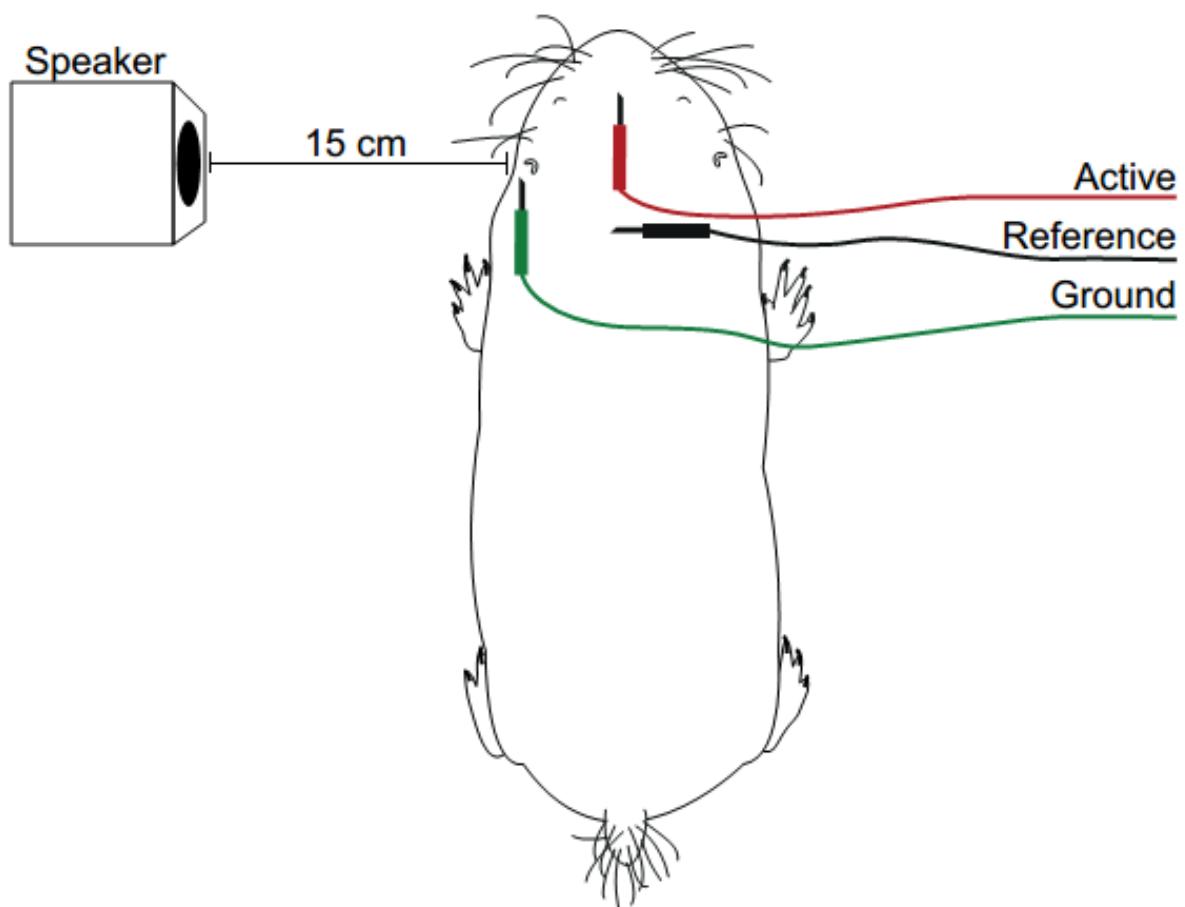


## SUPPLEMENT



**Figure S1: Electrode and speaker positions during auditory brainstem potential recordings.** All recordings were performed within a grounded Faraday cage placed in an anechoic chamber.

Table S1: **Sex, age and weight of the tested individuals.**

| Species            | Individual | Sex    | Weight<br>(g) | Age (weeks) |
|--------------------|------------|--------|---------------|-------------|
| <i>F. anselli</i>  | M1         | male   | 112           | 152         |
|                    | F1         | female | 76            | 83          |
|                    | M2         | male   | 121           | 74          |
|                    | F2         | female | 97            | 113         |
|                    | M3         | male   | 124           | 175         |
|                    | F9         | female | 71            | 109         |
|                    | M4         | male   | 150           | 55          |
|                    | F4         | female | 176           | 71          |
|                    | M5         | male   | 228           | 55          |
| <i>F. mechowii</i> | F5         | female | 180           | 102         |
|                    | M6         | male   | 437           | 81          |
|                    | F6         | female | 78            | 174         |
|                    | M7         | male   | 186           | 161         |
|                    | F7         | female | 73            | 131         |
| <i>F. micklemi</i> | M8         | male   | 105           | 115         |
|                    | F8         | female | 73            | 114         |

**Table S2: Individual thresholds and species' means (in dB SPL) at the tested frequencies.**

| <i>f</i> (kHz) | <i>F. anselli</i> |           |           |           |           |           | <i>F. mechowii</i> |           |           |           |           |           | <i>F. micklemi</i> |           |           |           |           |           |               |
|----------------|-------------------|-----------|-----------|-----------|-----------|-----------|--------------------|-----------|-----------|-----------|-----------|-----------|--------------------|-----------|-----------|-----------|-----------|-----------|---------------|
|                | M1                | F1        | M2        | F2        | M3        | F9        | Mean               | M4        | F4        | M5        | F5        | M6        | Mean               | F6        | M7        | F7        | M8        | F8        | Mean          |
| <b>0.05</b>    | 75                | 82        | 85        | 85        | 83        | 78        | <b>&gt;80</b>      | 85        | 82        | 85        | 85        | 82        | <b>&gt;80</b>      | 85        | 85        | 74        | 85        | 77        | <b>&gt;80</b> |
| <b>0.125</b>   | 58                | 62        | 56        | 56        | 50        | 45        | <b>55</b>          | 51        | 57        | 60        | 55        | 57        | <b>56</b>          | 65        | 75        | 55        | 63        | 54        | <b>62</b>     |
| <b>0.25</b>    | 41                | 55        | 51        | 38        | 42        | 41        | <b>45</b>          | 47        | 51        | 45        | 47        | 48        | <b>48</b>          | 55        | 54        | 48        | 56        | 40        | <b>51</b>     |
| <b>0.354</b>   | 35                | 44        | 43        | 43        | 38        | 37        | <b>40</b>          | 43        | 38        | 45        | 46        | 48        | <b>44</b>          | 64        | 43        | 48        | 51        | 36        | <b>48</b>     |
| <b>0.5</b>     | 36                | 39        | 33        | 33        | 38        | <b>31</b> | <b>35</b>          | 33        | 40        | 37        | 39        | 40        | <b>38</b>          | 45        | 50        | 45        | 46        | 45        | <b>46</b>     |
| <b>0.63</b>    | 36                | 33        | 38        | 30        | 32        | 33        | <b>34</b>          | 37        | 38        | 33        | 41        | 42        | <b>38</b>          | 40        | 42        | 43        | 41        | 41        | <b>41</b>     |
| <b>0.8</b>     | <b>33</b>         | 34        | 38        | 35        | 32        | 38        | <b>35</b>          | 34        | 33        | <b>31</b> | <b>37</b> | 37        | <b>34</b>          | <b>38</b> | <b>40</b> | 40        | 34        | 38        | <b>38</b>     |
| <b>1</b>       | 34                | <b>25</b> | <b>31</b> | <b>25</b> | <b>24</b> | 33        | <b>29</b>          | <b>28</b> | <b>29</b> | 33        | 39        | 36        | <b>33</b>          | 40        | 44        | 32        | <b>33</b> | <b>35</b> | <b>37</b>     |
| <b>1.4</b>     | 38                | 31        | 35        | 27        | 29        | 41        | <b>34</b>          | 29        | 32        | 35        | 39        | <b>28</b> | <b>33</b>          | 44        | 60        | 26        | 37        | 38        | <b>41</b>     |
| <b>2</b>       | 45                | 43        | 55        | 35        | 35        | 51        | <b>44</b>          | 30        | 46        | 37        | 47        | 42        | <b>40</b>          | 42        | 49        | <b>25</b> | 37        | 36        | <b>38</b>     |
| <b>4</b>       | 72                | 61        | 67        | 59        | 54        | 53        | <b>61</b>          | 53        | 45        | 45        | 68        | 48        | <b>52</b>          | 65        | 68        | 44        | 54        | 52        | <b>57</b>     |
| <b>8</b>       | 83                | 69        | 85        | 82        | 61        | 72        | <b>75</b>          | 77        | 72        | 75        | 83        | 58        | <b>73</b>          | 68        | 85        | 60        | 80        | 72        | <b>73</b>     |
| <b>12.5</b>    | 77                | 85        | 82        | 74        | 58        | 72        | <b>75</b>          | 63        | 83        | 80        | 85        | 61        | <b>74</b>          | 76        | 82        | 78        | 70        | 62        | <b>74</b>     |
| <b>16.5</b>    | 68                | 83        | 85        | 85        | 85        | 85        | <b>&gt;80</b>      | 85        | 82        | 82        | 82        | 80        | <b>&gt;80</b>      | 80        | 73        | 85        | 83        | 77        | <b>80</b>     |
| <b>18.5</b>    | 85                | 80        | 85        | 78        | 77        | 75        | <b>80</b>          | 73        | 85        | 85        | 80        | 85        | <b>&gt;80</b>      | 78        | 85        | 83        | 85        | 85        | <b>&gt;80</b> |

Individual frequencies of most sensitive hearing are highlighted in bold. >80 indicates that no brainstem potentials were detected even at the highest tested sound pressure level of 80 dB SPL. To determine the average 85dB SPL was used when no responses could be measured at 80 dB SPL. M = male, F = female

**Table S3: Individual anaesthetic doses used during the experiments.**

| <b>Species</b>     | <b>Individual</b> | <b>Sex</b> | <b>weight<br/>(g)</b> | <b>Dosage of<br/>Ketamine<br/>(mg/kg)</b> | <b>Dosage<br/>of<br/>Xylazine<br/>(mg/kg)</b> |
|--------------------|-------------------|------------|-----------------------|---|---|
| <i>F. anselli</i>  | M1                | male       | 122                   | 9.88 (+ 5.34)                             | 2.47  |
|                    | F1                | female     | 76                    | 9.27                                      | 3.31  |
|                    | M2                | male       | 121                   | 6.61                                      | 2.48  |
|                    | F2                | female     | 97                    | 9.62 (+ 6.2)                              | 2.93  |
|                    | M3                | male       | 124                   | 7.29                                      | 2.63  |
|                    | F9                | female     | 71                    | 9.3                                       | 4.09  |
| <i>F. mechowii</i> | M4                | male       | 150                   | 4.85                                      | 2.26  |
|                    | F4                | female     | 176                   | 4.26                                      | 2.13  |
|                    | M5                | male       | 228                   | 4.82                                      | 1.97  |
|                    | F5                | female     | 180                   | 4.17                                      | 1.95  |
|                    | M6                | male       | 437                   | 4.58                                      | 1.83  |
| <i>F. micklemi</i> | F6                | female     | 78                    | 5.13                                      | 2.56  |
|                    | M7                | male       | 186                   | 5.38                                      | 2.69  |
|                    | F7                | female     | 73                    | 5.38 (+ 4.11)                             | 2.74  |
|                    | M8                | male       | 105                   | 5.26 (+ 2.87)                             | 2.39  |
|                    | F8                | female     | 73                    | 6.85                                      | 3.19  |

The low dosages were based on a published protocol for anaesthesia in mole-rats (Garcia Montero et al. 2015). Some animals required a second injection of ketamine during a session, the dosage of which is shown in brackets.