

Documents

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Transmembrane (TMEM) protein family members: Poorly characterized even if essential for the metastatic process

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Abstract

The majority of cancer-associated deaths are related to secondary tumor formation. This multistep process involves the migration of cancer cells to anatomically distant organs. Metastasis formation relies on cancer cell dissemination and survival in the circulatory system, as well as adaptation to the new tissue notably through genetic and/or epigenetic alterations. A large number of proteins are clearly identified to play a role in the metastatic process but the structures and modes of action of these proteins are essentially unknown or poorly described. In this review, we detail the involvement of members of the transmembrane (TMEM) protein family in the formation of metastases or in the mechanisms leading to cancer cell dissemination such as migration and extra-cellular matrix remodelling. While the phenotype associated with TMEM over or down-expression is clear, the mechanisms by which these proteins allow cancer cell spreading remain, for most of them, unclear. In parallel, the 3D structures of these proteins are presented. Moreover, we proposed that TMEM proteins could be used as prognostic markers in different types of cancers and could represent potential targets for cancer treatment. A better understanding of this heterogeneous family of poorly characterized proteins thus opens perspectives for better cancer patient care. © 2019 Elsevier Ltd

Index Keywords

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