Sep 17, 2025

Liver Tissue Tissue Microarray (TMA) Embedding and Sectioning --University of Minnesota TMCs

DOI
https://dx.doi.org/10.17504/protocols.io.n2bvje89ngk5/v1

Elizabeth Schmidt[1], Laura Niedernhofer[1]

[1]University of Minnesota, Minneapolis, MN

Cellular Senescence Net...

Allie Abdellatif
MIBAM, University of Minnesota, Minneapolis, MN

DOI: **https://dx.doi.org/10.17504/protocols.io.n2bvje89ngk5/v1**

Protocol Citation: Elizabeth Schmidt, Laura Niedernhofer 2025. Liver Tissue Tissue Microarray (TMA) Embedding and Sectioning --University of Minnesota TMCs. **protocols.io** **https://dx.doi.org/10.17504/protocols.io.n2bvje89ngk5/v1**

Protocol status: Working
We use this protocol and it's working

Created: August 08, 2025

Last Modified: September 17, 2025

Protocol Integer ID: 224263

Keywords: liver tissue tissue microarray, proteomic platform, tma

Funders Acknowledgements:
NIH
Grant ID: 5U54AG076041-04

Abstract

Construct TMAs compatible for multiple spatial transcriptomic and proteomic platforms.

Guidelines

Ethics Statement:
This protocol requires prior approval by the users' local Institutional Animal Care and Use Committee (IACUC), Institutional Review Board (IRB) or equivalent ethics committee(s), depending on the source of the tissue.

Materials

FFPE tissue blocks with sufficient tissue (width and depth) for TMA construction
Beecher Manual Tissue Arrayer (MTA-1)
Biopsy punch (2 mm)

Troubleshooting

TMA dimensions are determined based on the area requirements of all planned spatial platforms.

1 The smallest capture dimension of all the spatial platforms for the multiplatform experiment was 6.5× 6.5 mm. It was determined that four x 2 mm tissue cores with 2.8 mm spacing could successfully fit within these dimensions.

Selection of tissue core from each FFPE tissue block

2 H&E of each tissue block for the TMA was examined by pathologist and 2 mm area determined and annotated on the FFPE block.

3 2 mm cores removed from FFPE block using biopsy punch

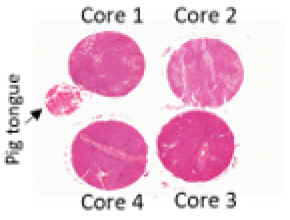
TMA construction

4 The Beecher Manual Tissue Arrayer (MTA-1) was used for TMA construction.

4.1 Four tissue cores were embedded in a paraffin block in a column/ grid format.

4.2 To aid in orientation, a 0.6mm core of pig tongue tissue was included as a marker.

4.3



Example Liver TMA H&E