Formalin fixed paraffin embedded

Formalin-fixed, paraffin-embedded (FFPE) tissues may be stored indefinitely at room temperature, and nucleic acids (both DNA and RNA) may be recovered from them decades after fixation, FFPE tissues are an important resource for historical studies in medicine.

Embedding can also be accomplished using frozen, non-fixed tissue in a water-based medium. Pre-frozen tissues are placed into molds with the liquid embedding material, usually a water-based glycol, OCT, TBS, Cryogel, or resin, which is then frozen to form hardened blocks.

Multidimensional genotyping of formalin-fixed paraffin-embedded (FFPE) samples has the potential to improve diagnostics and clinical trials for brain tumors, but prospective use in the clinical setting is not yet routine.

Combined use of multiplexed copy number and mutation detection from FFPE samples in the clinical setting can efficiently replace singleton tests for clinical diagnosis and prognosis in most settings. The results support incorporation of these assays into clinical trials as integral biomarkers and their potential to impact interpretation of results. Limited tumor suppressor variant capture by targeted genotyping highlights the need for whole-gene sequencing in glioblastoma [1].

[1)

Ramkissoon SH, Bi WL, Schumacher SE, Ramkissoon LA, Haidar S, Knoff D, Dubuc A, Brown L, Burns M, Cryan JB, Abedalthagafi M, Kang YJ, Schultz N, Reardon DA, Lee EQ, Rinne ML, Norden AD, Nayak L, Ruland S, Doherty LM, LaFrankie DC, Horvath M, Aizer AA, Russo A, Arvold ND, Claus EB, Al-Mefty O, Johnson MD, Golby AJ, Dunn IF, Chiocca EA, Trippa L, Santagata S, Folkerth RD, Kantoff P, Rollins BJ, Lindeman NI, Wen PY, Ligon AH, Beroukhim R, Alexander BM, Ligon KL. Clinical implementation of integrated whole-genome copy number and mutation profiling for glioblastoma. Neuro Oncol. 2015 Mar 9. pii: nov015. [Epub ahead of print] PubMed PMID: 25754088.

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