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(54) Title: INDIVIDUALIZED PATIENT-DERIVED TUMOR ORGANIDS

(57) Abstract: The present disclosure provides compositions and methods for preparing and using individualized patient-derived tumor organoids (IPTO). Human iPSC-derived cerebral organoids can be used as hosts for tumor tissue grafts. Patient materials can be obtained directly after surgery and dissected into small pieces. The small tumor tissue is inserted into the cerebral organoid to prepare a hybrid organoid. This hybrid organoid can grow for several weeks to months, allowing even slow-growing tumors, such as glioma with IDH mutations and pilocytic astrocytoma, to proliferate. The tumor pieces preferably include both tumor cells and adjacent stromal cells, allowing testing of conventional chemotherapeutic agents as well as immunotherapeutic agents.

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