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Deconstruction – reconstruction of the tumour

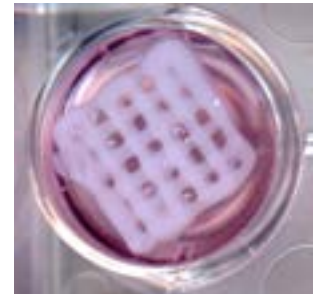
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Our group works on Glioblastoma Multiforme (GBM) tumours. In collaboration with neurosurgeons we obtain tumours from the tumorothèque, which are disassociated mechanically with the aim of recuperating all the cells present in the tumour. It is well known that the Glioblastoma consists of a heterogeneous cell population and our culture conditions allow for the proliferation and survival of all the cell types present in the original tumour. This first part would represent the deconstruction of the tumour and at present we have at our disposition a collection of 80 primary cultures of GBMs. Initial experiments have shown that in the present of “Cancer-associated Fibroblasts” or CAFs, tumour cells proliferate more and respond less to irradiation and temolozolamide (TMZ) (principal treatment for GBM). For the second part of our project namely the “reconstruction” we have developed a system of 3D-bioprinting, which would include adding a mixture of primary GBM cells and CAFs in a matrix of hydrogel and collagen that would

represent our bioink. Using a 3D-bioprinter we would then reconstruct the tumour. The reconstructed tumour scaffolds should all be identical and contain similar cell numbers that are important in the analyses. Once tumour cell aggregates are visible in the scaffolds, these scaffolds would be used to determine the role of CAFs in the “protection – survival” of the tumour after chemo- (100 μM TMZ) and/or radiotherapy.



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