Description of Additional Supplementary Files

File Name: Supplementary Movie 1 **Description**: Timelapse of formation of SGm in MB-hydrogel over 4 days.

File Name: Supplementary Movie 2Description: Representative calcium imaging of mouse SGm at Day 7 stimulated with CCh.

File Name: Supplementary Movie 3 **Description:** Representative of whole-chip calcium imaging on mouse SGm at Day 7 stimulated with CCh.

File Name: Supplementary Movie 4Description: Representative calcium imaging of human SGm at Day 7 stimulated with CCh.

File Name: Supplementary Movie 5 **Description:** Representative whole-chip calcium imaging on human SGm at Day 7 stimulated with CCh.

File name: Supplementary Data 1Description: Source data for the main and supplementary figures.