

Table S2. Topographical product and data reconstruction rates for SOM maps of certain dimensions. The map configuration with an optimal neighborhood preservation ($4 \times 2 \times 2$) indicated by a topographical product $\equiv 0$ is used for further analysis (cf. arrow). It describes the 12-dimensional input manifold by a 3-dimensional embedding space and a data reconstruction of 70%.

d_{SOM}	Network geometry	Topographical product	Reconstruction Rate
1	8	-0.022 ± 0.003	0.68 ± 0.0006
2	4×2	-0.014 ± 0.004	0.68 ± 0.0003
1	10	-0.019 ± 0.002	0.69 ± 0.0003
2	5×2	-0.015 ± 0.002	0.69 ± 0.0002
1	12	-0.013 ± 0.001	0.70 ± 0.0002
2	4×3	-0.014 ± 0.002	0.70 ± 0.0002
2	6×2	-0.023 ± 0.002	0.70 ± 0.0003
3	$3 \times 2 \times 2$	-0.001 ± 0.002	0.70 ± 0.0002
1	14	-0.012 ± 0.001	0.71 ± 0.0003
2	7×2	-0.024 ± 0.002	0.71 ± 0.0002
1	16	-0.010 ± 0.001	0.71 ± 0.0002
2	4×4	-0.005 ± 0.001	0.72 ± 0.0003
2	8×2	-0.022 ± 0.002	0.72 ± 0.0002
3	$4 \times 2 \times 2$	0.002 ± 0.001	0.72 ± 0.0005 ←
4	$2 \times 2 \times 2 \times 2$	0.035 ± 0.003	0.72 ± 0.0003
1	20	-0.011 ± 0.001	0.71 ± 0.0004
2	5×4	-0.023 ± 0.002	0.73 ± 0.0003
2	10×2	-0.028 ± 0.003	0.73 ± 0.0002
3	$5 \times 2 \times 2$	-0.015 ± 0.002	0.73 ± 0.0003
1	24	-0.015 ± 0.002	0.71 ± 0.0004
2	6×4	-0.028 ± 0.002	0.74 ± 0.0002
2	12×2	-0.020 ± 0.002	0.74 ± 0.0003
3	$4 \times 3 \times 2$	-0.016 ± 0.002	0.74 ± 0.0002
4	$3 \times 2 \times 2 \times 2$	0.009 ± 0.001	0.74 ± 0.0003