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Deconstructing the Desmoid Tumour Matrisome

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Desmoid tumours are characterised by an unpredictable and variable natural history with periods of tumour growth, stable disease and even spontaneous regression. In contrast to the tumour cell compartment, the biology of the tumour microenvironment in desmoid tumours, specifically the microenvironmental component comprising the extracellular matrix and associated proteins (collectively known as the matrisome), remains largely unknown. Notably, the matrisome has been shown in other cancer types to be a rich source of therapeutic targets and prognostic biomarkers. This talk will focus our studies to employ comprehensive proteomics to characterise, in unprecedented detail, the desmoid tumour matrisome in clinical specimens from both aggressive and indolent forms of the disease. We show that desmoid tumours have a distinct matrisomal profile compared to other sarcoma subtypes. I will also discuss some early data of a subset of matrisomal proteins which are enriched in tumours that follow an aggressive course of disease. We anticipate that this research will deepen our biological understanding of the role of the tumour microenvironment in desmoid tumours as well as contribute to the discovery of matrix-based biomarkers for improved clinical management of these patients.