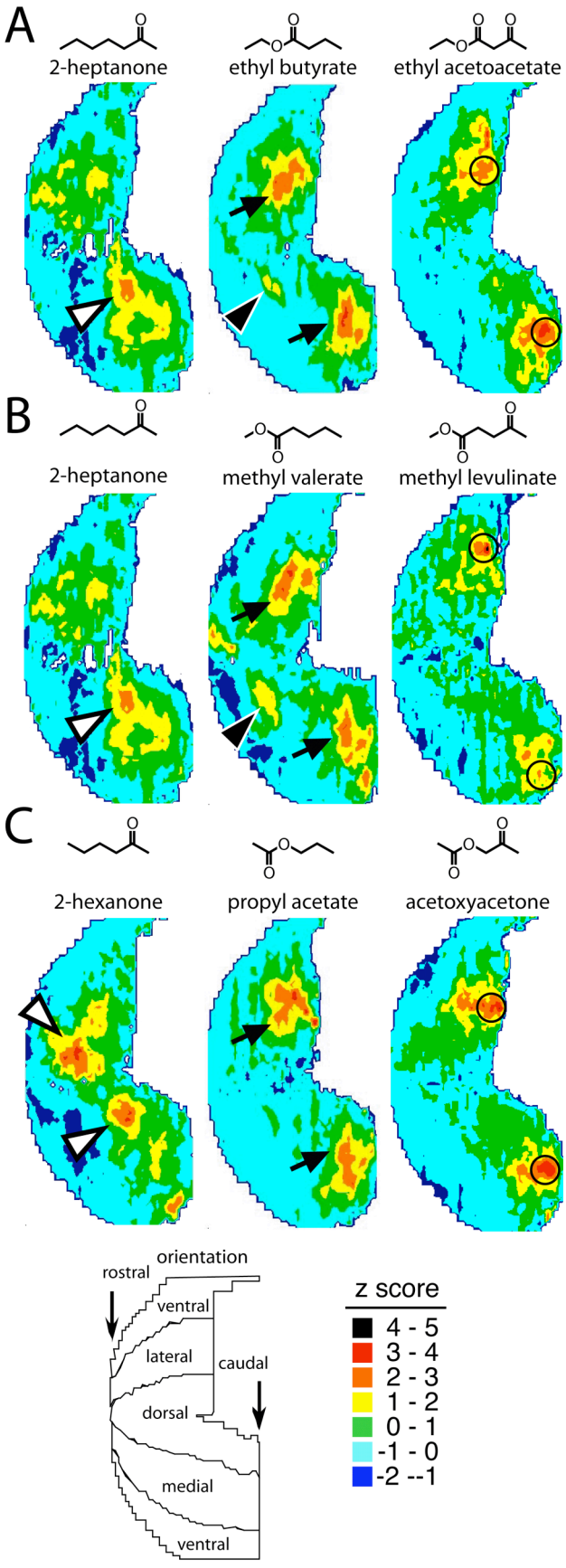
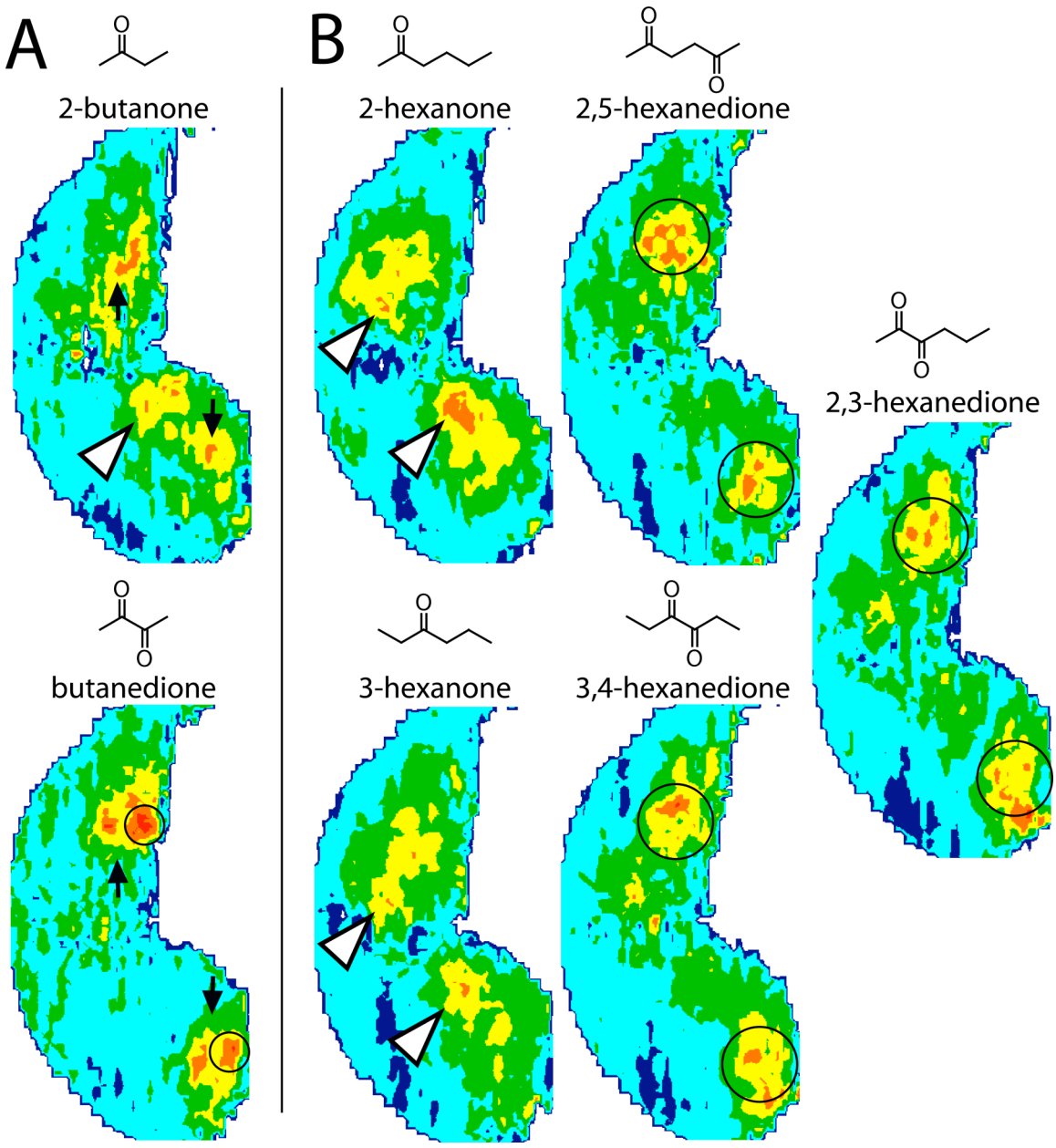
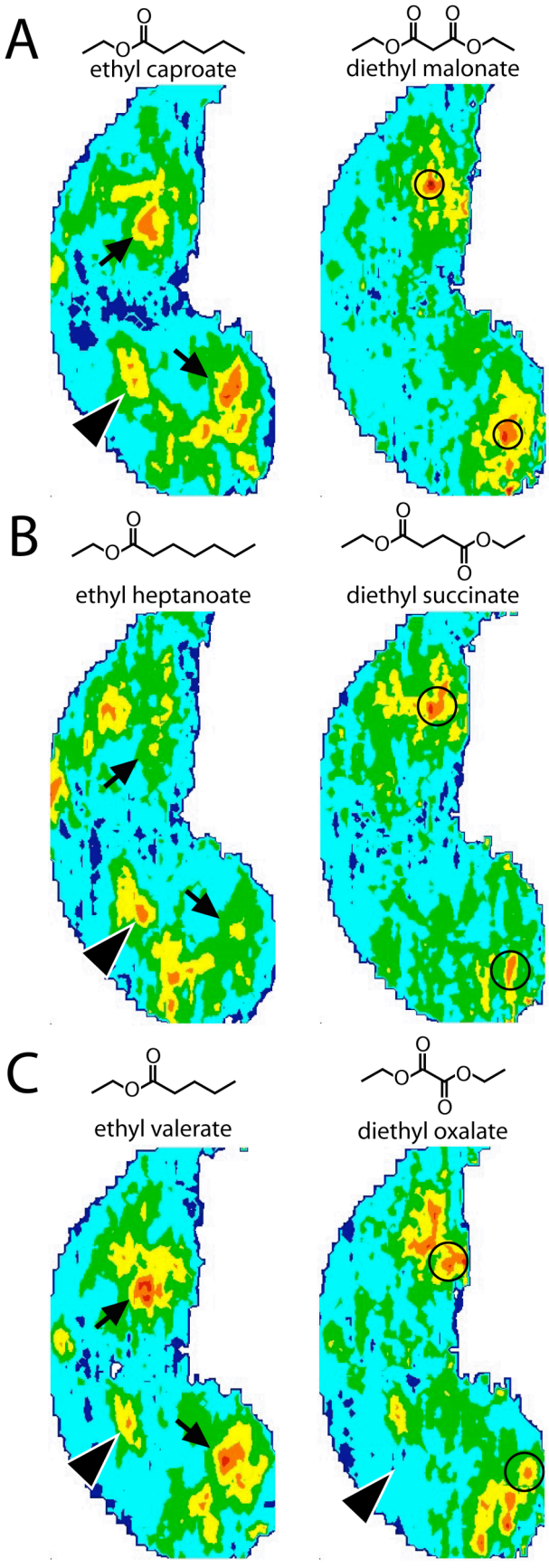

A
2-heptanone
ethyl butyrate
ethyl acetoacetate
B
2-heptanone
methyl valerate
methyl levulinate
C
2-hexanone
propyl acetate
acetoxyacetone
orientation
rostral
ventral
lateral
caudal
dorsal
medial
ventral
z score
4 - 5
3 - 4
2 - 3
1 - 2
0 - 1
-1 - 0
-2 --1

Suppl. Fig. 1. Dorsal-centered version of Figure 1 showing anatomically standardized contour charts that illustrate the distribution of 2DG uptake across the entire glomerular layer in rats exposed to odorants possessing ketone groups, ester groups, or combinations of ketone and ester groups. **A:** Ethyl acetoacetate and comparator odorants that contain only one functional group. **B:** Methyl levulinate and comparator odorants. **C:** Acetoxyacetone and comparator odorants. Each chart represents the average of both bulbs of several rats exposed to the same odorant (Table 1). The charts are oriented as shown at bottom left. Warmer colors indicate higher uptake and cooler colors lower uptake in color steps corresponding to the number of standard deviations above or below the mean uptake across the layer as shown at bottom right. Open arrowheads indicate a glomerular module that responds to ketone odorants, black arrowheads indicate glomerular modules responding to methyl and ethyl esters, and black arrows indicate glomerular modules responding to aliphatic esters in general. Circled areas denote posterior regions responding optimally to the odorants possessing both a ketone and an ester group.

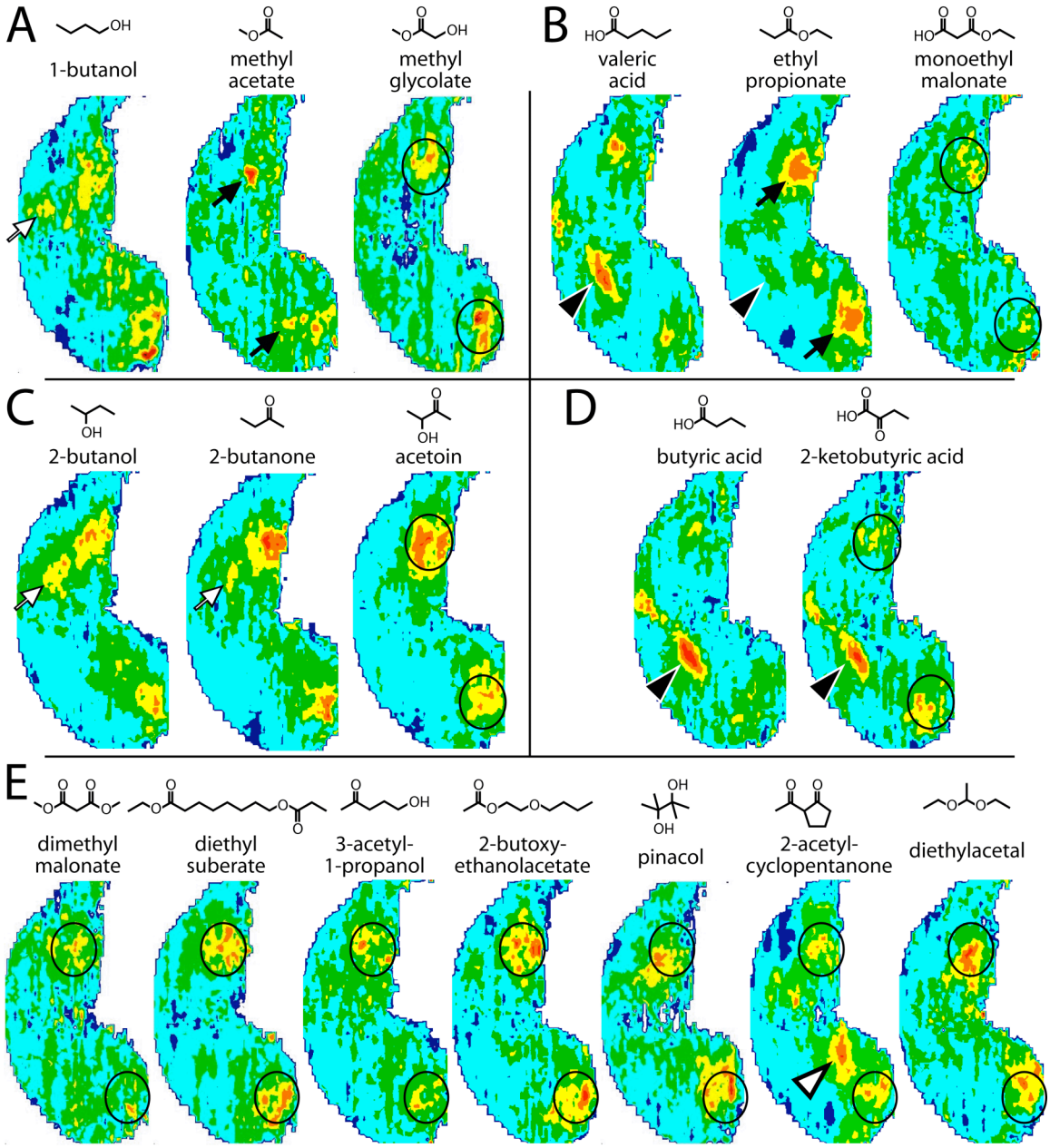


Suppl. Fig. 2. Dorsal-centered version of Figure 2 showing anatomically standardized contour charts that illustrate the average distribution of 2DG uptake across the entire glomerular layer in rats exposed to (**A**) four-carbon or (**B**) six-carbon ketones or diketones. Orientation and color scale are the same as in Supplemental Figure 1. Open arrowheads indicate glomerular modules that respond to ketone odorants. Black arrows in **A** show a region of uptake evoked by 2-butanone for comparison to the more caudal

area activated by the corresponding diketone, butanedione (circled). Circled areas in **B** indicate posterior regions stimulated by six-carbon diketones but not by corresponding odorants with only one ketone group.

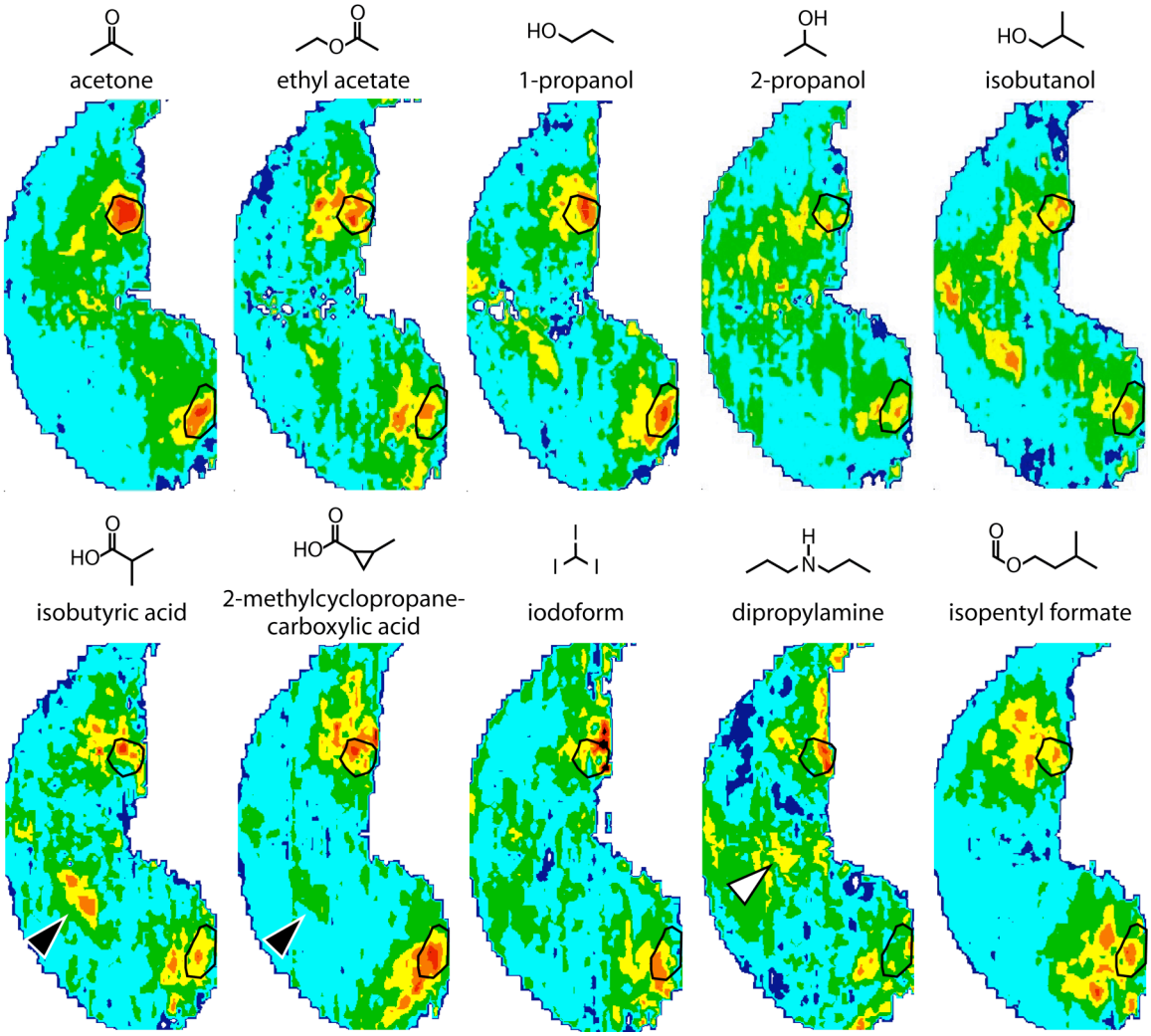

A
ethyl caproate
diethyl malonate
B
ethyl heptanoate
diethyl succinate
C
ethyl valerate
diethyl oxalate

Suppl. Fig. 3. Dorsal-centered version of Figure 3 showing anatomically standardized contour charts that illustrate the average distribution of 2DG uptake across the entire glomerular layer in rats exposed to (**A**) eight-carbon, (**B**) nine-carbon, or (**C**) seven-carbon ethyl esters or corresponding diesters. Orientation and color scale are the same as in Supplemental Figure 1. Black arrowheads indicate glomerular modules responding to ethyl esters, and arrows indicate modules responding to esters in general. Circled areas indicate posterior regions activated by the diesters.



Suppl. Fig. 4. Dorsal-centered version of Figure 4 showing anatomically standardized contour charts that illustrate the average distribution of 2DG uptake across the entire glomerular layer in rats exposed to odorants. Orientation and color scale are the same as in Supplemental Figure 1. **A:** Odorants possessing a primary alcohol group, an ester group, or both. **B:** Odorants possessing a carboxylic acid group, an ester group, or both. **C:** Odorants possessing a secondary alcohol group, a ketone group, or both. **D:** Odorants

possessing a carboxylic acid group or both a carboxylic acid and a ketone functional group. **E:** Odorants possessing various combinations of oxygenic functional groups. Open arrows indicate a glomerular module activated by alcohols and by 2-butanone. Black arrows indicate modules activated by esters in general. Black arrowheads indicate a module that responds to carboxylic acids and ethyl esters. The open arrowhead indicates a module that responds to ketone odorants. The outlined regions show the similarity in location of posterior glomeruli activated by various odorants having two oxygenic functional groups.



Suppl. Fig. 5. Dorsal-centered version of Figure 7 showing anatomically standardized contour charts that illustrate the average distribution of 2DG uptake across the entire glomerular layer in rats exposed to other odorants that stimulate the posterior glomeruli. Orientation and color scale are the same as in Supplemental Figure 1. The outlined areas represent the boundaries of the modules that were analyzed in Figure 5. Black arrowheads show the location of a module that responds to most carboxylic acids, but that is not activated by the alicyclic odorant, 2-methylcyclopropanecarboxylic acid. The open arrowhead shows a very dorsal region that shows some evidence of being activated by the secondary amine, dipropylamine.