

Medicinal-Chemical Biology (Medicinal Chemistry)

1. Staffs and Students (April, 2009)

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	Jun SATO,	Yoshiaki OKUDA,
	Yuta NAKANISHI,	Chie HASHIMOTO,
	Akemi MASUDA,	Tomoaki MINO,
	Aiko OGAWA,	Mayo Kamimura,
	Keita Otuka,	Tsuyoshi OKUDA,
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2. Purpose of Education

Our department teaches chemical biology targeted to elucidation and regulation of biological phenomena based on organic chemistry and advanced synthetic chemistry, medicinal chemistry and advanced drug discovery of a post-genomena era. Our department performs periodically journal clubs and research progress meetings.

3. Research Subjects

- 1) Development of conformational-constrained templates for drug discovery.
- 2) Development of bio-probes, bio-sensing, medicinal chemistry towards chemical biology.
- 3) Structural analysis of the interactions between receptors/enzymes and their ligands.
- 4) Development of applications of zinc finger protein for gene therapy and nano technology.

4. Publications

Original Article

1. Tsutsumi H, Nomura W, Abe S, Mino T, Masuda A, Ohashi N, Tanaka T, Ohba K, Yamamoto N, Akiyoshi K, Tamamura H: Fluorogenically Active leucine zipper peptides as new tag-probe pairs for protein imaging in living cells. *Angew Chem., Int. Ed.* 48: 9164–9166, 2009
2. Inaba Y, Yoshimoto N, Sakamaki Y, Nakabayashi M, Ikura T, Tamamura H, Ito N, Shimizu M, Yamamoto K: A new class of vitamin D analogues that induce structural rearrangement of the ligand-binding pocket of the receptor. *J. Med. Chem.* 52(5): 1438-1449, 2009.
3. Mizukoshi F, Baba K, Goto-Koshino Y, Setoguchi-Mukai A, Fujino Y, Ohno K, Tamamura H, Oishi S, Fujii N, Tsujimoto H: Inhibitory effect of newly developed CXC-chemokine receptor 4 antagonists on the infection with feline immunodeficiency virus. *J. Vet. Med. Sci.* 71(1): 121-124, 2009.
4. Tanaka T, Nomura W, Narumi T, Esaka A, Oishi S, Ohashi N, Itotani K, Evans BJ, Wang Z, Peiper SC, Fujii N, Tamamura H: Structure-activity relationship study on artificial CXCR4 ligands possessing the cyclic pentapeptide scaffold: the exploration of amino acid residues of pentapeptides by substitutions of several aromatic amino acids. *Org. Biomol. Chem.* 7: 3805-3809, 2009.
5. Ohashi N, Nomura W, Kato M, Narumi T, Lewin NE, Blumberg PM, Tamamura H: Synthesis of protein kinase C δ C1b domain by native chemical ligation methodology and characterization of its folding and ligand binding. *J. Pept. Sci.* 15(10): 642-646, 2009.