

**EKSPRESI OSTEOPONTIN DAN OSTEONECTIN SETELAH
PEMBERIAN KOLAGEN SISIK IKAN GURAMI (*OSPHRONEMUS
GOURAMY*) PADA TIKUS WISTAR (*RATTUS NORVEGICUS*)**

***OSTEOPONTIN AND OSTEONECTIN EXPRESSION AFTER PROVISION
OF GURAMI FISH COLLAGEN (*OSPHRONEMUS GOURAMY*) ON
WISTAR RATS (*RATTUS NORVEGICUS*)***

ABSTRACT

Introduction: Periodontal disease such as periodontitis in which bone damage occurs which can result in tooth loss by itself from the mouth. One type of treatment in patients with Periodontitis is periodontal flap surgery by adding graft material, with the aim of regenerating damaged periodontal tissue. The development of Tissue Engineering is currently advancing rapidly, various tissue engineering materials in the periodontal field have been developed with the aim of achieving periodontal tissue regeneration. Gouramy fish scales which are a waste material turned out to have potential as tissue engineering materials because of the content of collagen which is useful for the process of bone tissue regeneration. Increased bone regeneration is characterized by increased expression of osteoblast bone formation cell markers including osteopontin and osteonectin. **Objective:** To find out whether there is an increase in osteopontin and osteonectin after the application of collagen derived from extracts of gouramy fish (*Osphronemus gouramy*). **Result:** The results showed that the mean number of osteopontin and osteonectin expression in the treatment group of gouramy scales increased significantly ($p < 0.05$) in the treatment of collagen gouramy scales on day 14 **Conclusions:** Collagen can accelerate the healing process by increasing osteogenesis, one of which is characterized by increased osteopontin and osteonectin as osteoblast markers.

Key words: Tissue Engineering, Fish scale, Osteopontin, Osteonectin

ABSTRAK

Pendahuluan: Periodontitis dapat menyebabkan hilangnya gigi karena adanya kehilangan tulang yang terjadi. Salah satu jenis perawatan pada pasien dengan periodontitis yakni operasi flap periodontal dengan menambahkan bahan graft, dengan tujuan regenerasi jaringan periodontal yang rusak. Berbagai bahan rekayasa jaringan di bidang periodontal telah dikembangkan dengan tujuan mencapai regenerasi jaringan periodontal. Sisik ikan gurami yang merupakan bahan limbah ternyata memiliki potensi sebagai bahan rekayasa jaringan karena kandungan kolagen yang berguna untuk proses regenerasi jaringan tulang. Peningkatan regenerasi tulang ditandai dengan peningkatan ekspresi penanda sel pembentukan tulang osteoblas termasuk osteopontin dan osteonektin. **Tujuan:** Untuk mengetahui apakah ada peningkatan ekspresi osteopontin dan osteonectin setelah aplikasi kolagen yang berasal dari ekstrak sisik ikan gurami (*Osphronemus gouramy*). **Hasil:** Hasil penelitian didapatkan data bahwa jumlah rerata ekspresi osteopontin dan osteonectin kelompok perlakuan kolagen sisik ikan gurame meningkat secara signifikan ($p < 0.05$) pada perlakuan kolagen sisik ikan gurame hari ke 14. **Kesimpulan:** Collagen can accelerate the healing process by increasing osteogenesis, one of which is characterized by increased osteopontin and osteonectin as osteoblast markers.