

# Analisis Karakteristik Sel Stromal Pulpa Gigi Permanen dan Gigi Sulung Pasien Celah Bibir dan Palatum dan Subjek Normal Berdasarkan Ekspresi Gen EN1 = Permanent and Deciduous Teeth's Pulp Stromal Cells' Characteristics Analysis of Cleft Lip and Palate's Patients and Normal Subjects Based on the EN1 Gene Expression

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## Abstrak

Latar Belakang: Gen Homeobox adalah gen pengatur perkembangan antara lain morfogenesis sel dengan menyandikan faktor transkripsi pada tahap awal embriogenesis dan diferensiasi sel. Gen EN1 adalah gen Homeobox yang berperan dalam proses pembentukan tulang. Penelitian terbaru menunjukkan bahwa gen EN1 mengalami overexpression signifikan pada sel stromal pulpa gigi permanen pasien celah bibir dan palatum. Namun, pengaruh gen EN1 pada karakteristik sel stromal pulpa gigi sulung dan permanen subjek normal dan pasien celah bibir dan palatum belum diketahui secara pasti. Tujuan: Melakukan verifikasi karakteristik sel stromal gigi permanen pasien celah bibir dan palatum dan subjek normal serta sel stromal gigi sulung pasien celah bibir dan palatum melalui ekspresi gen EN1. Metode: Sampel RNA DPSC subjek normal (n=2), DPSC CLP (n=2), SHED CLP (n=2) diperoleh dari bahan biologis tersimpan Laboratorium Oral Biologi Fakultas Kedokteran Gigi Universitas Indonesia. Kemudian, dilakukan sintesis cDNA dan standarisasi konsentrasi sampel hasil sintesis cDNA. Selanjutnya, ekspresi gen EN1 dan gen referensi GAPDH diuji dengan quantitative reverse-transcription PCR (RT-qPCR). Hasil: Tidak terdapat perbedaan bermakna ekspresi gen EN1, antara DPSC subjek normal dengan DPSC CLP (p0,05) sedangkan terdapat perbedaan bermakna ekspresi gen EN1 antara sel DPSC CLP dengan sel SHED CLP (p,05). Kesimpulan: Tidak terdapat perbedaan karakteristik sel stromal pulpa gigi permanen antara subjek normal dan pasien celah bibir dan palatum, sedangkan terdapat perbedaan antara sel stromal pulpa gigi sulung dan sel stromal pulpa gigi permanen pada pasien celah bibir dan palatum.

.....Background: Homeobox gene is a group of master regulatory developmental genes which are responsible for encode transcription factor in the early phase of embryogenesis and for cell differentiation. EN1 gene is a Homeobox gene that has a role in bone formation. The latest research discovered that EN1 gene was significantly overexpressed in Permanent Teeth's Stromal Cell of Cleft Lip and Palate Subjects. However, the effect of EN1 gene on the characteristics of Permanent and Deciduous Teeth's Stromal Cell of Normal Subjects and Cleft Lip and Palate Subjects still remain unknown. Objective: To Verify on the characteristic of the Permanent Teeth's Stromal Cell between Cleft Lip and Palate Patients and Normal Subjects as well as the characteristic between the Permanent Teeth's Stromal Cell of Cleft Lip and Palate Patients and Deciduous Teeth's Stromal Cell of Cleft Lip and Palate Patients. Methods: DPSC of normal subjects' RNA sample (n=2), DPSC of CLP Patient's RNA sample (n=2), SHED of CLP Patients' RNA sample (n=2) obtained from Archived Biological Materials in Laboratorium. Subsequently, synthesis the RNA sample into cDNA sample and standardize the cDNA concentration sample. Afterwards, perform RT-PCR assay to validate EN1 and GAPDH reference gene expression. Results: No statistically significant difference of the EN1 gene expression between the Permanent Teeth's Stromal Cell between Cleft Lip and Palate Patients and Normal Subjects (p0,05) and there is statistically significant difference of the EN1 gene

expression between the Permanent Teeth's Stromal Cell of Cleft Lip and Palate Patients and Deciduous Teeth's Stromal Cell of Cleft Lip and palate Patients. (p 05) Conclusion: There is no characteristic difference between the Permanent Teeth's Pulp Stromal Cell between Cleft Lip and Palate Patients and Normal Subjects, Meanwhile There is characteristic difference between the Deciduous Teeth's Pulp Stromal Cell of Cleft Lip and Palate Patients and the Permanent Teeth's Pulp Stromal Cell of Cleft Lip and Palate Patients.