

## INTISARI

Masker gel *peel off* merupakan kosmetik topikal yang praktis digunakan karena dapat dikelupas secara manual tanpa perlu dibilas. Masker ini dapat meningkatkan kelembapan kulit serta meningkatkan efek zat aktif pada epitel kulit karena oklusifitas lapisan polimer yang terbentuk. Masker wajah alami telah banyak beredar di pasaran karena ampuh untuk menghilangkan kerutan pada wajah. Kerutan sebagai salah satu tanda penuaan kulit dapat disebabkan oleh efek sinergis dari penuaan kronologis, *photoaging*, defisiensi hormonal dan faktor lingkungan. Antioksidan dapat meredakan penuaan kulit dengan memainkan peran sebagai agen pereduksi yang menetralkan *reactive oxygen species* (ROS) yang terbentuk akibat paparan UV. Biji labu (*Cucurbita pepo* L.) banyak mengandung senyawa antioksidan seperti tokoferol dan karotenoid. Penelitian ini bertujuan menentukan formula optimum masker gel *peel off* minyak biji labu dengan variasi komposisi *gelling agent* serta mengetahui aktivitas *anti aging* dari masker gel *peel off* minyak biji labu.

Masker gel *peel off* dibuat dengan variasi komposisi PVA dan HPMC sebagai *gelling agent* dan dioptimasi komposisinya menggunakan metode *Simplex Lattice Design* dengan *software Design Expert* versi 13 untuk memperoleh formula optimum. Aktivitas *anti aging* diukur dengan uji aktivitas penghambatan enzim kolagenase secara *in vitro*.

Berdasarkan hasil penelitian diperoleh formula optimum yang terdiri dari PVA 7,4% b/v dan HPMC 2,6% b/v. Formula optimum memiliki viskositas 20070,67±67,31 cP, daya sebar 5,47±0,15 cm, daya lekat 1,02±0,06 detik, pH 6,53±0,05, dan waktu kering 55,33±2,52 menit. Karakteristik formula optimum masker gel *peel off* minyak biji labu tidak berbeda signifikan selama 4 minggu penyimpanan. Minyak biji labu 10% b/v memiliki aktivitas penghambatan enzim kolagenase sebesar 80,68%, sedangkan sediaan masker gel *peel off* minyak biji labu 10% b/v memiliki aktivitas penghambatan enzim kolagenase sebesar 43,90%.

**Kata kunci:** masker gel *peel off*, biji labu, *anti aging*

## **ABSTRACT**

*Peel off gel mask are topical cosmetics that are practical to use because they can be peeled off manually without rinsing. This mask can increase skin moisture and increase the effect of active substances on the skin epithelium due to the occlusiveness of the polymer layer that is formed. There are many natural face masks on the market because they are effective for removing wrinkles on the face. Wrinkles as a sign of skin aging can be caused by a synergistic effect of chronological aging, photoaging, hormonal deficiencies and environmental factors. Antioxidants can reduce skin aging by playing the role of reducing agents that neutralize reactive oxygen species (ROS) formed due to exposure to UV rays. Pumpkin seeds (Cucurbita pepo L.) contain lots of antioxidant compounds such as tocopherols and carotenoids. This study aims to determine the optimum formula for peel off gel mask with pumpkin seed oil with variations in the composition of the gelling agent and to determine the anti-aging activity of peel off gel mask.*

*The peel off gel mask was made with variations in the composition of PVA and HPMC as gelling agents and the composition was optimized using the Simplex Lattice Design method with Design Expert software version 13 to obtain the optimum formula. Anti-aging activity was measured by in vitro collagenase enzyme inhibition assay, expressed as % enzyme inhibitoin.*

*Based on the results of this study, the optimum formula was obtained consisting PVA 7.4% w/v and HPMC 2.6% w/v. The optimum formula has a viscosity of  $20070.67 \pm 67.31$  cP, spreadability of  $5.47 \pm 0.15$  cm, adhesion of  $1.02 \pm 0.06$  seconds, pH of  $6.53 \pm 0.05$ , and drying time of  $55.33 \pm 2.52$  minutes. The characteristics of the optimum formula for the pumpkin seeds oil peel off gel mask did not differ significantly during 4 weeks of storage. Pumpkin seed oil 10% w/v has a collagenase enzyme inhibitory activity of 80,68%, while the pumpkin seeds oil peel off gel mask in concentration of 10% w/v has collagenase enzyme inhibitory activity of 43,90%.*

**Keywords: peel off gel mask, pumpkin seeds, anti aging**