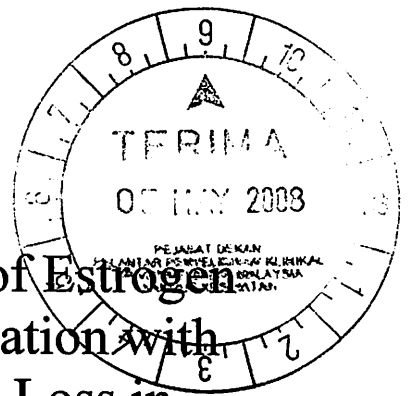


# FINAL REPORT



## Studies to Investigate the Prevalence of Estrogen Receptor Polymorphism & its Association with Alveolar Bone Loss & Early Tooth Loss in Postmenopausal Women

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PEJABAT PENGURUSAN & KREATIVITI PENYELIDIKAN  
RESEARCH CREATIVITY AND MANAGEMENT OFFICE [RCMO]

**LAPORAN AKHIR PROJEK PENYELIDIKAN JANGKA PENDEK**  
**FINAL REPORT OF SHORT TERM RESEARCH PROJECTS**

- 1) **Nama Ketua Penyelidik :**  
*Name of Research Leader :*

Ketua Penyelidik <i>Research Leader</i>	PTJ <i>School/Centre</i>
DR ASIA REHMAN	PUSAT PENGAJIAN SAINS PERGIGIAN

- Nama Penyelidik Bersama**  
*(Jika berkaitan) :*  
*Name/s of Co-Researcher/s*  
*(if applicable)*

Penyelidik Bersama <i>Co-Researcher</i>	PTJ <i>School/Centre</i>
Dr. Nizam Abdullah	PUSAT PENGAJIAN SAINS PERGIGIAN
Azlina Ahmad	PUSAT PENGAJIAN SAINS PERGIGIAN

- 2) **Tajuk Projek :**  
*Title of Project:*

Studies to Investigate the Prevalence of Estrogen Receptor Polymorphism & its Association with Alveolar bone Loss & Early Tooth Loss in Postmenopausal Women

- 3) **Abstrak untuk penyelidikan anda**  
(Perlu disediakan di antara 100 – 200 perkataan di dalam Bahasa Malaysia dan Bahasa Inggeris. Ini kemudiannya akan dimuatkan ke dalam Laporan Tahunan Bahagian Penyelidikan & Inovasi sebagai satu cara untuk menyampaikan dapatan projek tuan/puan kepada pihak Universiti & luar).

*Abstract of Research*  
(Must be prepared in 100 – 200 words in Bahasa Malaysia as well as in English. This abstract will later be included in the Annual Report of the Research and Innovation Section as a means of presenting the project findings of the researcher/s to the university and the outside community)

## Abstrak

Pengurangan penghasilan dan perembesan estrogen pada wanita menopause boleh membawa kepada kelesapan tulang pada kadar yang cepat dan mengurangkan ketumpatan mineral tulang. Pengurangan ketumpatan mineral tulang secara sistemik boleh memberi kesan kepada tulang rahang terutamanya kelesapan tulang mandible. Disamping faktor persekitaran, faktor genetik umpamanya polimorphism pada gen reseptor estrogen juga dilaporkan boleh mempengaruhi kelesapan tulang alveolus.

Objektif penyelidikan ini adalah untuk mengkaji taburan polimorphism pada gen reseptor estrogen dikalangan wanita Melayu menopause (PMW) dan kaitannya dengan kelesapan tulang alveolus. Seramai 64 orang PMW Pesakit Luar Klinik Pergigian Hospital Universiti Sains Malaysia, Kelantan telah mengambil bahagian. Pemeriksaan oral dan pengukuran kelesapan tulang alveolus telah dilakukan. Genotip telah dikenalpasti melalui teknik penyekatan enzim menggunakan dua enzim penyekat iaitu PvuII dan XbaI ke atas tindakbalas rantaian polimerase. Genotip reseptor estrogen digambarkan sebagai P atau p (PvuII) dan X atau x (XbaI) dengan huruf kecil menunjukkan kehadiran kawasan penyekatan.

Hasil kajian ini menunjukkan bahawa frekuensi varian alel heterozygous (PpXx) pada PMW adalah tinggi. Akan tetapi keadaan ini tidak menunjukkan sebarang kaitan yang signifikan antara polimorphism pada gen reseptor estrogen dan kelesapan alveolar bone. Oleh yang demikian polimorphism pada gen reseptor estrogen tidak boleh dijadikan penanda genetik bagi kelesapan tulang alveolar dikalangan PMW.

## **Abstract**

Depletion of estrogen production and secretion in postmenopausal women may lead to rapid bone loss and decreased bone mineral density (BMD). Decreased systemic BMD may also affect oral bone particularly mandibular bone resorption. Although several environmental factors influence bone loss, genetic contribution particularly estrogen receptor gene (ERG) polymorphism had been reported.

The objectives of this study were to investigate the distribution of ERG polymorphisms in postmenopausal Malay women (PMW) and to detect the association of the polymorphisms to alveolar bone resorption. Sixty four PMW were recruited from the Out Patient Dental Clinic, Hospital Universiti Sains Malaysia, Kelantan. Oral examination and alveolar bone resorption measurement were performed on these study subjects. Genotyping was done through the restriction cleavage of polymerase chain reaction-amplified genomic DNA with the two restriction enzymes, PvuII and XbaI. Estrogen receptor genotypes were represented as P or p (PvuII) and X or x (XbaI) with the lower case letters signifying the presence of the restriction site.

The results of this study indicated a high frequency of heterozygous allelic variant (PpXx) in PMW. However no significant association between ERG polymorphisms and alveolar bone resorption was observed. Therefore ERG polymorphisms may not be a genetic marker for the alveolar bone resorption in PMW.

- 4) Sila sediakan Laporan teknikal lengkap yang menerangkan keseluruhan projek ini.  
 [Sila gunakan kertas berasingan]  
*Kindly prepare a comprehensive technical report explaining the project  
 (Prepare report separately as attachment)*

Senaraikan Kata Kunci yang boleh menggambarkan penyelidikan anda :  
*List a glossary that explains or reflects your research:*

Bahasa Malaysia

Bahasa Inggeris

Estrogen

Estrogen

.....  
 Wanita Putus Haid

.....  
 Postmenopausal Women

.....  
 Kelesapan tulang alveolus

.....  
 Alveolar Bone Loss

.....  
 Polimorphism Pada Gen Reseptor Estrogen

.....  
 Estrogen Receptor Gene Polymorphism

- 5) **Output Dan Faedah Projek**  
*Output and Benefits of Project*

- (a) \* **Penerbitan (termasuk laporan/kertas seminar)**  
*Publications (including reports/seminar papers)*  
*(Sila nyatakan jenis, tajuk, pengarang, tahun terbitan dan di mana telah diterbit/dibentangkan).*  
*(Kindly state each type, title, author/editor, publication year and journal/s containing publication)*

**SEPERTI LAMPIRAN ( APPENDIX –I )**

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- \* Sila berikan salinan  
 \* *Kindly provide copies*