

Oksibenzon dan titanium dioksida dikenal sebagai senyawa aktif yang memiliki aktivitas perlindungan terhadap sinar *ultra violet*. Oksibenzon dan titanium dioksida dibuat dalam bentuk sediaan krim agar mudah diaplikasikan sehari-hari. Tujuan penelitian ini yaitu mengoptimasi sediaan krim *o/w* oksibenzon dan titanium dioksida dengan variasi emulgator TEA stearat dan setil alkohol.

Delapan *run* krim *o/w* oksibenzon dan titanium dioksida diformulasi dengan variasi TEA Stearat dan setil alkohol. Evaluasi sifat fisik krim meliputi organoleptis, homogenitas, viskositas, daya sebar, daya lekat, pH, dan tipe emulsi. Hasil penelitian tersebut selanjutnya dianalisis menggunakan metode *simplex lattice design* dengan *software Design Expert version 9.0.4* untuk memperoleh formula optimum. Stabilitas fisik formula optimum krim diamati selama penyimpanan 4 minggu. Pengujian nilai SPF secara *in vivo* dilakukan pada kelinci betina galur *New Zealand White* terinduksi senyawa 8-metoksiprosalen.

Hasil penelitian menghasilkan formula optimum krim *o/w* oksibenzon dan titanium dioksida dengan proporsi 8,93% TEA stearat dan 2,07% setil alkohol. Formula optimum krim selama penyimpanan 4 minggu menghasilkan sediaan krim yang stabil pada respon sifat fisik viskositas dan daya lekat, namun tidak stabil pada respon sifat fisik daya sebar. Pengujian aktivitas tabir surya secara *in vivo* krim *o/w* kombinasi oksibenzon dan titanium dioksida menghasilkan nilai SPF 12.

**Kata kunci** : oksibenzon, titanium dioksida, tabir surya, *in vivo*

Oxybenzone and titanium dioxide are well known as ultra violet protection agents. Oxybenzone and titanium dioxide were formulated as cream preparations to ease the daily use. This study aimed to optimize cream o / w oxybenzone and titanium dioxide with triethanolamine (TEA) stearate and cetyl alcohol variation.

Eight runs of cream o / w oxybenzone and titanium dioxide were formulated with TEA stearate and cetyl alcohol variation. Cream physical properties evaluation consist of organoleptic, homogeneity, viscosity, spreadability, adhesiveness, pH and emulsion type. The research then analyzed using simplex lattice design using software Design Expert version 9.0.4 to get the optimum formula. The physical stability of cream optimum formula was observed during 4 weeks storage. In vivo SPF value testing was conducted against New Zealand White strain female rabbit induced by 8-methoxypsoralen.

The result showed that the proportion of 8,93% TEA stearate dan 2,07% cetyl alcohol produced the optimum formula cream o / w oxybenzone and titanium dioxide. The cream optimum formula during 4 weeks storage showed stable cream on viscosity and adhesiveness physical properties, while not stable on spreadability aspect. The cream o / w oxybenzone and titanium dioxide sunscreen activity testing through in vivo method produced SPF value 12.

**Keywords** : oxybenzone, titanium dioxide, sunscreen, in vivo