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Current Position: Unit leader, Brain Science Institute,

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Date and Place of Birth: January 11, 1948, Gunma, Japan

Higher Education: 1969-1973: B Pharm, Shizuoka College of Pharmacy

1973-1976: Shizuoka College of Pharmacy

(Doctor course)

Professional Experience:

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| 1976-1979 | Research Associate at the Department of Biochemistry,
Shizuoka College of Pharmacy |
| 1979-1982 | Post Doctoral Fellow at the Department of Biochemistry,
Tulane University School of Medicine
Supervisor: Prof. Yu-Teh Li |
| 1982-1991 | Associate Professor at the Department of Biochemistry,
Shizuoka College of Pharmacy |
| 1990 | Visiting Scholar at the Department of Neuroscience
(Prof. John O'Brien) University of California at San Diego |
| 1991-1999 | Team leader, Laboratory for Cellular Glycobiology
Frontier Research Program (FRP) RIKEN |
| 1999 - Present | Unit Leader, BSI RIKEN |
| 2004 ~ 2009 | Leader for Glycobiology Program (CREST) |
| 2009 ~(2014) | Team leader, Lipid Functions Research Team, Research Group for Lipid
Dynamics, Advanced Science Institute, RIKEN |

Awards: The Pharmaceutical Society of Japan, Award for Young scientists (1994)
Noteworthy invention (with Dr S Ichikawa, ceramide glucosyltransferase, 1998)

Original Papers in Journal (1977-2009)

1. Taki T, Hirabayashi Y, Kanki Y, Matsumoto M, Kojima K. Comparative study of glycolipid metabolism in two types of rat ascites hepatoma cells. *Jpn J Exp Med* **47**, 429-433 (1977).
2. Hirabayashi Y, Taki T, Matsumoto M, Kojima K. Comparative study on glycolipid composition between two cell types of rat ascites hepatoma cells. *Biochim Biophys Acta* **529**, 96-105 (1978).
3. Taki T, Hirabayashi Y, Suzuki Y, Matsumoto M, Kojima K. Comparative study of glycolipid compositions of plasma membranes among two types of rat ascites hepatoma and normal rat liver. *J Biochem (Tokyo)* **83**, 1517-1520 (1978).
4. Hirabayashi Y, Taki T, Matsumoto M. Tumor ganglioside - natural occurrence of GM1b. *FEBS Lett* **100**, 253-257 (1979).
5. Taki T, Hirabayashi Y, Ishiwata Y, Matsumoto M, Kojima K. Biosynthesis of different gangliosides in two types of rat ascites hepatoma cells with different degrees of cell adhesiveness. *Biochim Biophys Acta* **572**, 113-120 (1979).
6. Taki T, Hirabayashi Y, Matsumoto M, Kojima K. Enzymic synthesis of a new type of fucose-containing glycolipid with fucosyltransferase of rat ascites hepatoma cell, AH 7974F. *Biochim Biophys Acta* **572**, 105-112 (1979).
7. Taki T, Hirabayashi Y, Kondo R, Matsumoto M, Kojima K. Effect of butyrate on glycolipid metabolism of two cell types of rat ascites hepatomas with different ganglioside biosynthesis. *J Biochem (Tokyo)* **86**, 1395-1402 (1979).
8. Li SC, Asakawa M, Hirabayashi Y, Li Y. Isolation of two endo-beta-N-acetylglucosaminidases from fig latex. *Biochim Biophys Acta* **660**, 278-283 (1981).
9. Taki T, Hirabayashi Y, Takagi K, Kamada R, Kojima K, Matsumoto M. Purification of

- anti-glycosphingolipid antibody and topological localization of glycosphingolipid on the cell surface of rat ascites hepatomas. *J Biochem (Tokyo)* **89**, 503-510 (1981).
10. Li SC, Hirabayashi Y, Li YT. A new variant of type-AB GM2-gangliosidosis. *Biochem Biophys Res Commun* **101**, 479-485 (1981).
 11. Li SC, Hirabayashi Y, Li YT. A protein activator for the enzymic hydrolysis of GM2 ganglioside. *J Biol Chem* **256**, 6234-6240 (1981).
 12. Matsumoto M, Taki T, Samuelsson B, Pascher I, Hirabayashi Y, Li SC, Li YT. Further characterization of the structure of GM1b ganglioside from rat ascites hepatoma. *J Biol Chem* **256**, 9737-9741 (1981).
 13. Hirabayashi Y, Li YT, Li SC. The protein activator specific for the enzymic hydrolysis of GM2 ganglioside in normal human brain and brains of three types of GM2 gangliosidosis. *J Neurochem* **40**, 168-175 (1983).
 14. Hirabayashi Y, Suzuki T, Suzuki Y, Taki T, Matsumoto M, Higashi H, Kato S. A new method for purification of anti-glycosphingolipid antibody. Avian anti-hematoside (NeuGc) antibody. *J Biochem (Tokyo)* **94**, 327-330 (1983).
 15. Li YT, Muhiudeen IA, DeGasperi R, Hirabayashi Y, Li SC. Presence of activator proteins for the enzymic hydrolysis of GM1 and GM2 gangliosides in normal human urine. *Am J Hum Genet* **35**, 629-634 (1983).
 16. Li YT, Hirabayashi Y, Li SC. Differentiation of two variants of type-AB GM2-gangliosidosis using chromogenic substrates. *Am J Hum Genet* **35**, 520-522 (1983).
 17. Hirabayashi Y, Li YT, Li SC. Occurrence of a new hematoside in the kidney of guinea pig. *FEBS Lett* **161**, 127-130 (1983).
 18. Suzuki Y, Hirabayashi Y, Matsumoto M. Hydrazinolysis of glycosphingolipids. A new method for preparation of N-deacylated (lyso) glycosphingolipids. *J Biochem (Tokyo)* **95**, 1219-1222 (1984).
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- Biochim Biophys Acta* **796**, 269-276 (1984).
20. Li YT, Hirabayashi Y, DeGasperi R, Yu RK, Ariga T, Koerner TA, Li SC. Isolation and characterization of a novel phytosphingosine-containing GM2 ganglioside from mullet roe (*Mugil cephalus*). *J Biol Chem* **259**, 8980-8985 (1984).
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22. Higashi H, Fukui Y, Ueda S, Kato S, Hirabayashi Y, Matsumoto M, Naiki M. Sensitive enzyme-immunostaining and densitometric determination on thin-layer chromatography of N-glycolylneuraminic acid-containing glycosphingolipids, Hanganutziu-Deicher antigens. *J Biochem (Tokyo)* **95**, 1517-1520 (1984).
23. Muhiudeen IA, Koerner TA, Samuelsson B, Hirabayashi Y, DeGasperi R, Li SC, Li YT. Characterization of human liver 3-O-beta-D-glucopyranuronosyl-cholesterol by mass spectrometry and nuclear magnetic resonance spectroscopy. *J Lipid Res* **25**, 1117-1123 (1984).
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- cross-reactivity recognizes GM3, a prominent ganglioside of B16 melanoma. *J Biol Chem* **260**, 13328-13333 (1985).
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58. Hirabayashi Y, Hyogo A, Nakao T, Tsuchiya K, Suzuki Y, Matsumoto M, Kon K, Ando S. Isolation and characterization of extremely minor gangliosides, GM1b and GD1 alpha, in adult bovine brains as developmentally regulated antigens. *J Biol Chem* **265**, 8144-8151 (1990).
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Book Editor (with Professors Al Merrill and Y Igarashi)
Sphingolipid Biology: Springer-Verlag Tokyo (2006)