

Table S1. Statistical data for significant differences between two stimulus conditions (e.g. open and closed spiracle) at single stimulus frequencies (Fig. 3B,D and Fig. 5D)

Far field stimulation, open vs. closed spiracle			
Wilcoxon's signed-ranks test			
Shift of threshold minima level	P 0.0368	S 25.5	Z -
Far field stimulation, 2 nd peak frequency (tympanal vibration) vs. threshold minima (nerve activity)			
Wilcoxon-Kruskal-Wallis Test			
	P 0.4085	S 180	Z 0.8
Far field stimulation, 30% threshold criterion, open vs. closed spiracle (Fig. 3B)			
Wilcoxon's signed-ranks test			
Frequency (kHz)	P	S	Z
20	0.0078	25.5	-
25	0.0391	15	-
30	0.0352	20.5	-
35	0.0488	19.5	-
40	0.0156	23	-
45	0.0039	26.5	-
50	0.0078	18	-
55	0.0078	18	-
60	0.0313	10.5	-
Far field stimulation, open vs. closed spiracle, PSTHs at 80 dB SPL (Fig. 4B)			
Wilcoxon's signed-ranks test			
Decrease of spike activity at 18 kHz	p 0.0488	S -19.5	Z -
Far field stimulation, tympanal membrane motion, open vs. closed spiracle			
Wilcoxon-Kruskal-Wallis Test			
Shift of the first maximums frequency	P 0.7002	S 310	Z -0.4
Shift of the second maximums frequency	0.8322	352	-0.2
Far field stimulation, tympanal membrane motion, open vs. closed spiracle (Fig. 3D)			
Wilcoxon's signed-ranks test			
Frequency (kHz)	P	S	Z
7	0.0237	-51.5	-
10	<0.0001	-83.5	-
30	0.0065	60.5	-
35	0.0056	61.5	-
40	0.0159	54.5	-
45	0.0016	68.5	-
50	0.0304	49.5	-
Local stimulation of the tympanum, 30% threshold criterion, open vs. closed spiracle			
Wilcoxon-Kruskal-Wallis Test			
Shift of threshold minima level	P 0.3912	S 93.5	Z -0.9
Shift of threshold minima frequency	0.0743	129	1.8
Shift of BW _{10dB} value	0.7538	72	-0.3
Local stimulation of the tympanum, tympanal membrane motion, open vs. closed spiracle			
Wilcoxon-Kruskal-Wallis Test			
Shift of displacement amplitude	P 0.4119	S 159	Z -0.8
Shift of frequency of the displacement maximum	1.0000	175.5	0.0
Local stimulation of the tympanum vs. through the spiracle, 30% threshold criterion			
Wilcoxon-Kruskal-Wallis Test			
Shift of threshold minima level	P <0.0001	S 195	Z 4.1
Shift of threshold minima frequency	0.7452	131	0.3
Local stimulation of the tympanum, 30% threshold criterion, open vs. closed spiracle			
Wilcoxon's signed-ranks test			
Shift of threshold minima frequency	P 0.4375	S 3.5	Z -
Shift of threshold minima level	0.0586	-16.5	-
Difference of BW _{10dB} value	1.0000	0.0	-
Local stimulation of the spiracle vs. far field stimulation			
Wilcoxon-Kruskal-Wallis Test			
	P	S	Z

Shift of threshold minima frequency	0.9292	127	0.1
Shift of threshold minima level	0.0280	87	-2.2
Tympanal membrane motion, probe speaker inserted into spiracle vs. far field stimulation (Fig. 5D)			
Wilcoxon-Kruskal-Wallis Test			
Frequency (kHz)	p	S	Z
5	0.0021	405	3.1
10	<0.0001	468	5.0
15	<0.0001	460	4.8
20	<0.0001	469	5.0
25	<0.0001	460	4.8
30	<0.0001	464	4.9
35	<0.0001	465	4.9
40	<0.0001	465	4.9
45	<0.0001	467	5.0
50	0.0001	452	4.5
55	0.0001	429	3.8
60	<0.0001	461	4.8

Two non-parametrical tests were made, the Wilcoxon's signed-ranks test (Matched Pairs Test) and the Wilcoxon-Kruskal-Wallis Test dependent on whether the samples were paired or not paired.
