In this department, the former Professor Norihiko Hayakawa retired, and Dr. Shigeto Yoshida and Mr. Yoshihiko Takezaki resigned on March 31, 2005. Hideshi KAWAKAMI took up its new post on December 1, 2005, and Dr. Hiroyuki MORINO took up his new post on March 1, 2006.

A main study has been aimed for epidemiological studies on the late effects of atom bomb (A-bomb) survivors and the actual conditions of the from socio-medical viewpoints. A purpose as this master does not change, but it passes after being bombed in 1945, and A-bomb survivors have gone old aged, and a lifestyle-related disease and a problem in geriatrics become important as a healthy problem of A-bomb survivors, too. Therefore, as well as a cohort study based on a database, I take in the new study method how I used a molecule marker and genetic polymorphism markers for, and a neurological disease to increase with a senior citizen.

1. A-bomb survivors cohort study

Kawakami H, Morino H, Sumida O*, Hiraoka M* (* International Radiation Information Center)

Purpose: From November, 1965, we followed it in “Hiroshima atom bomb (A-bomb) survivors cohort” resident in Hiroshima from biological influence and points of view such as the later living environment of survivors. There is it for the purpose of making basics document contributing to health care / the welfare of A-bomb survivors. As for the examination problem, next is put up.
1) Analysis by A-bomb dose based on ABS93D
2) Analysis of exposure status
3) Analysis by the distance from the hypocenter
4) Analysis of the effects by environment factors,
5) Study of disease development by family analysis.

The prospects of progress and the future: It lasted in last year and performed a readjustment of A-bomb survivors with information of family constitution at the time of being bombed. In this year, we continued permission to use purpose outside of designated statistics and, about death information to become the basics of observation of laboratory of original medicine A-bomb survivors population, got it and prepared update.

2. Study of causative genes of spinocerebellar degenerations (SCD)

Morino H, Maruyama H*, Kawakami H. (* Hiroshima University Graduate School Department of Neurology)

Purpose: One third of the patients with SCD are hereditary, and many types of spinocerebellar degeneration are caused by extension of three base repeat to call “triplet repeat diseases”, but there is still a group of unknown causative gene. We
study it aiming at discovery of a new causative gene.

3. Study of genetic factors to influence neurodegeneration diseases,
Kawakami H, Morino H, Maruyama H* (*Hiroshima University Graduate School Department of Neurology)

**Purpose:** About neurodegeneration diseases such as Parkinson’s disease, Alzheimer’s disease, amyotrophic lateral sclerosis, we search for causative genes. We made clear that the alpha-synuclein gene promoter polymorphism related the Parkinson’s disease onset. The gene was a constitution ingredient of the Lewy body which was a pathological marker of Parkinson’s disease.


**Purpose:** It is known that SCA14 was caused by mutation of a γ gene of Protein Kinase C. We used dHPLC with 700 DNA samples of the spinocerebellar degeneration patient whose causative gene was unknown, and found variation of one family by this screening. We clarified that this variation concerned for being easy to aggregate in a cell and cell death.

5. Differentiation to neuron from a marrow mesenchymal stem cell:
Morino H, Kawakami H

**Purpose:** It is known that a marrow mesenchymal stem cell has many differentiation ability, but is still insufficient about differentiation to nervous system. Aiming at application to neurological disease, we examine differentiation conditions to neurons and glial cells.

A. Original papers


B. Meeting Presentation


5. Takahiro Seki, Naoko Adachi, Yoshitaka Ono, Hideki Mochizuki, Keiko Hiramoto, Taku Amano, Hiroaki Matsubayashi, Masayasu Matsumoto, Hideshi Kawakami, Naoaki Saito and Norio Sakai (Department of Molecular and Pharmacological Neuroscience, Department of Ophthalmology and Visual sciences, Department of Neurosurgery, Department of Clinical Neuroscience and Therapeutics, Graduate School of Biomedical Sciences, Hiroshima University, Hiroshima 734-8551, Japan, Laboratory of Molecular Pharmacology, Biosignal Research Center, Kobe University, Kobe 657-8501, Japan): Mutant protein kinase Cγ (γ PKC) found in spinocerebellar ataxia type 14 (SCA14) tends to aggregate in the cytoplasm and cause cell death. Neuroscience 2005 SfN 35th Annual Meeting, Nov 12-16, 2005 Washington, DC U.S.A

6. Takahiro Seki, Naoko Adachi, Yoshitaka Ono, Hideki Mochizuki, Keiko Hiramoto, Taku Amano, Hiroaki Matsubayashi, Masayasu Matsumoto, Hideshi Kawakami, Naoaki Saito and Norio Sakai (Department of Molecular and Pharmacological Neuroscience, Department of Ophthalmology and Visual sciences, Department of Neurosurgery, Department of Clinical Neuroscience and Therapeutics, Graduate School of Biomedical Sciences, Hiroshima University, Hiroshima 734-8551, Japan, Laboratory of Molecular Pharmacology, Biosignal Research Center, Kobe University, Kobe 657-8501, Japan): Molecular Biology of Mutant protein kinase Cγ (γ PKC) found in spinocerebellar ataxia type 14 (SCA14). The 28th Annual Meeting of the Japan Molecular Biology Society December 7-10, 2005 Fukuoka