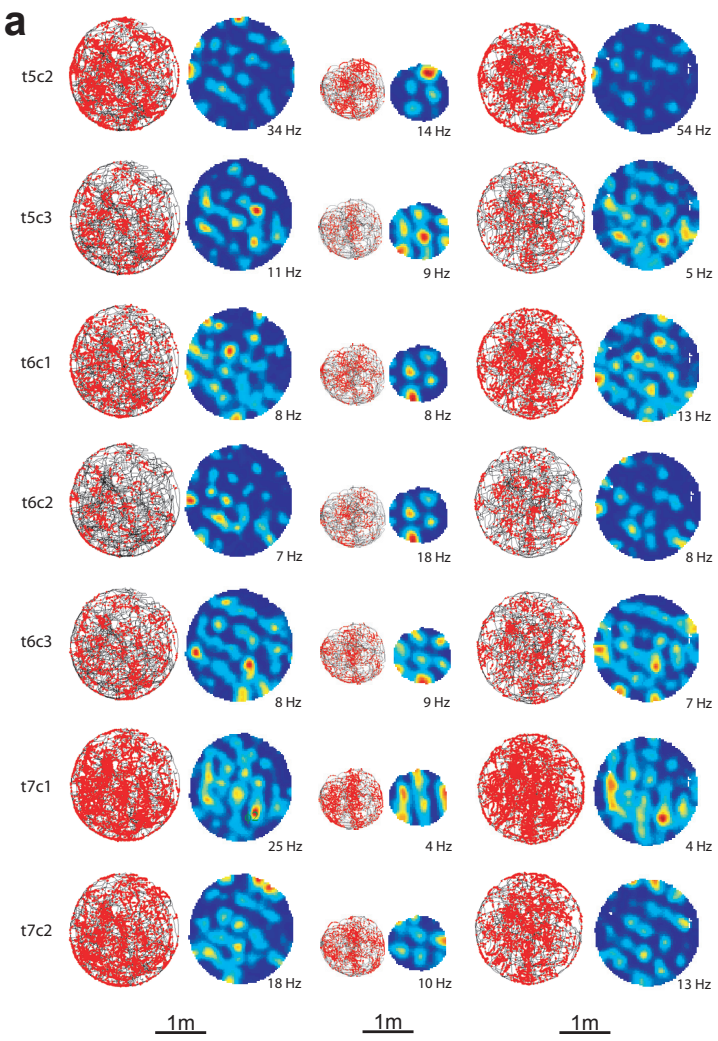
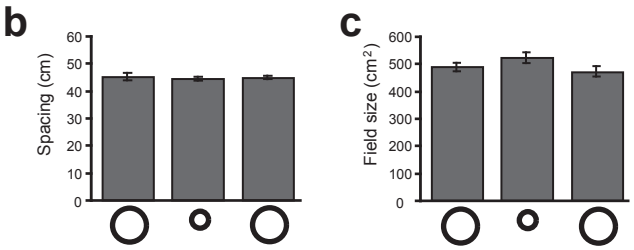
# Supplementary Figure S3




*Preserved grid structure after scaling of the environment.* In order to determine whether the spacing of the grid is independent of external boundaries, we compared grids of the same cells in two circular environments of different size (2 m vs. 1 m diameter) at the same location. **a**, Trajectory and rate maps for the complete sample of simultaneously recorded dMEC cells in the experiment in Figure 1d. Unlike place fields in the subiculum (1), firing grids of units in layer II of dMEC did not scale with the area of the environment. **bc**, Spacing (**b**) and field size (**c**) for all cells compared in the large and small circles. There was no difference in the spacing of the grid ($t(28) = 1.2$, $P > 0.20$; 29 cells from 3 rats), although the size of individual fields and the average firing rate increased marginally in the small circle (field size: $t(28) = 2.5$, $P < 0.05$; average rate: 2.3 ± 0.2 vs. 2.5 ± 0.2 Hz; $t(28) = 2.8$, $P < 0.05$). The results suggest that the metric of grid cells is only minimally influenced by the distance to the boundaries of the environment. Thus, they reinforce the view that allothetic cues contribute little to the grid-like firing structure and that grids appear universally, regardless of the particular features of the external environment. The maintenance of the triangular structure of the grid in darkness and in rescaled environments leaves self-motion information as the likely source of maintained discharge in grid cells in moving animals.

1. Sharp, P.E. Subicular cells generate similar spatial firing patterns in two geometrically and visually distinctive environments: comparison with hippocampal place cells. Behav. Brain Res. 85, 71-92 (1997).