ABSTRAK

Perkembangan gigi pada masa embrio merupakan proses kompleks yang membutuhkan nutrsi yang cukup sehingga terbentuknya jaringan gigi yang sehat. *Kallikrein-related peptidase-4 (KLK-4)* merupakan serine proteinase yang disekresikan ameloblas selama tahap transisi dan maturasi dalam proses amelogenesis yang berfungsi mendegradasi protein matriks sehingga enamel mencapai kekerasan akhir. Susu ibu hamil mengandung berbagai nutrisi yang diharapkan dapat meningkatkan ekspresi *KLK-4* pada sel ameloblas dalam proses perkembangan gigi. Penelitian ini bertujuan untuk mengetahui pengaruh susu ibu hamil terhadap ekspresi *KLK-4* pada sel ameloblas dalam proses tumbuh kembang gigi.

Penelitian dilakukan secara *Laboratories Experimental* dengan *Post test only control group design.* Sampel penelitian berjumlah 12 ekor mencit betina bunting *(Mus Musculus L.)* dibagi menjadi 2 yaitu kelompok kontrol (diberi aquades steril) dan kelompok perlakuan (diberi susu ibu hamil + aquades steril). Pengukuran ekspresi *KLK-4* dilakukan pada kebuntingan hari ke-18. Data dianalisis menggunakan uji *Independent sampel t-test*.

Hasil penelitian menunjukan rerata jumlah ekspresi *KLK-4* pada kelompok perlakuan lebih tinggi daripada kelompok kontrol. Berdasarkan uji *Independent sampel t-test* menunjukkan bahwa terdapat perbedaan yang signifikan dengan nilai p=0,017.

Kesimpulan dari penelitian ini, susu ibu hamil dapat memberikan pengaruh terhadap ekspresi *Kallikrein-related peptidase-4 (KLK-4)* pada sel ameloblas dalam proses tumbuh kembang gigi janin mencit.

Kata Kunci : *Kallikrein-related peptidase-4 (KLK-4),* Susu ibu hamil, Tumbuh kembang gigi

ABSTRACT

Tooth development during embryonic period is a complex process that needs enough nutrition for the formation of healthy dental tissue. Kallikrein-related peptidase-4 (KLK-4) is a serine proteinase that are secreted by ameloblast during transition and maturation stages in the amelogenesis process which functions to degradate protein matrixs so enamel reach final hardness. Pregnancy milk contains various nutritions is expected that can increase KLK-4 expression of ameloblast cell in the tooth development. This study aims to determine the impact of pregnancy milk against the KLK-4 expression of ameloblast cell in the tooth development process.

The research used an experimental laboratories with Post test only control group design. 12 pregnant female mice (Mus Musculus L.) are used and divided into 2 groups namely control group (given sterile aquades) and treatment group (given pregnancy milk + sterile aquades). KLK-4 expression measurements was done on the 18th day of pregnancy period. The data were analyzed using Independent sampel t-test.

The result of this study showed that the average amounts of KLK-4 expression in the treatment group are higher than the control group. Based on Independent sampel t-test there were significant difference with the value of p=0,017.

The conclusion of this research was that the pregnancy milk could influence the Kallikrein-related peptidase-4 (KLK-4) expression of ameloblast cell in the mice fetus's tooth development.

Keywords : *Kallikrein-related peptidase-4 (KLK-4), Pregnancy milk, Tooth development*