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Next step towards functional precision medicine in neuro-oncology   Get access

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Extract

The concept of precision medicine aims to identify the optimal treatment for a given patient. There are essentially 2 main strategies that guide this approach: (1) Static *omics*-driven profiling to identify actionable molecular alterations for targeted therapy and (2) functional profiling,[1,2] where living cancer cells are directly exposed to drugs and the dynamic responses such as increased cell death, reduced proliferation, or decreased cancer cell numbers are measured to assess the anti-tumor activity of the drugs. In the context of glioblastoma, actionable mutations are rare, and therefore -*omics*-driven approaches lead to personalized treatments only in a minority of patients.[3] Therefore, functional precision medicine approaches are emerging as an attractive alternative. These functional platforms typically relied on patient-derived models, such as cell lines, patient-derived organoids (PDO),[4] or patient-derived xenografts.[5] However, generating these models can be time-consuming and success rates vary by tumor type, with more aggressive cancers generally having a higher chance of successful model establishment. An alternative approach is to use acute tumor samples directly, without the need for cultivation.

Issue Section: Breaking News Editorial

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