Claims

1. A method for identifying a compound that modulates bitter taste due to a potassium salt, wherein said method comprises:

a) providing a first and second cell,

wherein said first and second cell each express one or more-bitter taste receptor(s), wherein said bitter taste receptor(s) do not comprise a polypeptide tag;

b) contacting said first cell with a tastant, wherein the tastant activates the one or more of the bitter taste receptor;

c) contacting said second cell with a test compound and the tastant;

d) assaying said first and second cells for bitter taste receptor activation; and

e) comparing the bitter taste receptor activation of said first cell to the bitter taste receptor activation of said second cell;

wherein said one or more bitter taste receptor(s) is a TAS2R38 receptor and said tastant is a potassium salt, and further wherein the test compound is an inhibitor of bitter taste due to the potassium salt, if bitter taste receptor activity of said second cell is less than the bitter taste receptor activity of said first cell.

2. The method of claim1, wherein the first cell is washed after the bitter taste receptor activity assay to provide the second cell.

3. A method for identifying a compound that selectively modulates the bitter taste due to a potassium salt, wherein said method comprises:

a) providing a first and second panel of cell lines, wherein each of the first and second panels comprises cell lines that express one or more bitter taste receptor(s), wherein said receptor(s) do not comprise a polypeptide tag;

b) contacting each cell line in the first panel with a tastant, wherein the tastant activates bitter taste receptors;

c) contacting each cell line in the second panel with a test compound and the tastant;

d) assaying each cell line in the first and second panels for bitter taste receptor activation; and

wherein, the test compound is a selective inhibitor of bitter taste due to the potassium salt if the bitter taste receptor activity of said bitter taste receptors is different in the second panel compared to the first panel and further wherein said bitter taste receptor is a TAS2R38 receptor and said bitter tastant is a potassium salt.

4. The method of claim 3, wherein the first and second panel each further comprises cell lines that express at least one second bitter taste receptor, wherein said second bitter taste receptor does not comprise a polypeptide tag and further wherein said second bitter taste receptor is at least one TAS2R39 receptor and is expressed in at least one cell line.

5. The method of claim 3, wherein the cell lines from the first panel are washed after the bitter taste receptor activity assay to provide the second panel of cell lines.

6. The method of claim 1, wherein said method further comprises washing said first cell to generate said second cell.

7. The method of claim 1 or 3, wherein the bitter taste receptor is complexed to a G protein.

8. The method of claim 1 or 3, wherein bitter taste activity is determined by measuring intracellular calcium concentration.

9. The method of claim 1 or 3, further comprising a second bitter taste receptor selected from the group consisting of TAS2R1, TAS2R4, TAS2R9, TAS2R13, TAS2R14, TAS2R16, TAS2R44 and TAS2R60.

10. The method of claim 1 or 3, wherein the TAS2R38 is a PAV TAS2R38.

11. The method of claim 1 or 3, wherein the potassium salt is selected from KCL, potassium lactate, Acesulfame K, potassium benzoate, potassium sorbate, potassium nitrate, potassium gluconate, potassium phosphate and potassium sulfate.

12. The method of claim 1or 3, wherein the potassium salt is KCl.

13. The method of claim 1 or 3, wherein the potassium salt is potassium lactate.