Molecular Cytogenetics

1. Staffs and Students (April, 2010)

Professor	Johji Inazawa M.D., Ph.D.	
Associate Professor	Ken-ichi Kozaki D.D.S., Ph.D.	
MTT Lecturer	Takeshi Matsui Ph.D.	
Assistant Professor	Jun Inoue Ph.D.	
Tokunin Lecturer	Shin Hayashi M.D., Ph.D.	
Research Assistant	Ayako Takahashi,	Rumi Mori
Secretary	Yoriko Fukukawa,	Yuko Shinozaki
Graduate Student	Shozo Honda,	Bai Hua,
	Tomoki Muramatsu,	Mayuko Furuta,
	Itsumi Omori,	Masato Kawahara,
	Junya Kobayashi,	Makoto Maeda
Research Student	Hirotaka Konishi	

2. Purpose of Education

The principal aim of Department of Molecular Cytogenetics is to understand the molecular mechanism underlying intractable diseases, such as cancer and uncharacterized genetic diseases. Main objective of Department of Molecular Cytogenetics in the graduate course is to provide students opportunity to study molecular cytogenetic approach for intractable diseases, identify genes responsible for those diseases, and develop innovative techniques/ practically useful tools for detection of genomic and epigenomic aberrations in those diseases. It is our goal to bridge the gap between basic and clinical research for the benefit of each of the patients.

3. Research Subjects

1. Identification of genes responsible for intractable diseases including cancer and genomic disorders through integrative genomics and epigenomics.
2. Discovery of molecular mechanisms of cancer-related genes, including microRNAs, in the multistep processes of carcinogenesis and cancer progression, such as cancer stem cell, epithelial-mesenchymal transition (EMT), invasion and metastasis using systems biology.
3. Development of innovative techniques for genomics and epigenomics in medical science.
4. Development of practically useful tools for molecular diagnosis of intractable diseases.

4. Publications

Original Article

1. Muramatsu T, Imoto I, Matsui T, Kozaki K, Haruki S, Sudol M, Shimada Y, Tsuda H, Kawano T, Inazawa J: YAP is a candidate oncogene for esophageal squamous-cell carcinoma. Carcinogenesis. 32:389-98. 2010
2. Xu H, Miki K, Ishibashi S, Inoue J, Sun L, Endo S, Sekiya I, Muneta T, Inazawa J, Dezawa M, Mizusawa H. Transplantation of neuronal cells induced from human mesenchymal stem cells improves neurological functions after stroke without cell fusion. J Neurosci Res. 88:3598-609. 2010
3. Miki D, Kubo M, Takahashi A, Yoon KA, Kim J, Lee GK, Zo JI, Lee JS, Hosono N, Morizono T, Tsunoda T, Kamatani N, Chayama K, Takahashi T, Inazawa J, Nakamura Y, Daigo Y: Variation in TP63 is associated with lung adenocarcinoma susceptibility in Japanese and Korean populations. Nat Genet. 42:893-6. 2010
4. Takata R, Akamatsu S, Kubo M, Takahashi A, Hosono N, Kawaguchi T, Tsunoda T, Inazawa J, Kamatani N, Ogawa O, Fujioka T, Nakamura Y, Nakagawa H: Genome-wide association study identifies five new susceptibility loci for prostate cancer in the Japanese population. Nat Genet. 42:751-4. 2010
5. Tagi T, Matsui T, Kikuchi S, Hoshi S, Ochiai T, Kokuba Y, Kinoshita-Ida Y, Kisumi-Hayashi F, Morimoto K, Imai T, Imoto I, Inazawa J, Otsuji E: Dermokine as a novel biomarker for early-stage colorectal cancer. J Gastroenterol. 45:1201-11. 2010
6. Honda S, Hayashi S, Imoto I, Toyama J, Okazawa H, Nakagawa E, Goto YI, Inazawa J: Copy-number variations on the X chromosome in Japanese patients with mental retardation detected by array-based comparative genomic hybridization analysis. J Hum Genet. 55:590-9.2010

7. Takanashi J, Arai H, Nabatame S, Hirai S, Hayashi S, Inazawa J, Okamoto N, Barkovich AJ: Neuroradiologic Features of CASK Mutations. AJNR Am J Neuroradiol. 31:1619-22. 2010
8. Shibata T, Kokubu A, Miyamoto M, Hosoda F, Gotoh M, Tsuta K, Asamura H, Matsuno Y, Kondo T, Imoto I, Inazawa J, Hirohashi S: DEK oncoprotein regulates transcriptional modifiers and sustains tumor initiation activity in high-grade neuroendocrine carcinoma of the lung. Oncogene. 29:4671-81. 2010
9. Honda S, Orii K, Kobayashi J, Hayashi S, Imamura A, Imoto I, Nakagawa E, Goto Y, Inazawa J: Novel deletion at Xq24 including the UBE2A gene in a patient with X-linked mental retardation. J Hum Genet. 55:244-7. 2010
10. Saitoh Y, Martínez Bruyn VJ, Uota S, Hasegawa A, Yamamoto N, Imoto I, Inazawa J, Yamaoka S: Overexpression of NF-kappaB inducing kinase underlies constitutive NF-kappaB activation in lung cancer cells. Lung Cancer. 70:263-70. 2010
11. Haruki S, Imoto I, Kozaki K, Matsui T, Kawachi H, Komatsu S, Muramatsu T, Shimada Y, Kawano T, Inazawa J: Frequent silencing of protocadherin 17, a candidate tumour suppressor for esophageal squamous-cell carcinoma. Carcinogenesis. 31:1027-36. 2010
12. Prapinjumrune C, Morita KI, Kuribayashi Y, Hanabata Y, Shi Q, Nakajima Y, Inazawa J, Omura K: DNA amplification and expression of FADD in oral squamous cell carcinoma. J Oral Pathol Med. 39:525-32. 2010