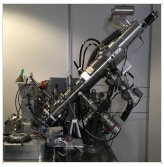

Apr 15, 2021

HuBMAP - STANFORD RTI Multiplex Ion Beam Imaging (MIBI) MODALITY OVERVIEW

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1 Works for me dx.doi.org/10.17504/protocols.io.btnfnmbn

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ABSTRACT

We aim to provide high resolution, high dimensional images of human placenta in early pregnancy by using our multiplexed ion beam imaging methodology for building an atlas of human organs.

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KEYWORDS

null, HuBMAP, RTI, multiplex, imaging, MIBI, antibody, mibiscope, lyophilization, RTI-Stanford/ MIBI, Stanford

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Sample collection and preparation

1 Formalin fixation and paraffin embedding of specimens dx.doi.org/10.17504/protocols.io.bqp6mvre

2 Sectioning of FFPE specimens https://dx.doi.org/10.17504/protocols.io.bfz4jp8w

MIBI slide specifications is detailed in MIBI staining dx.doi.org/10.17504/protocols.io.bt9tnr6n

Antibody panel validation for MIBI

3 Immunohistochemistry validation of antibodies for MIBI staining

IHC staining dx.doi.org/10.17504/protocols.io.bf6ajrae
MIBI and IHC solutions dx.doi.org/10.17504/protocols.io.bhmej43e

4 Antibody preparation for MIBI

Metal-antibody labelling dx.doi.org/10.17504/protocols.io.bhyej7te
Antibody lyophilization dx.doi.org/10.17504/protocols.io.bhmgj43w
Lyophilized antibody reconstitution dx.doi.org/10.17504/protocols.io.bjd6ki9e

5 MIBI antibody panel titration

MIBI staining dx.doi.org/10.17504/protocols.io.bt9tnr6n
MIBI and IHC solutions dx.doi.org/10.17504/protocols.io.bhmej43e

MIBI data acquisition

6 MIBI staining dx.doi.org/10.17504/protocols.io.bt9tnr6n
Instrument Quality Control
Performed according to the manufacturer (IonPath) specifications
Field of view selection
Performed according to the manufacturer (IonPath) specifications

MIBI data analysis

7 MIBI data extraction

Image processing Ionpath instrument internal document

8 MIBI image segmentation
Greenwald et al. https://www.biorxiv.org/content/10.1101/2021.03.01.431313v2

9 Cell type identification

TBD

10 High dimensional data analysis

TBD

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