

## INTISARI

### **Pengaruh Komposisi Membran Lipid Terhadap Respons Sensor Lidah Elektronik Pada Rasa Pahit**

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Sensor lidah elektronik digunakan untuk mengevaluasi sensori rasa untuk deteksi kualitas kepahitan dalam industri farmasi atau obat – obatan. Tingkat kerusakan nilai CPA ditekan ketika PADE ditambahkan 33% dari komposisi sensor konvensional dengan nilai relatif sekitar 25 mV pada kina hidroklorida 0,1 mM, namun sensitivitas nya tidak memenuhi syarat respons lebih dari 30 mV. Lipid PADE yang biasa digunakan pada sensor konvensional sulit diperoleh. Penelitian ini menguji pengaruh komposisi PAEE sebagai pengganti PADE dan pengaruh komposisi TBAC terhadap nilai respons sensor. Sensor divariasikan konsentrasi lipid PAEE nya sebesar 26%,33%,40% dan pemlastisnya sebesar 17%,25%,33% mV dari komposisi lipid konvensional. Modifikasi komposisi membran sensor dianalisa dengan melihat nilai relatif, sensitivitas, stabilitas, dan selektivitas. Dari hasil analisa didapatkan bahwa konsentrasi lipid PAEE 33% dari komposisi lipid konvensional mempunyai nilai relatif paling tinggi terhadap kina hidroklorida sebesar 25,7 mV dan memiliki sensitivitas sebesar 36,2 mV. Pada uji stabilitas 14 hari, sensor konsentrasi PAEE 17% memiliki stabilitas terbaik dengan rasio pengurangan respons 3,11% dari nilai respons awal. Variasi konsentrasi TBAC menunjukkan adanya peningkatan nilai relatif terhadap pengurangan konsentrasi dan tidak menunjukkan perbedaan signifikan pada stabilitas membran.

**Kata Kunci** : Sensor rasa, membran lipid, respons, kina hidroklorida, PAEE, TBAC.

## ABSTRACT

### **The Effect of Lipid Membran Composition on the Sensory Response of Electronic Tongue to Bitter Taste**

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Electronic tongue sensors are used to evaluate taste sensors for bitterness quality detection in the pharmaceutical or drug industry. The level of damage to the CPA value was suppressed when PADE was added to 33% of the conventional sensor composition with a relative value of around 25 mV at 0,1 mM quinine hydrochloride, but the sensitivity did not meet the response requirements of more than 30 mV. The PADE lipids commonly used in conventional sensors are difficult to obtain. This research examines the effect of PAEE composition as a substitute for PADE and the effect of TBAC composition on sensor response values. The sensor varied the PAEE lipid concentration by 26%, 33%, 40% and the plasticizer by 17%, 25%, 33% mV from the conventional lipid composition. Modifications of the sensor membrane composition were analyzed by looking at the relative values, sensitivity, stability and selectivity. From the analysis results it was found that the PAEE lipid concentration of 33% of the conventional lipid composition had the highest relative value to quinine hydrochloride of 25,7 mV and had a sensitivity of 36,2 mV. In the 14 day stability test, the 17% PAEE concentration sensor had the best stability with a response reduction ratio of 3,11% from the initial response value. Varying TBAC concentrations showed an increase in value relative to reducing concentrations and did not show significant differences in membrane stability.

**Keywords :** Taste sensor, lipid membran, response, quinine hydrochloride, PAEE, TBAC.