication between the nervous and the immune systems, in the context of infections and brain injury. Indeed, in phatological processes resulting from infections, brain trauma, ischemia and chronic neurodegenerative diseases, chemokines represent important neuroinflammatory mediators that drive leucocytes trafficking into the central nervous system, facilitating an immune response by targeting cells of the innate and adaptive immune system.

The third edition of the international conference "Chemokines and Chemokine Receptors in the Nervous System", hold in Rome in October 2013, represented an exciting platform to promote discussion among researchers in different disciplines to understand the role of chemokines in brain homoestasis. This Frontiers Research Topic arises from this conference, and wants to be an opportunity to further discuss and highlight the importance of brain chemokines as key molecules that, not only grant the interplay between the immune and the nervous systems, but in addition drive modulatory functions on brain homeoastasis orchestrating neurons, microglia, and astrocytes communication.