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Protocol

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Single-cell RNA-seq of maize meiocytes and pollen grains

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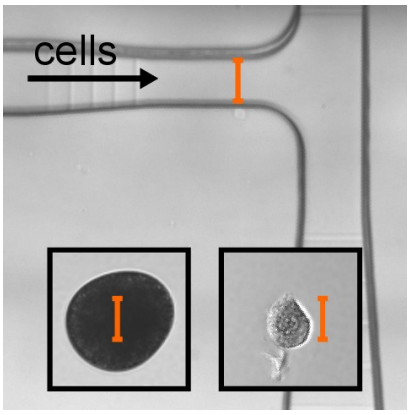
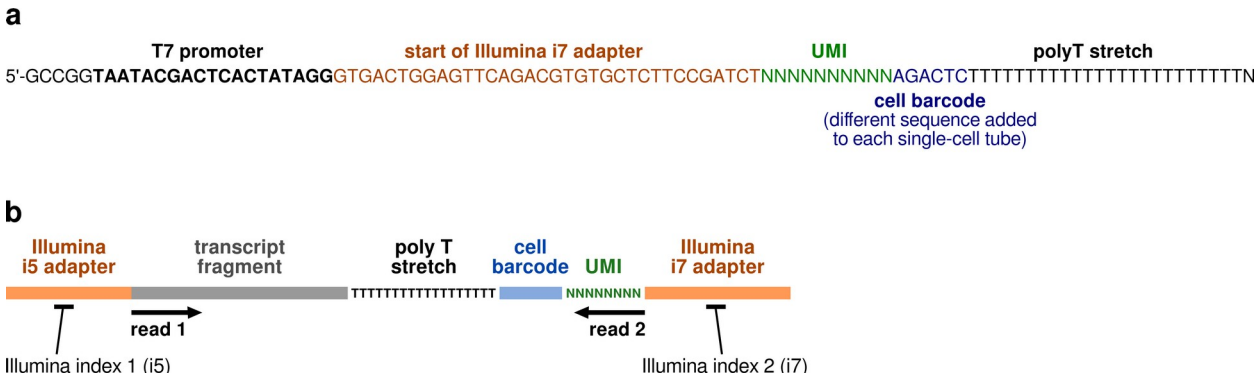


Supplementary Fig. 1 | Maize pollen and meiocytes are too large to fit in the 10X Chromium Chip. A close-up of the 10X flow cell showing a channel junction where cells enter from the left. Insets, pollen and a meiotic cell at the same size scale as the 10X chip. The orange bars indicate the width of the 10X channel, approximately ~50 µm.



Supplementary Fig. 2 | Schematic of CEL-Seq primers and final sequencing libraries. a, Annotated sequence of an example primer used for reverse transcription. The full sequence of all CEL-seq primers can be found in Supplementary Table 1. These primers are identical except that the cell barcode section changes with each primer to allow multiplexing. **b**, Cartoon of final CEL-seq libraries, showing the information contained in read 1 and read 2. UMI, unique molecular identifier.

Anther size	Stage
< 1.2 mm	Pre-meiosis
1.1-1.6 mm	Meiotic prophase I, leptotene
1.3-1.9 mm	Meiotic prophase I, zygotene
1.7-2.2 mm	Meiotic prophase I, pachytene
1.8-2.3 mm	Meiotic prophase I, diplotene and diakenesis
2.0-2.5 mm	Meiotic I division, dyad, tetrad
2.3-5 mm	Unicellular microspore
4.0 mm-5.5 mm	Bicellular microspore
>4.8 mm	Tricellular Pollen

Supplementary Table 2 | Relationship between maize anther size and developmental stage for the W23 maize inbred.