Safety tests of insecticides inadequate for bees

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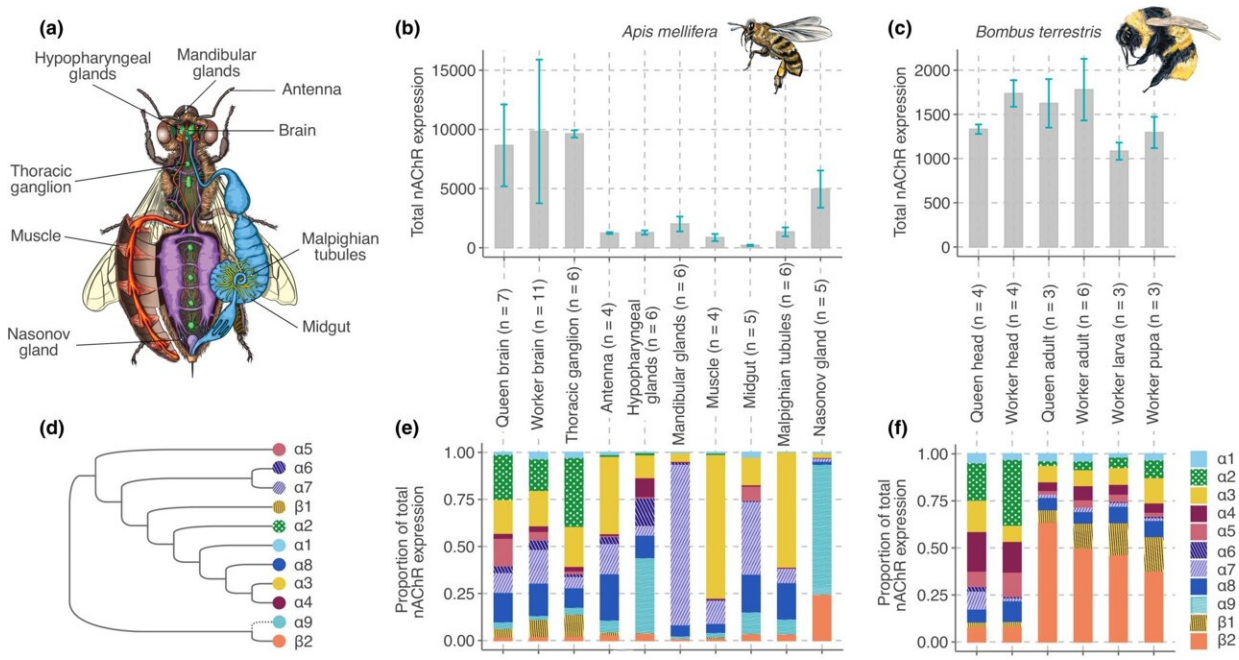

The expression of nAChR subunits differs between tissues and between castes. (a) Honey bee tissues we analyzed in gene expression comparisons of nAChR subunits. (b–c) Total combined expression of nAChR subunits in honey bee (Apis mellifera) queen brain and nine tissues of workers (b), bumble bee (Bombus terrestris) queen and worker heads, and whole bodies of worker adults, larvae, and pupae (c). The bar charts show the mean of the counts and the standard deviation. Values in b and c were normalized across samples and studies using DESeq2. (d) Topological representation of the phylogeny of nAChR subunits (Jones et al., 2006); dashed line to subunit α9 indicates that the bumble bee lacks this subunit. (e–f) The ratio of expression of nAChR subunits varies in honey bees (e; 11 genes) and bumble bees (f; 10 genes) (Wald tests, FDR