CUTTING TUMOR SLICES

PROTOCOL FOR SECTIONING LIVE & FIXED TUMOR SPECIMENS

Key to reading the protocol:

√ Rationale for procedural step

♠ Tips & Tricks

1. Make 2% agarose using low-gelation temperature agarose (Sigma-Aldrich) or using the Precisionary agarose tablets. Mix with PBS buffer to dissolve.
2. Dissect and excise the tumor, and wash with PBS.
3. Glue the tumor specimen to the Compresstome® specimen tube, then embed with 2% agarose solution. Cool immediately with the pre-chilled chilling block to solidify the agarose gel.

   ♠ Pre-chill the chilling block for 10 min in the freezer or in ice water.
4. Load the specimen tube containing the tumor tissue onto the Compresstome® vibratome and begin cutting using normal procedures. The agarose that surrounds the tumor will help hold it in place and allow the tumor to be sectioned with minimal displacement.
5. For fixed tumor slices: place tumor slices in 4% paraformaldehyde for at least 24 hours, then rinse with PBS before further experimental processing.
6. For live tumor slices, immerse tumor slices in PBS for at least 10 min, then incubate per your own experimental protocols.

   ♠ What are the optimal settings on the Compresstome® for cutting tumor slices? Try an oscillation of 3-4 and an advance (speed) of 2. We find that these parameters yield the best tumor sections.

References

*** Uses the Compresstome® for successful tumor slices (live and fixed).**

1. Askoxylakis V et al. Preclinical Efficacy of Ado-trastuzumab Emtansine in the Brain Microenvironment. **J Natl Cancer Inst**. 2015Nov 7;108(2).

2. Boldajipour B et al. Tumor-infiltrating lymphocytes are dynamically desensitized to antigen but are maintained by homeostatic cytokine. **J Cl Insight**. 2016 Dec 8;1(20):e89289.

3. Broz ML et al. Dissecting the tumor myeloid compartment reveals rare activating antigen-presenting cells critical for T cell immunity. **Cancer Cell**. 2014 Nov10;26(5):638-52.

4. Nia H et al. Solid stress and elastic energy as measures of tumour mechanopathology. **Nature Biomedical Engineering** 2016; 1:0004.