## **Description of Additional Supplementary Files**

File Name: Supplementary Data 1

Description: Sequences of primers for reverse transcription with respective 5' modifications.

File Name: Supplementary Data 2

Description: Sets of reverse transcription primer barcodes to encode the nine tissue sections.

Optimal mixtures were determined using BARCOSEL.

File Name: Supplementary Data 3

Description: Sequences of ligation round 1 oligonucleotides with their respective 5'

modifications.

File Name: Supplementary Data 4

Description: Sequences of ligation round 2 oligonucleotides with their respective 5'

modifications.

File Name: Supplementary Data 5

Description: Sequences of the bridge oligonucleotides and primers used during xDBiT library

preparation.