

Pharmacology

1. Staffs and Students(April, 2009)

Professor	Keiichi OHYA
Associate Professor	Kazuhiro AOKI
Assistant Professor	Yukihiko TAMURA
Technologist	Mariko TAKAHASHI
Secretary	Chikako KIDO
Foreign Researcher(JSPS)	SOYSA Hennadige Niroshani Surangika
Graduate Student	ALLES Chrisman Neil Roshan Alexander, Kenichi NAGANO, Hiroyuki NAKACHI(Maxillofacial Surgery), Naoki HAYASHI(Dentistry for Persons with Disabilities), Toshimi SATO, Kengo FUJIKI(Removable Prosthodontics), KHAN Md Adbulla Al Masud

2. Purpose of Education

Pharmacology is situated between the basic and clinical sciences and is important for dental students. There is a growing demand on the dental clinicians to know huge knowledge of drugs and how to use them for patients. For these purpose, the first lecture is aimed to teach the scientific aspects of pharmacology and how drugs act on the various body system. The second lecture deals with drugs of medical and dental fields and the last with drugs of special importance of dentistry. Dental students learn the principle of pharmacology through laboratory practice. Following these learning, they must acquire an adequate background for drug use in general practice.

3. Research Subjects

- 1) Drug effects on the formation mechanism of teeth and bone
- 2) Pharmacological analysis of bone resorption mechanism
- 3) Development of inhibitors for bone resorption and their clinical trials
- 4) Toxicity of heavy metals in mineralized tissue

4. Publications

Original Article

1. Soysa N.S, Alles N. NF- κ B functions in osteoclasts. *Biochemical and Biophysical Research Communications*, Vol.278, pp1-5, 2009
2. Onizawa M, Nagaishi T, Kanai T, Nagano K, Oshima S, Nemoto Y, Yoshioka A, Totsuka T, Okamoto R, Nakamura T, Sakamoto N, Tsuchiya K, Aoki K, Ohya K, Yagita H. Signaling pathway via TNF- α /NF- κ B in intestinal epithelial cells may be directly involved in colitis-associated carcinogenesis. *Am J Physiol Gastrointest Liver Physiol* Vol.296: G850-G859, January 2009
3. Soysa N, Alles N, Shimokawa H, Jimi E, Aoki K, Ohya K. Inhibition of the classical NF- κ B pathway prevents osteoclast bone-resorbing activity. *J Bone Miner Metab*, Vol.27(2), pp131-139, 2009
4. Sriarj W, Aoki K, Ohya K, Takagi Y, Shimokawa H. Bovine dentine organic matrix down-regulates osteoclast activity. *J Bone Miner Metab*, Vol.27, pp315-323, 2009
5. Nyan M, Sato D, Kihara H, Machida T, Ohya K, Kasugai S. Effects of the combination with alpha-tricalcium phosphate and simvastatin on bone regeneration. *J Clinical Oral Implants Res*, Vol.20(3), pp280-287, March 2009
6. Soysa N, Alles N, Aoki K, Ohya K. Three-dimensional characterization of osteoclast bone-resorbing activity in the resorption lacunae. *J Med & Dent Sci*, Vol.56(2), pp107-112, June 2009
7. Tomomatsu N, Aoki K, Alles N, Soysa N, Hussain A, Nakachi H, Kita S, Shimokawa H, Ohya K, Amagasa T. LPS-Induced Inhibition of Osteogenesis Is TNF- α Dependent in a Murine Tooth Extraction Model. *J Bone Miner Res*, Vol.24(10), pp1770-1781, 2009
8. Alles N, Soysa N, Hussain A, Tomomatsu N, Saito H, Baron R, Morimoto N, Aoki K, Akiyoshi K, Ohya K. Polysaccharide nanogel delivery of a TNF- α and RANKL antagonist peptide allows systemic prevention of bone loss. *Eur J Pharm Sci*, Vol.37, pp83-88, 2009
9. Soysa N, Alles N, Weih D, Lovas A, Mian H, Shimokawa H, Yasuda H, Weih F, Jimi E, Ohya K, Aoki K. The Pivotal role of the alternative NF- κ B pathway in maintenance of basal bone homeostasis and osteoclastogenesis. *J Bone*

Miner Res, Published on 14th December, 2009

10. Maruyama T, Fukushima H, Nakao K, Shin M, Yasuda H, Weih F, Doi T, Aoki K, Alles N, Ohya K, Hosokawa R, Jimi E. Processing of the NF- β 2 Precursor, p100, to p52 is Critical for RANKL-Induced Osteoclast Differentiation. J Bone Miner Res published on 14th December, 2009