Seminar series TRR 305 – Striking a moving target: From mechanisms of metastatic organ colonisation to novel systemic therapies

Wednesday, 22 December 2021
17.00 h
Online Zoom

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A tissue-specific mechanism of disseminated tumor cell dormancy regulation in brain

Although dormancy is thought to play a key role in the metastasis of breast tumor cells to the brain, our knowledge of the molecular mechanisms regulating disseminated tumour cell (DTC) dormancy in this organ is limited. Here, using serial intravital imaging of dormant and metastatic triple-negative breast cancer lines, we identify escape from the single-cell or micro-metastatic state as the rate limiting step towards brain metastasis. We show that every DTC occupies a vascular niche, with quiescent DTCs residing on astrocyte endfeet. At these sites, astrocyte-deposited laminin-211 drives DTC quiescence by inducing the dystroglycan receptor to associate with yes-associated protein (YAP), thereby sequestering it from the nucleus and preventing its pro-metastatic functions. These findings identify a brain-specific mechanism of DTC dormancy and highlight the need for a more thorough understanding of tumor dormancy to develop therapeutic approaches that prevent brain metastasis.

Zoom-Meeting-Link

https://uni-regensburg.zoom.us/j/65996940288?pwd=WmJ4aGJETmpEWDhqdGplc0duUHVDUT09

Meeting-ID: 659 9694 0288
Kenncode: 431643

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