Figure S1  Choice between quinine and salt.

Innate relative preferences of larvae between 5 mM quinine and various concentrations of salt. One half of a split Petri dish is filled with agarose containing 5 mM quinine solution (QUI) and the other half with agarose containing the indicated concentration of NaCl (SALT). A relative Gustatory Index (GI$_R$) [-1; 1] is calculated as:

\[
(S-i) \quad GI_R = \frac{\#_{QUI} - \#_{SALT}}{\#_{TOTAL}}
\]

Thus, positive values indicate that animals prefer quinine, negative values indicate they prefer salt. Salt concentrations are classified as ‘low’ if the animals prefer the salt side, and as ‘high’ if they prefer the bitter side. As the larvae are indifferent when facing the choice between quinine and 0.5 M salt, this concentration is classified as ‘medium’. The concentrations of salt used in Figures 5 and 6 are indicated by arrows. For a description of the box plots see legend of Figure 1. Significant differences from zero ($P < 0.05$/9, one-sample sign tests) are indicated by shading of the boxes. (Data taken from Gerber and Hendel [2006] [loc. cit. Fig. S1], with permission from the Royal Society B © 2006.)

Figure S2

Olfactory Index (OI) values of all groups of larvae from the experiments displayed in Figure 5. The sketches below the boxes show the training procedures and test conditions; colored circles represent Petri dishes containing tastant, white circles represent tasteless, pure Petri dishes. Note that differences in OI scores between two corresponding reciprocally trained groups (e.g. the two left-most panels in A) result in Performance Index (PI) scores different from zero (see Fig. 5A, left-most panel). Also note that in half of the cases the sequence of training trials is as indicated (in the left-most panel of (A) e.g. AM+/OCT), but in the other half is reverse (e.g. OCT/AM+). For a description of the box plots see legend of Figure 1.
Significant differences from zero ($P < 0.05/10$, one-sample sign tests) are indicated by shading of the boxes.

**Figure S3**

Olfactory Index (OI) values of all groups of larvae from the experiments displayed in Figure 6. All other details as in Figure S2; for a description of the box plots see legend of Figure 1.

Significant differences from zero ($P < 0.05/6$, one-sample sign tests) are indicated by shading of the boxes.

**Figure S4**

Olfactory Index (OI) values of all groups of larvae from the experiments displayed in Figure 7. All other details as in Figure S2; for a description of the box plots see legend of Figure 1.

Significant differences from zero ($P < 0.05/10$, one-sample sign tests) are indicated by shading of the boxes.

**Figure S5**

Olfactory Index (OI) values of all groups of larvae from the experiments displayed in Figure 8. All other details as in Figure S2; for a description of the box plots see legend of Figure 1.

Significant differences from zero ($P < 0.05/6$, one-sample sign tests) are indicated by shading of the boxes.

**Figure S6**

Olfactory Index (OI) values of all groups of larvae from the experiments displayed in Figure 9. All other details as in Figure S2; for a description of the box plots see legend of Figure 1.

Significant differences from zero ($P < 0.05/4$, one-sample sign tests) are indicated by shading of the boxes.