INTISARI

UJI DAYA ULANG SENSOR RASA BERBASIS MEMBRAN LIPID/POLYMER TERHADAP SAMPEL RASA PAHIT

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Sensor rasa berbasis membran lipid/polimer dapat digunakan dalam mengukur kepahitan suatu zat rasa berupa larutan, yang ditunjukkan dalam nilai potensial akibat adsorpsi (CPA). Penelitian ini dilakukan dengan tujuan menentukan daya ulang, selektivitas, linearitas, dan rasio potensial residu sensor rasa berbasis membran lipid/polimer terhadap sampel rasa pahit (natrium diklofenak). Membran lipid/polimer bermuatan positif dibuat dengan lipid *tetradodecylammonium bromide* (TDAB) dan plasticizer *2-nitrophenyl octyl ether* (NPOE) pada konsentrasi 0,1 wt%. Daya ulang sensor rasa berbasis membran lipid/polimer dikaji dengan melakukan pengukuran selama 10 hari pada larutan sampel rasa pahit (natrium diklofenak). Respon yang dihasilkan menunjukkan stabilitas sensor rasa yang baik selama pengukuran, yang ditunjukkan melalui nilai CPA dengan nilai yang relatif baik pada -18,2 ± 2,7 mV. Pencucian membran lipid/polimer dengan larutan referensi (30 mM KCl, 0,3 mM asam tartarat) selama pengujian, menunjukkan rasio potensial residu 0,8% dan 0,3% pada konsentrasi 0,1 dan 3 mM natrium diklofenak. Persentase rasio CPA <1% menunjukkan bahwasannya larutan referensi dapat membersihkan membran lipid/polimer sepenuhnya.

Kata kunci : daya ulang, membran lipid/polimer, rasio potensial residu, sensor rasa.

ABSTRACT

REPEATABILITY OF LIPID/POLYMER MEMBARNES BASED TASTE SENSOR ON BITTERNESS TASTE

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A lipid/polymer membrane based taste sensor can be used to measure the bitterness of a taste substance in the form of a solution, which is indicated in the value of potential caused by adsorption (CPA). This study was conducted with the aim of determining the repeatability, selectivity, linearity, and residual voltage ratio of lipid/polymer membrane based taste sensor towards bitter taste (diclofenac sodium). Positively charged lipid/polymer membrane are created using tetradodecylammonium bromide (TDAB) lipid and 2-nitrophenyl octyl ether (NPOE) plasticizer at a concentration 0.1 wt%. The repeatability of a lipid/polymer membrane based taste sensor was studied by measuring it for 10 days in bitter taste solution (diclofenac sodium). The resulting response shows good stability of the taste sensor during measurement, as indicated by CPA value with a relatively good value at -18 ± 3 mV. Washing of the lipid/polymer membrane with reference solution (30 mM KCl, 0.3 mM tartaric acid) during testing, indicates residual voltage ratio of 0.8% and 0.3% at the concentration 0.1 and 3 mM diclofenac sodium. The percentage ratio of CPA <1% indicate that the reference solution can completely clean the lipid/polymer membrane.

Keywords : repeatability, lipid/polymer membran, ratio residual voltage, taste sensor.