

HomoGel: A New Natural Human Tissue-Derived Extracellular Matrix (ECM) for Advancing Pre-Clinical Research in Life Sciences

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Background & Objective

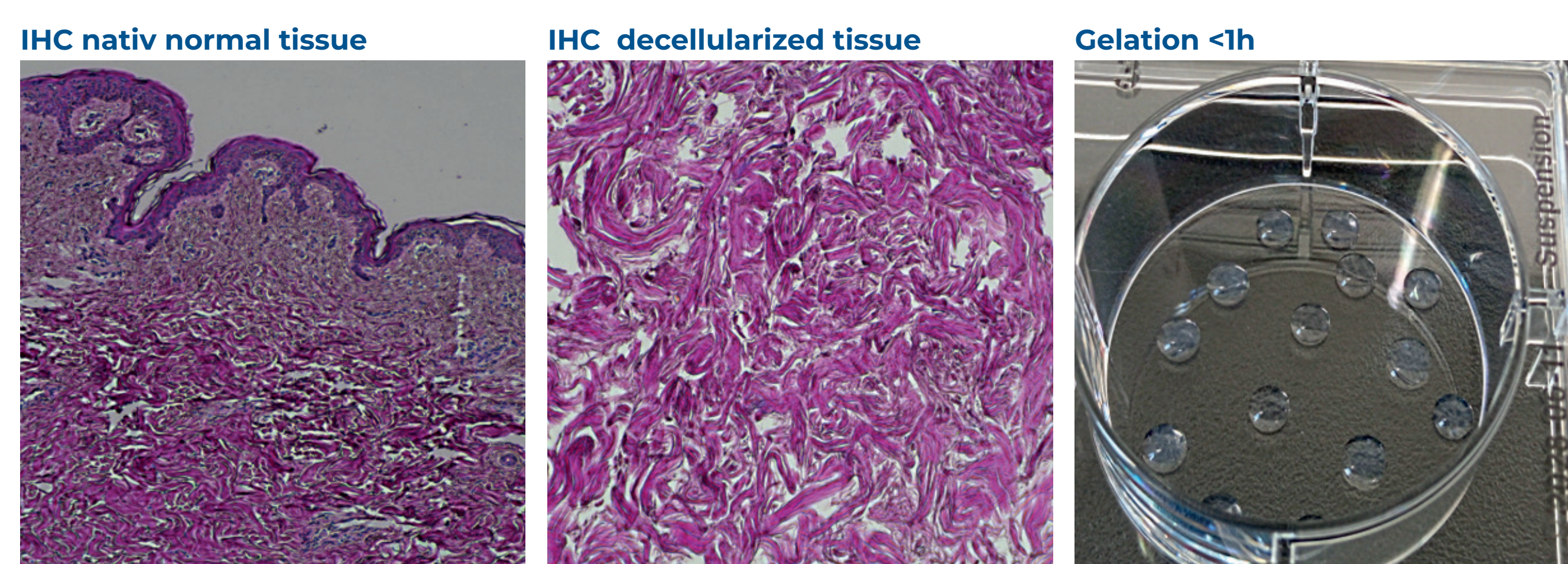
The extracellular matrix (ECM) is a complex network of proteins and polysaccharides crucial for tissue structure and function. Such ECMs hold promise to enhance pre-clinical research in oncology and regenerative medicine. This research aims to develop a novel natural human tissue-derived ECM: We hypothesize that this BIOMEX-ECM will offer a more physiologically relevant micro-environment for studying tumor progression, metastasis, and tissue repair processes.

Methods

HomoGel was derived from 3 different human tissues, donated following ethical guidelines. Decellularization processes were optimized to retain the biochemical and structural properties of the native ECM. The resultant ECM was characterized using histological and biochemical assays. Its application was tested in 3D cell culture models of tumor cells and coated cell culture plates.

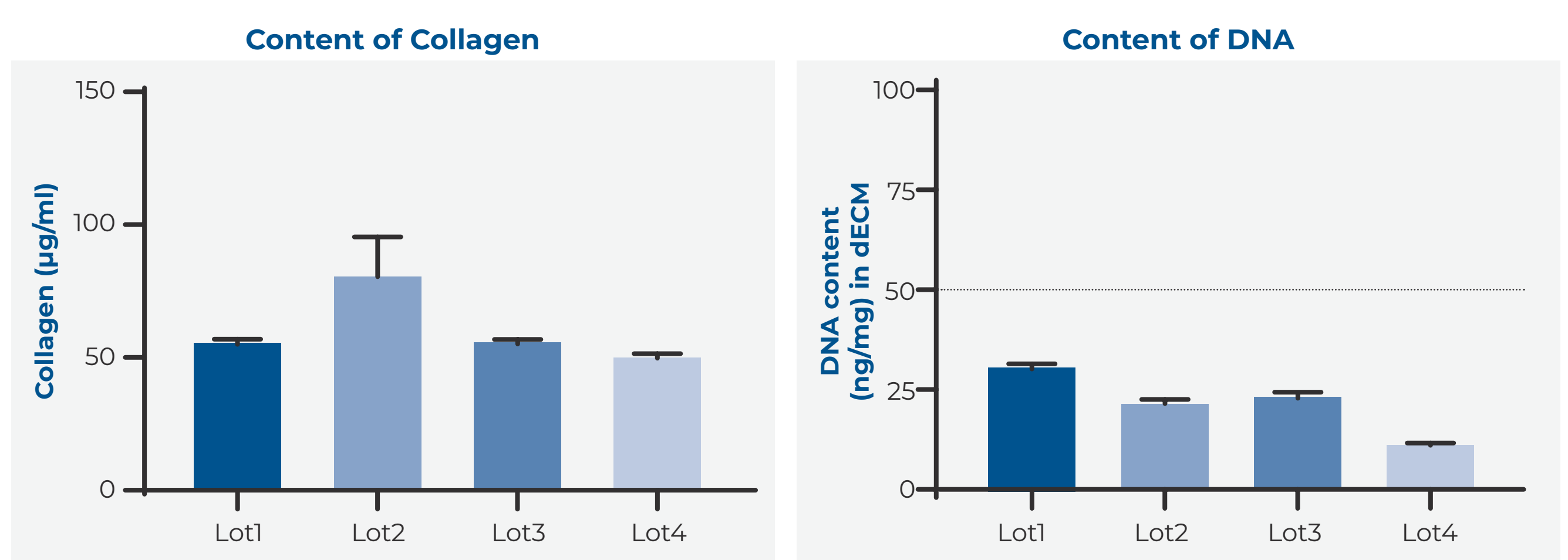
Results

HomoGel PROCESSING



HomoGel demonstrates a preserved natural architecture

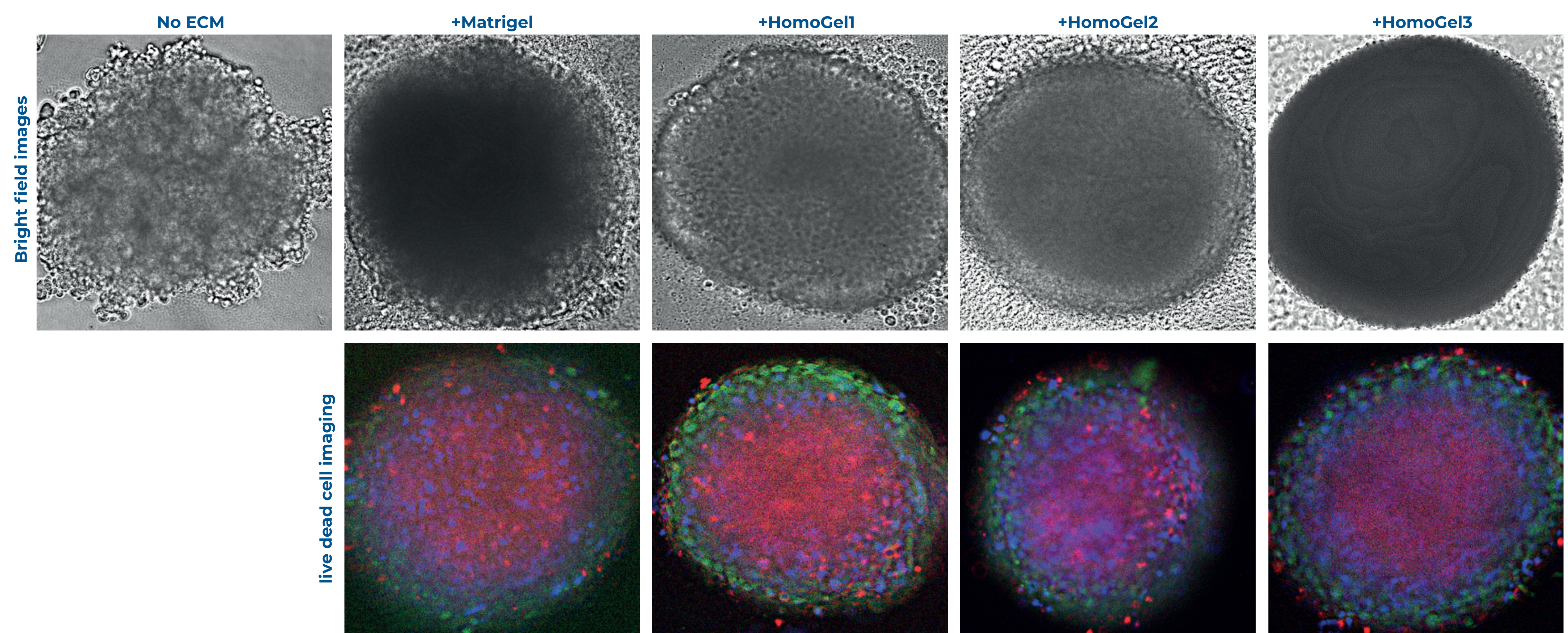
HomoGel FEATURES



HomoGel demonstrates < 50ng DNA per mg/decellularized ECM dry weight

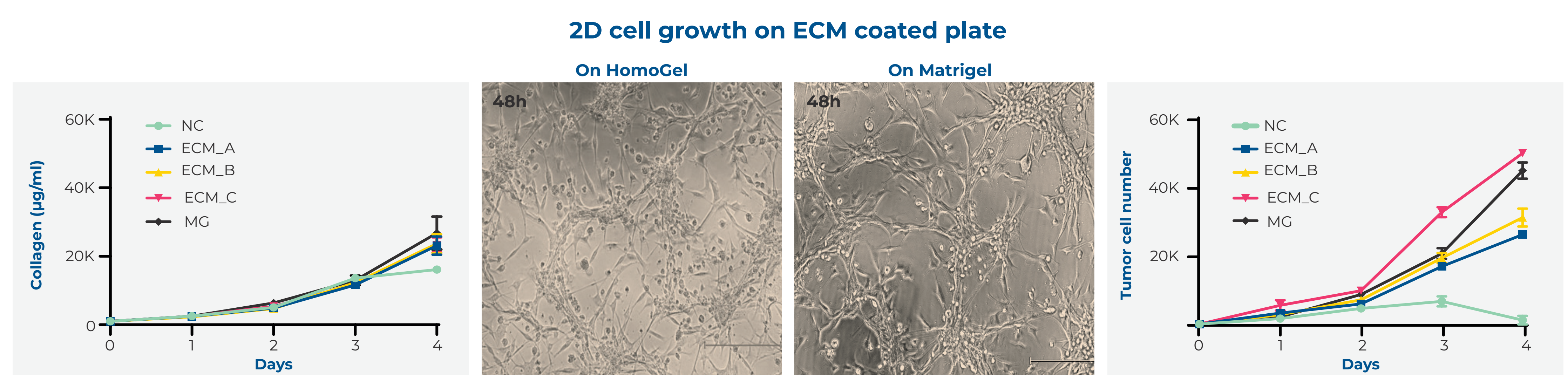
HomoGel APPLICATIONS

(A) Pre-clinical 3D tumor cell culture system



Our BIOMEX human tissue-derived HOMOgel promotes 3D spheroid formation of tumor cells (A). Bright field microscopy (upper images). Fluorescence microscopy of life (Calcein/green dye), and dead (PI/red dye) staining of tumor spheroids (lower images).

(B) Cell growth analysis



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Conclusion

The extracellular matrix (ECM) is a complex network of proteins and polysaccharides crucial for tissue structure and function. Such ECMs hold promise to enhance pre-clinical research in oncology and regenerative medicine. This research

aims to develop a novel natural human tissue-derived ECM: We hypothesize that this BIOMEX-ECM will offer a more physiologically relevant microenvironment for studying tumor progression, metastasis, and tissue repair processes.

Acknowledgments & contact

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