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| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **COMPOUND** | **FORM** | **MODE OF ACTION** | **SOURCE** | **APPLICATION / PROPERTIES** | **REFERENCE** | | | | | | |
| **SOUR TASTANT / MODIFIER**  **Agonist - Citric acid Acetic acid, Hydrochloric acid, Sulfuric acid and Tartaric acid** | | | | | |
| Bortezomib | Enhances the sour taste sensitivity | It amplified the expression of PKD2L1 to enhance the sour taste sensitivity of bortezomib in mice  . | * A pyrazine and boronic acid reversible proteasome inhibitor | * Used to study the sour taste disorder | Ohishi *et al.* 2017(138) |
| Anionic acid species | Inhibits sour taste of beer | The anionic acid species has no sour taste, but reduce the effects of hydroxyl or conjugated group in anionic acid species and diminish sour taste | * Free hydrogen ions and undissociated hydrogen ions in protonated acid species | * Served as a better mechanism to reduce sourness of beer | Li *et al.* 2015(167) |
| **FAT TASTANT / MODIFIER**  **Agonist - Grifolic acid (GA), Linoleic acid, α-linolenic acid (ALA), Docosahexaenoic acid (DHA), Eicosapentaenoic acid (EPA)** | | | | | |
| Zizyphin, purified | Fat taste mimetic | Zizyphin might exert its action via bile acid receptor Takeda-G-protein-receptor-5 in hTBC | * *Zizyphus lotus* | * Anti-diabetic and Anti-proliferative * Anti-apoptotic and anti-oxidant | Murtaza *et al.* 2017(109) |
| Mercaptoacetate | β-oxidation blocker | MA inhibits the β-oxidation of fatty acid chains by attenuating acyl-CoA dehydrogenase activity | * Produced by the reaction between chloroacetic acid and potassium hydrogen sulfide | * Reduces fatty acid oxidation | Matsumura *et al.* 2008(168)  Darling *et al.* 2014(169) |
| Oleoylethanolamide | Fat taste modifier | OEA acts as an effective agonist of PPAR-α, that modifies the expression of fatty acid translocase CD36 | * A fatty acid naturally occurring in ethanolamide lipid | * Regulate a plethora of physiological functions * Combines with PPAR-α to enable fat oxidation in the liver | Sihag *et al.* 2018(106) |
| Xanthan gum | Fat replacer/texturizer/texture modifier | It had significantly lower TBARS values, Thus, the addition of xanthan gum could be a valuable alternative to improve the quality of low fat food products | * Fermentation of glucose, sucrose, or lactose | * Could be a suitable fat replacer in goshtaba * It helps to prevent oil separation by stabilizing the [emulsion](https://en.wikipedia.org/wiki/Emulsion), although it is not an [emulsifier](https://en.wikipedia.org/wiki/Emulsifier#Emulsifiers) | Rather *et al.* 2015(170) |
| Inulin | Fat replacer/texturizer/texture modifier | The inclusion of inulin in cheese as a fat replacer has different influences on the rheological and textural properties | * [Chicory](https://en.wikipedia.org/wiki/Chicory) root, grown as a root crop in Holland | * Nutritionally it has health-promoting effects that include reduced calorie value, and prebiotic effects | Berizi *et al.* 2015(171) |
| **KOKUMI TASTANT / MODIFIER**  **Agonist -**  **Basic peptides and Polyamines** | | | | | |
| γ-L-glutamyl peptides | kokumi-enhancing molecules | Perceived through the calcium-sensing receptor (CaSR) | * Soybean seeds and edible bean *Phaseolus vulgaris L* | * Enhancing mouthfulness and complex taste continuity of the cheese | Toelstede  *et al.* 2009(172) Maruyama *et al.* 2012(173) |
| Leucyl dipeptides | Kokumi enriching dipeptides | Bitter-tasting leucyl dipeptides could impart kokumi taste at low concentrations | * Purified from yeast extract | * Ala-Leu was found to be the kokumi compound present in the blank chicken broth | Liu  *et al.* 2015(174) |
| Raffinose and Stachyose | kokumi-enhancing molecules | Exhibit a synergistic effect in enhancing kokumi taste sensation of γ-glutamyl peptides | * Soybean (*Glycine max (L.) Merr*.) | * Soybean extracts or soymilk can be used to enhance the kokumi taste sensation in food products | Shibata *et al.* 2017(175) |
| Oxylipins | kokumi-enhancing molecules | Lipophilic acetylene moiety is a structural key element involved in the kokumi modulating activity of oxylipins | * Thermally processed avocado pulp *(Persea. americana Mill)* | * Oxylipins were discovered to induce a kokumi enhancing activity in sub-bitter threshold concentrations | Degenhardt *et al.* 2010(176) |

hTBC, Human taste bud cells; MA, Mercaptoacetate; OEA, Oleoylethanolamide; PPAR-α, Peroxisome proliferator-activated receptor alpha; CD36, Cluster of differentiation; TBARS, Thiobarbituric acid reactive substances; PKD2L1, Polycystin 2 Like 1 - transient receptor potential cation channel.

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