In a study, by Huang et al. scRNA-Seq is used to identify a unique initiating cell subpopulation (SULT1E1+ ) in high-grade meningiomas. This subpopulation modulates the polarization of M2-type macrophages and promotes meningioma progression and meningioma recurrence. A novel patient-derived meningioma organoid (MO) model is established to characterize this unique subpopulation. The resulting MOs fully retain the aggressiveness of SULT1E1+ and exhibit invasiveness in the brain after orthotopic transplantation. By targeting SULT1E1+ in MOs, the synthetic compound SRT1720 is identified as a potential agent for systemic treatment and radiation sensitization. These findings shed light on the mechanism underlying the malignancy of high-grade meningiomas and provide a novel therapeutic target for refractory high-grade meningioma [1].

1)
Huang M, Xu S, Li Y, Shang L, Zhan X, Qin C, Su J, Zhao Z, He Y, Qin L, Zhao W, Long W, Liu Q. Novel Human Meningioma Organoids Recapitulate the Aggressiveness of the Initiating Cell Subpopulations Identified by ScRNA-Seq. Adv Sci (Weinh). 2023 Mar 30:e2205525. doi: 10.1002/advs.202205525. Epub ahead of print. PMID: 36994665.