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HuBMAP TMC-Florida/Zurich CODEX Modality Overview V.2

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Protocol status: Working

We use this protocol and it's working

Created: April 18, 2020

Last Modified: October 03, 2020

Protocol Integer ID: 35855

Keywords: HubMAP, TMC-UF/Zurich, CODEX, Multiplex fluorescent Imaging , Lymph node , Thymus , Spleen, CODEX processing, HubMAP Hive Globus,



Abstract

This protocol is an overview of all of the protocols currently in use for the CODEX modality at HubMAP Tissue Mapping Center, TMC-Florida/Zurich. It includes protocols.io links to each of the individual protocols that make up this project workflow, from processing tissue and imaging the samples, to uploading the final data to the HuBMAP HIVE.

Guidelines

This workflow protocol may be interrupted at any point.


Steps are permitted to be performed in non-consecutive order.

Repeated runs on the same sample do not require employing the entire protocol sequence.

Materials

Required materials are provided within each linked protocol.

Safety warnings

 Follow all safety guidelines provided with individual links within this protocol.

Before start

Confirm sample ID information at the start of each step.



- 1 Process donor organs into samples for analysis.
Lymph Node: dx.doi.org/10.17504/protocols.io.bbgnijve
Thymus: dx.doi.org/10.17504/protocols.io.bbgmiju6
Spleen: dx.doi.org/10.17504/protocols.io.bc3kiykw

- 2 Register organ donor, organs received and common coordinate region information in the HuBMAP UUID generator at <https://uuid.hubmapconsortium.org>.

- 3 Prepare paraffin blocks from tissue samples.
Cassette Processing: dx.doi.org/10.17504/protocols.io.8nzhvf6
Paraffin Embedding: dx.doi.org/10.17504/protocols.io.bam9ic96

- 4 Prepare H&E sections for histopathological assessment.
Sectioning: dx.doi.org/10.17504/protocols.io.bahdib26
H&E Staining: dx.doi.org/10.17504/protocols.io.beamjac6

- 5 Validate antibodies in all target tissue types by IHC using DAB Staining:
<https://dx.doi.org/10.17504/protocols.io.bdiei4be>

- 6 Coat coverslips with Poly-L-Lysine.
Coverslip Preparation: dx.doi.org/10.17504/protocols.io.baxyifpw

- 7 Cut and mount sections for CODEX analysis.
Sectioning: dx.doi.org/10.17504/protocols.io.basdiea6

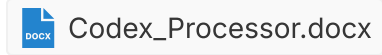
- 8 Stain coverslips with Akoya inventoried antibodies.
Staining: dx.doi.org/10.17504/protocols.io.bbsdina6

- 9 Make CODEX bar coded reporter trays.
Preparation: dx.doi.org/10.17504/protocols.io.bc2riyd6



10 Perform multiplex data acquisition using CODEX robot and Keyence microscope.
Acquisition: [dx.doi.org/10.17504/protocols.io.bdifi4bn](https://doi.org/10.17504/protocols.io.bdifi4bn)

11 Transfer images to analysis computer and perform CODEX processing.



12 Register completed CODEX section information in the HuBMAP UUID generator
at <https://uuid.hubmapconsortium.org>.

13 Prepare and upload data to the HuBMAP HIVE Globus using hipergator.

