immediately before odor exposure was measured using a plate reader, and the luminescence value was measured by measuring the response value (Tx) every minute starting immediately after odor stimulation.

[0065] (2-3) Measurement of gas-phase response of olfactory receptor to fresh fruit

In the luciferase assay, a subject to be measured was placed on the back of a plate lid before the lid was placed to cover the top of the plate, sealing each well and saturating it with the aroma of the subject to be measured. Ten minutes after the sealed exposure (T10), the response value of each well was measured again using the plate reader. The strength of the response of each olfactory receptor was evaluated as a fold increase, which was expressed as T10/T0 from the screening of all 454 kinds of human olfactory receptors against pink grapefruit (Figure 1b), and the responses of the human olfactory receptor OR6B1 to various fruits were evaluated as ΔF/F0 values, which were expressed as (T10-T0)/T0 (Figure 1a).

[0066] (2-4) Screening for flavor ingredients that induce response of OR6B1

A luciferase assay was performed using a human olfactory receptor OR6B1 gene expression vector. The response value of the human olfactory receptor OR6B1 to each flavor ingredient from a library of flavor ingredients was acquired by adding or exposing 10 μL of each flavor ingredient solution in a HEPES buffer at 10 × 30 ppm to each well, and measuring the change in the response value of the luciferase activity over time, i.e., before the addition (T0) and every minute starting immediately after the addition, such as T1, T2, ..., T20. The strength of the response of the olfactory receptor was evaluated by first calculating the FIsample (MAX) value, which was determined by dividing the maximum response value of the luciferase activity that occurred after stimulation with each flavor ingredient in each well by the luciferase activity before the stimulation with each flavor ingredient, and then dividing this value by the average FIcontrol (MAX) of a control obtained by stimulation with only a solvent provided in each plate to give a normalized response value. The results of responses to all 746 kinds of flavor ingredients that were screened are shown in Figure 2, and the top ingredients that gave responses above a certain level were extracted and are shown in Table 2, along with information on their fragrance notes.