| Joint Research Title  | Joint Researcher<br>(Representative) | Affiliated Organization   | Resident Researcher<br>(Representative) | Affiliated Organization | New. •<br>Conti. |
|---|--------------------------------------|---|---|-------------------------|------------------|
| 【Projects responding to Fukushima Nuclear Power Plant accident】<br>1.Research on low-dose and low-dose rate radiation effects           |                                      |   |   |                         |                  |
| Investigation of the effects of chronic exposure of low dose radiation on animal health   | MURATA TAKAHISA                      | The University of Tokyo   | Osamu Kaminuma                          | Hiroshima University    | Conti.           |
| A study on radiation effects to the circulatory system of wild-type mice  | Nobuyuki Hamada                      | Central Research Institute of<br>Electric Power Industry (CRIEPI) | Yukihito Higashi                        | Hiroshima University    | Conti.           |
| Role of tumor microenvironment in radiation-induced tumor   | Shimura Tsutomu                      | Ntional Institute of Public Health                                | Megumi Sasatani                         | Hiroshima University    | Conti.           |
| Analysis of somatic mutation induction by using a hyper-sensitive system  | Tauchi Hiroshi                       | Ibaraki University  | Keiji Suzuki                            | Nagasaki University     | Conti.           |
| Genome-wide analysis for the transgenerational effects of low-dose radiation exposure   | Uchimura Arikuni                     | Radiation Effects Research<br>Foundation                          | Osamu Kaminuma                          | Hiroshima University    | Conti.           |
| The analysis of the specific mutational signatures induced by low-dose(-rate) irradiation using a SV-NGS method                         | Hidehiko Kawai                       | Hiroshima University  | Megumi Sasatani                         | Hiroshima University    | Conti.           |
| Retaining of labels and DNA damage in rat mammary gland   | Tatsuhiko Imaoka                     | National Institutes for Quantum<br>Science and Technology         | Keiji Suzuki                            | Nagasaki University     | Conti.           |
| Assessment of individual differences in radiosensitivity to low-dose-rate radiation using chromosomal aberrations                       | Masanori Tomita                      | Central Research Institute of<br>Electric Power Industry          | Satoshi Tashiro                         | Hiroshima University    | New              |
| Risk assessment of carcinogenesis due to exposure to tritiated water using a mouse model with high susceptibility to carcinogenesis     | Toshiyuki Umata                      | University of Occupational and<br>Environmental Health, Japan     | Megumi Sasatani                         | Hiroshima University    | Conti.           |
| Biological effects of low-dose/low-dose-rate exposure on stem cells   | IIZUKA DAISUKE                       | National Institutes for Quantum<br>Science and Technology         | Megumi Sasatani                         | Hiroshima University    | Conti.           |
| Live cell imaging using a genetic probe for detection of radiation effects  | Kensuke Otsuka                       | Central Research Institute of<br>Electric Power Industry          | Keiji Suzuki                            | Nagasaki University     | Conti.           |
| Molecular pathogenesis of childhood and adolescent thyroid cancers  | Fumihiko Furuya                      | Fukushima Medical University                                      | Norisato Mitsutake                      | Nagasaki University     | New              |
| Simulation studies to reinforce the interpretation of the differences between results of animal experiments and epidemiological studies | Kazutaka Doi                         | National Institutes for Quantum<br>Sciences and Technology        | Megumi Sasatani                         | Hiroshima University    | Conti.           |

| Joint Research Title   | Joint Researcher<br>(Representative) | Affiliated Organization  | Resident Researcher<br>(Representative) | Affiliated Organization      | New. •<br>Conti. |
|--|--------------------------------------|--|---|------------------------------|------------------|
| Simulation studies to evaluate the impact of confounding factors on risk estimates in low dose and dose rate radiation | Kazutaka Doi                         | National Institutes for Quantum<br>Science and Technology                  | Shinji Yoshinaga                        | Hiroshima University         | Conti.           |
| Relationship of oxidative stress with cellular responses under low dose rate irradiation                               | Junya Kobayashi                      | International University of Health<br>and Welfare                          | Shinya Matsuura                         | Hiroshima University         | Conti.           |
| Understanding of the impact of discharged wastewater to rainfall over Japan  | Kurita, Naoyuki                      | Nagoya University  | Hiroshi Yasuda                          | Hiroshima University         | Conti.           |
| The study of DNA damage accumulation in response to long-term low-dose/low-dose rate radiation exposure                | Masatoshi Suzuki                     | Tohoku University  | Keiji Suzuki                            | Nagasaki University          | Conti.           |
| Effect of X-rays on Amyloid $eta$ -induced cell damage   | Shinsuke Katoh                       | Yokohama University of<br>Pharmacy   | Yu Abe                                  | Nagasaki University          | New              |
| Effect of low-dose/low-dose-rate radiation exposure on Th1/Th2 balance in mice   | Eiji Takayama                        | Asahi University School of<br>Dentistry                                    | Tatsuo Ichinohe                         | Hiroshima University         | Conti.           |
| Factor analysis on the effects of radiation disasters on obesity in children in Fukushima<br>Prefecture                | Yugo Shobugawa                       | Niigata University   | Tetsuya Ohira                           | Fukushima Medical University | Conti.           |
| The investigation of relative biological effectiveness for continuous exposure to low concentration of tritium         | Taku Sato                            | Tohoku University  | Megumi Sasatani                         | Hiroshima University         | New              |
| Mechanisms of low-dose/low-dose-rate radiation-induced heart disease   | ZAHARIEVA Elena<br>Karamfilova       | National Centre for Radiobiology<br>and Radiation Protection<br>(Bulgaria) | SASATANI Megumi                         | Hiroshima University         | New              |
| Regarding the Characteristics and Protection of Naturally Occurring Radioactive Material                               | Changting GUH                        | Graduate School of Frontier<br>Sciences, The University of<br>Tokyo        | Seiko Hirota                            | Hiroshima University         | New              |
| High sensitivity analysis of DNA damage induced by ionizing radiation of low dose and low dose rate                    | Hiroaki Terato                       | Okayama University   | Hiroshi Yasuda                          | Hiroshima University         | Conti.           |
| Histopathological examination of juvenile thyroid cancer in the area around Chernobyl and in Japan                     | Masahiro Ito                         | NHO Nagasaki Medical Center  | Masahiro Nakashima                      | Nagasaki University          | Conti.           |
| Effect of mesenchymal stem cells on radiation-induced tissue injury  | Nakashima Ayumu                      | Hiroshima University   | Yukihito Higashi                        | Hiroshima University         | New              |
| Understanding anisakiasis by combining phylogenetic and molecular immunology   | Maribet Gamboa                       | Universidad Catolica de la<br>Santisima Concepcion                         | Osamu Kaminuma                          | Hiroshima University         | New              |

| Joint Research Title  | Joint Researcher<br>(Representative) | Affiliated Organization                             | Resident Researcher<br>(Representative) | Affiliated Organization | New. •<br>Conti. |
|---|--------------------------------------|---|---|-------------------------|------------------|
| Evaluation of late effects of radiation exposure using human iPS cells  | Go Shioi                             | RIKEN Center for Developmental<br>Dynamics Research | Hideaki Fujita                          | Hiroshima University    | New              |
| The effects of radiation on bone tissue-composed cells  | Takuma Matsubara                     | Kyushu Dental University                            | Osamu Kaminuma                          | Hiroshima University    | New              |
| Genetic basis of cancer susceptibility by radiation   | Tatsuo Miyamoto                      | Yamaguchi University                                | AKUTSU SILVIA<br>NATSUKO                | Hiroshima University    | New              |
| Functional annotation of VUS in the radiosensitive gene   | Takao Hinoi                          | Hiroshima University Hospital                       | AKUTSU SILVIA<br>NATSUKO                | Hiroshima University    | New              |
| Development and application of health risk mapping associated with external exposure to terrestrial gamma ray in Japan—development of measurement technique of terrestrial gamma ray— | Yasutaka Omori                       | Hirosaki University                                 | Shinji Yoshinaga                        | Hiroshima University    | New              |
| Effects of low-dose irradiation on breast cancer cells  | Emi Tokuda                           | Fukushima Medical University                        | Kodai Kume                              | Hiroshima University    | New              |

### [Projects responding to Fukushima Nuclear Power Plant accident]

2.Development of diagnostic and treatment methods for internal radiation exposure

| Exploration of biomarkers for the differential diagnosis of follicular thyroid cancer and novel drug-targeted molecules for their treatment | Osamu Ishibashi | Osaka Metropolitan University | Satoshi Tashiro | Hiroshima University | Conti. |
|---|-----------------|-------------------------------|-----------------|----------------------|--------|
|---|-----------------|-------------------------------|-----------------|----------------------|--------|

#### [Projects responding to Fukushima Nuclear Power Plant accident]

3.Research and development of radiation-protective drugs

| Verification of the effect of cyclodextrin on reducing the absorption of radioactive iodine into the body   | Shogo Higaki         | The University of Tokyo                           | Kodai Nishi     | Nagasaki University  | Conti. |
|---|----------------------|---|-----------------|----------------------|--------|
| Phytochemical analysis of herbs for discovering radioprotectant   | Katsuyoshi Matsunami | Hiroshima University                              | Satoshi Tashiro | Hiroshima University | Conti. |
| Experimental studies on radiation and Curcumin analogues, GO-Y030, GO-Y022 and GO-Y078. Molecular mechanisms of radioresistance and radiosensitivity in human cancer cells. | Eiko Nakata          | International University of Health<br>and Welfare | Shinya Matsuura | Hiroshima University | Conti. |

| Joint Research Title   | Joint Researcher<br>(Representative) | Affiliated Organization            | Resident Researcher<br>(Representative) | Affiliated Organization | New. •<br>Conti. |
|--|--------------------------------------|------------------------------------|---|-------------------------|------------------|
| Development of Radioprotective Agents Targeting Inflammatory Platforms                   | Akinori Morita                       | Tokushima University               | Megumi Sasatani                         | Hiroshima University    | New              |
| Research on protective agents against radiation-induced gastrointestinal disorders       | Masanori Ito                         | Hiroshima University Hospital      | Yukihito Higashi                        | Hiroshima University    | New              |
| Pre- and post-comparative study on radioprotective effects of Kampo medicines            | Akihiro Kawahara                     | Hiroshima University Hospital      | Satoshi Tashiro                         | Hiroshima University    | New              |
| Examination of diamond nanocrystals as a radioprotective agent                           | Madoka Suzuki                        | Osaka University                   | Hideaki Fujita                          | Hiroshima University    | New              |
| Targeting the Mitochondrial Radiation Response to Develop Radioprotective Agents         | Shimura Tsutomu                      | Ntional Institute of Public Health | Megumi Sasatani                         | Hiroshima University    | New              |
| Evaluation of the radioprotective effects of polyphenolic compounds extracted from plans | Asako J. Nakamura                    | Ibaraki University                 | Megumi Sasatani                         | Hiroshima University    | New              |
| Radioprotective capacity of the iron-binding glycoprotein Lactoferrin                    | Takahiro Fukazawa                    | Ehime University                   | Keiji Tanimoto                          | Hiroshima University    | New              |

### [Projects responding to Fukushima Nuclear Power Plant accident]

4.Research on risk communication regarding radiation disasters

| Clarification of the influence of thyroid stimulating hormone on vascular repair  | Yuji Shimizu   | Osaka Institute of Public Health                              | Naomi Hayashida    | Nagasaki University          | New    |
|---|----------------|---|--------------------|------------------------------|--------|
| Clarify the association between subclinical hypothyroidism and height loss  | Nagisa Sasaki  | Osaka Institute of Public Health                              | Naomi Hayashida    | Nagasaki University          | New    |
| Survey of health effects and issues during and after emergency evacuation of vulnerable people in the Soso area after the Great East Japan Earthquake   | Saori Nonaka   | Minamisoma Municipal General<br>Hospital                      | Masaharu Tsubokura | Fukushima Medical University | Conti. |
| Cohort Study on Long-term Group Living Conditions and Maintenance of Physical Ability of<br>Affected Elderly People in Public Housing (Idobata Nagaya) in Soma Area after the 2011<br>Great Japan East Earthquake | Saito Hiroaki  | Soma Central Hospital   | Masaharu Tsubokura | Fukushima Medical University | Conti. |
| Survey on Disaster-Related Deaths in the Soso area after the Fukushima Daiichi nuclear power plant accident   | Toyoaki Sawano | Jyoban Hospital of Tokiwa<br>Foundation                       | Masaharu Tsubokura | Fukushima Medical University | Conti. |
| Effectiveness of educational workshops including risk communication for Fukushima nuclear power plant workers   | RYUJI OKAZAKI  | University of Occupational and<br>Environmental Health, Japan | Seiji Yasumura     | Fukushima Medical University | Conti. |

| Joint Research Title   | Joint Researcher<br>(Representative) | Affiliated Organization                          | Resident Researcher<br>(Representative) | Affiliated Organization      | New. •<br>Conti. |
|--|--------------------------------------|--|---|------------------------------|------------------|
| Research on the incidence and death of diseases and their distribution of evacuees and returnees after the Great East Japan Earthquake   | SUN ZHICHAO                          | Fukushima Medical University                     | Tetsuya Ohira                           | Fukushima Medical University | Conti.           |
| An analytical study on the tendency of information dissemination and acquisition about nuclear before and after a radiation disaster   | Takeshi IIMOTO                       | The University of Tokyo                          | Hiroshi Yasuda                          | Hiroshima University         | Conti.           |
| Case studies of public health activities in evacuated areas and surrounding areas after the Fukushima Daiichi Nuclear Power Plant accident   | Yoshitaka Nishikawa                  | Kyoto University                                 | Seiji Yasumura                          | Fukushima Medical University | Conti.           |
| Inhalation dose assessment of radon progeny in dwellings in Fukushima Prefecture   | Hayato Kikuchi                       | Hirosaki University                              | Tetsuo ISHIKAWA                         | Fukushima Medical University | New              |
| Evaluating the Understandability and Actionability of Nuclear Disaster Prevention<br>Materials in Japanese   | Shinya Ito                           | Kitasato University                              | Kayoko Ishii                            | Fukushima Medical University | New              |
| Study of barriers to the prevention of suicidal risks in the territories affected by the disaster at the Chernobyl nuclear power plant   | Tamara Sharshakova                   | Gomel State Medical University                   | Naomi Hayashida                         | Nagasaki University          | New              |
| Evaluation study of changes in physical, psychological, and social risk factors that influence health behavior   | Takahiro Tabuchi                     | Tohoku University Graduate<br>School of Medicine | Tetsuya Ohira                           | Fukushima Medical University | Conti.           |
| Study for searching radioprotector/radiosensitizer using plasmid DNA damage as indicator   | Katsunori Yogo                       | Nagoya University                                | Hiroshi Yasuda                          | Hiroshima University         | Conti.           |
| Monitoring and analyses of the behavior of the air dose rates at the forestry edge along<br>the border of Fukushima and Miyagi prefectures aiming to utilize Phits as the risk<br>communication tool | Shigeki HARADA                       | Fukushima University                             | Seiko Hirota                            | Hiroshima University         | New              |
| Ensuring the safety of patients with neurological diseases during radiation disaster situations  | Masahiro Nakamori                    | Hiroshima University Hospital                    | Kayoko Ishii                            | Fukushima Medical University | New              |
| Establishing Support for the Treatment of Neurological Disease Patients in Radiation<br>Disaster Situations  | Mai Kikumoto                         | Hiroshima University                             | Naomi Hayashida                         | Nagasaki University          | New              |

### 【Other important projects】

1.Research on the molecular mechanisms of genomic damage and repair

| Analysis of the role of histone H2AZ ubiquitination in the maintenance of Genome | Hirota Kouji  | Tokyo Metropolitan University | Satoshi Tashiro | Hiroshima University | Conti. |
|--|---------------|-------------------------------|-----------------|----------------------|--------|
| Analysis of ATM activation by delayed mitochondrial ROS                          | Genro Kashino | Nara Medical University       | Keiji Suzuki    | Nagasaki University  | Conti. |

| Joint Research Title   | Joint Researcher<br>(Representative) | Affiliated Organization  | Resident Researcher<br>(Representative) | Affiliated Organization | New. •<br>Conti. |
|--|--------------------------------------|--|---|-------------------------|------------------|
| The analysis for the endoplasmic reticulum function altered by cellular stress                         | Kazunori Imaizumi                    | Hiroshima University   | Akiko Nagamachi                         | Hiroshima University    | Conti.           |
| Analysis of DNA damage response molecular expression as a prognostic predictor of oropharyngeal cancer | Hideaki Nishi                        | Nagasaki University  | Masahiro Nakashima                      | Nagasaki University     | Conti.           |
| Analysis of cellular function of polyubiquitinated PCNA  | Yuji Masuda                          | Tokai National Higher Education<br>and Research System, Nagoya<br>University | Megumi Sasatani                         | Hiroshima University    | Conti.           |
| Histone H3K36 methyltranseferase functions in DNA repair   | Kiyoe URA                            | Chiba University   | Satoshi Tashiro                         | Hiroshima University    | Conti.           |
| Detection of mutational signatures in the cancer tissue of Nagasaki atomic bomb survivors              | Yuko Akazawa                         | Nagasaki University Graduate<br>School of Biomedical Sciences                | Masahiro Nakashima                      | Nagasaki University     | Conti.           |
| Elucidation of the role of Rif1 in DSB repair  | Tomohiro Iguchi                      | Tokyo Metropolitan Institute of<br>Medical Science                           | Osamu Kaminuma                          | Hiroshima University    | Conti.           |
| Regulation of chromatin structures involved in repair of UV-induced DNA damage                         | Kaoru Sugasawa                       | Kobe University  | Satoshi Tashiro                         | Hiroshima University    | Conti.           |
| Analysis of the Relationship between PFAS Sensitivity and DNA repair pathway                           | Toshiyuki Habu                       | Mukogawa Women's University  | Megumi Sasatani                         | Hiroshima University    | New              |
| Role of NBS1 protein in cellular responces to ionizing radiation                                       | Tauchi Hiroshi                       | Ibaraki University   | Shinya Matsuura                         | Hiroshima University    | Conti.           |
| Time-lapse analysis of nuclear factors involved in DNA   | Ken-ichi Yano                        | Kumamoto University  | Keiji Suzuki                            | Nagasaki University     | Conti.           |
| Studies on Bleomycin-induced EBV-positive cancer selective cell death                                  | Hisashi lizasa                       | Shimane University   | Shinya Matsuura                         | Hiroshima University    | New              |
| Role of DNA damage response in Metabolic dysfunction associated fatty liver disease                    | yuko akazawa                         | Nagasaki University Graduate<br>School of Biomedical Sciences                | Masahiro Nakashima                      | Nagasaki University     | Conti.           |
| Roles of epigenomic modification on DNA damage response under hypoxic conditions                       | Eisaburo Sueoka                      | Saga University  | Keiji Tanimoto                          | Hiroshima University    | Conti.           |
| Mechanism by which splicing factors promote repair of radiation-induced DNA double-<br>strand breaks   | Motohiro Yamauchi                    | Kyushu University  | Keiji Suzuki                            | Nagasaki University     | Conti.           |

| Joint Research Title   | Joint Researcher<br>(Representative) | Affiliated Organization                                       | Resident Researcher<br>(Representative) | Affiliated Organization | New. •<br>Conti. |
|--|--------------------------------------|---|---|-------------------------|------------------|
| Effects of phase separation of DNA double-strand break repair factors on the frequency of chromosome rearrangement         | Kie Ozaki                            | Kyushu University   | Yu Abe                                  | Nagasaki University     | Conti.           |
| Roles of the hypoxia-inducible factor- $\alpha$ in radiation sensitivity   | Yuichi Makino                        | Asahikawa Medical University                                  | Keiji Tanimoto                          | Hiroshima University    | Conti.           |
| Mechanisms of DNA damage responses in hypoxic cancer cells   | Hidetaka Eguchi                      | Juntendo University   | Keiji Tanimoto                          | Hiroshima University    | Conti.           |
| Transcriptome analyses of radiation responses in hypoxia by using public database  | Hiromasa Ono                         | Research Organization of<br>Information and Systems           | Keiji Tanimoto                          | Hiroshima University    | Conti.           |
| Molecular mechanisms of DNA damage repair in the pathogenesis of cardiovascular diseases                                   | Mari Ishida                          | Hiroshima University  | Satoshi Tashiro                         | Hiroshima University    | Conti.           |
| Elucidation of the mechanism underlying DSB repair pathway choice after ionizing radiation                                 | Atsushi Shibata                      | Keio University Faculty of<br>Pharmacy                        | Keiji Suzuki                            | Nagasaki University     | New              |
| Analysis of DNA double strand break repair in the presence of inflammatory cytokines.                                      | Mayu Isono                           | Keio University   | Keiji Suzuki                            | Nagasaki University     | New              |
| Role of XRCC3 polymorphism in pathogenesis and progression of cardiac hypertrophy  | Chiemi Sakai                         | Hiroshima University  | Satoshi Tashiro                         | Hiroshima University    | Conti.           |
| The involvement of dimethylation of histone H3K36 induced by DDR in the development and progression of human liver disease | Yasuaki Shibata                      | Nagasaki University Graduate<br>School of Biomedical Sciences | Masahiro Nakashima                      | Nagasaki University     | New              |
| Analysis of the role of non-canonical translation initiation factors in radiation-induced DNA damage restration            | Kakuta Shigeru                       | The University of Tokyo                                       | Osamu Kaminuma                          | Hiroshima University    | Conti.           |
| Interaction between nuclear DNA damage and mitochondrial DNA damage  | Mari Ishida                          | Hiroshima University  | Satoshi Tashiro                         | Hiroshima University    | Conti.           |
| Mechanism of generation of dicentric chromosomes in irradiated Ligase4 deficient mouse fibroblasts.                        | Shiraishi Kazunori                   | OSAKA Metropolitan University                                 | Megumi Sasatani                         | Hiroshima University    | New              |
| Analysis of the molecular mechanism of the genomic instability in carcinogenesis   | Tomoko Ishikawa-<br>Fujiwara         | Osaka University  | Megumi Sasatani                         | Hiroshima University    | Conti.           |
| Novel responsible genes of diseases with genomic instability around the Chernobyl area                                     | Tomoo Ogi                            | Tokai National Higher Education<br>and Research System        | Norisato Mitsutake                      | Nagasaki University     | Conti.           |
| Disruption mechanism of DSB-dependent chromatin regulation in response to decreased UBE3B expression                       | Maiko Okada                          | Tokyo University of Technology                                | Keiji Suzuki                            | Nagasaki University     | Conti.           |

| Joint Research Title   | Joint Researcher<br>(Representative) | Affiliated Organization      | Resident Researcher<br>(Representative) | Affiliated Organization | New. •<br>Conti. |
|--|--------------------------------------|------------------------------|---|-------------------------|------------------|
| Analysis of the mechanisms involved in radiosentitivity of malignant glioma cells                  | Seiji Hama                           | Hiroshima University         | Shinya Matsuura                         | Hiroshima University    | Conti.           |
| Hypoxia signal and DNA damage response in aging  | Bhawal Ujjal                         | Nihon University             | Keiji Tanimoto                          | Hiroshima University    | New              |
| Effects of radiation on development and aging in zebrafish   | Hiromi Hirata                        | Aoyama Gakuin University     | Yasuko Honjo                            | Hiroshima University    | Conti.           |
| Analysis of genomic instability in breast cancer carcinogenesis by 53BP1 expression                | Ryota Otsubo                         | Nagasaki University Hospital | Katsuya Matsuda                         | Nagasaki University     | Conti.           |
| The role of TIP60 histone acetyltransferase complex in radiation-induced DNA damage response       | Tsuyoshi Ikura                       | Kyoto University             | Satoshi Tashiro                         | Hiroshima University    | Conti.           |
| Analysis of cellular strategy of autophagy-dependent cancer cell growth                            | Kanji FURUYA                         | Kyoto University             | Yasuko Honjo                            | Hiroshima University    | Conti.           |
| Molecular pathologic characteristics of benign thyroid nodules showing nodule in nodule morphology | Mayu Ueda                            | Nagasaki University          | Katsuya Matsuda                         | Nagasaki University     | Conti.           |
| DNA damage induced by occupational exposure of medical workers                                     | Fukumoto Wataru                      | Hiroshima University         | Satoshi Tashiro                         | Nagasaki University     | New              |

### [Other important projects]

2.Research on mechanisms of radiation carcinogenesis and development of cancer treatment

| The effect of low-dose irradiation on the functions of tumor-associated macrophages                            | Shotaro Nakajima   | Fukushima Medical University                 | Osamu Kaminuma  | Hiroshima University | Conti. |
|--|--------------------|--|-----------------|----------------------|--------|
| Genomic and epigenomic analysis of hematological malignancies  | Hirotaka Matsui    | National Cancer Center Hospital              | Akiko Nagamachi | Hiroshima University | Conti. |
| Radiation exposure and the resulting risk of genomic destabilization   | Yoshioka, Ken-ichi | National Cancer Center Research<br>Institute | Satoshi Tashiro | Hiroshima University | Conti. |
| Novel therapeutic approaches targeting L-type amino acid transporters for radiation - induced cancer treatment | Keitaro Hayashi    | Dokkyo Medical University                    | Osamu Kaminuma  | Hiroshima University | Conti. |
| Signature analysis of ionizing radiation-induced somatic mutations in hematopoietic stem cells                 | Yukiko Matsuda     | Radiation Effects Research<br>Foundation     | Megumi Sasatani | Hiroshima University | New    |

| Joint Research Title  | Joint Researcher<br>(Representative) | Affiliated Organization   | Resident Researcher<br>(Representative) | Affiliated Organization | New. •<br>Conti. |
|---|--------------------------------------|---|---|-------------------------|------------------|
| Development of estimation protocol for radiosensitivity of indivitual using iPS cells and Raman spectroscopy  | Horie Masanobu                       | Kyoto University  | Hideaki Fujita                          | Hiroshima University    | Conti.           |
| Effects of oxidative stress response on ionizing radiation-induced murine leukemogenesis  | Osamu Tanabe                         | Radiation Effects Research<br>Foundation  | Satoshi Tashiro                         | Hiroshima University    | New              |
| Elucidation of molecular mechanism of ATM-activation by metformin   | Tomoyuki Hamamoto                    | Showa Pharmaceutical University   | Keiji Suzuki                            | Nagasaki University     | Conti.           |
| Genomic mutation analysis of radiation-induced mouse hepatocellular carcinoma   | Yi SHANG                             | Quantum Life and Medical<br>Science Directorate, National<br>Institutes for Quantum Science<br>and Technology | Keiji Suzuki                            | Nagasaki University     | Conti.           |
| Histopathological analysis in the carcinogenic processes on radiation-induced intestinal tumor  | Morioka Takamitsu                    | National Institutes for Quantaum<br>Science and Technology  | Megumi Sasatani                         | Hiroshima University    | Conti.           |
| Cellular kinetics of hematopoietic stem cell with Sfpi1 gene deletion in bone marrow and spleen of X-irradiated mice  | Mitsuaki Ojima                       | Oita University of Nursing and<br>Health Sciences   | Keiji Suzuki                            | Nagasaki University     | Conti.           |
| Etiology-specific roles of four genetic loci conferring risk for radiation-related and sporadic thyroid cancer in pediatric and adult patients from Belarus | Tatsiana Leonava                     | Minsk City Clinical Oncological<br>Center   | Vladimir Saenko                         | Nagasaki University     | Conti.           |
| Elucidation of the mechanism of radiation-induced hepatocarcinogenesis  | Morioka Takamitsu                    | National Institutes for Quantaum<br>Science and Technology  | Keiji Suzuki                            | Nagasaki University     | Conti.           |
| Identification of radiation-associated signaling pathways based on the quantification of radiation stress responses in cultured cells                       | Masataka Taga                        | Radiation Effects Research<br>Foundation  | Megumi Sasatani                         | Hiroshima University    | New              |
| Molecular mechanisms of radio-resistance in thyroid cancers   | Aya Tanaka                           | Nagasaki University   | Norisato Mitsutake                      | Nagasaki University     | Conti.           |
| Carcinogenic mechanism of B-cell lymphoma/leukemia by radiation exposure  | Hirotaka Tachibana                   | Central Research Institute of<br>Electric Power Industry  | Megumi Sasatani                         | Hiroshima University    | Conti.           |
| Development of an anticancer drug screening method targeting error-prone repair pathways activated in cancer cells after irradiation                        | Kohzaki Masaoki                      | University of Occupational and<br>Environmental Health, Japan   | Keiji Suzuki                            | Nagasaki University     | Conti.           |
| Study on the effect of irradiation on the structure and functions of laminin molecule in basement membarane   | Koshikawa Naohiko                    | Tokyo Insititute of Technology  | Osamu Kaminuma                          | Hiroshima University    | Conti.           |

| Joint Research Title  | Joint Researcher<br>(Representative) | Affiliated Organization  | Resident Researcher<br>(Representative) | Affiliated Organization | New. •<br>Conti. |
|---|--------------------------------------|--|---|-------------------------|------------------|
| Preliminary study for genome analysis using preserved blood specimens from atomic bomb survivors  | Tomonori Hayashi                     | Radiation Effects Research<br>Foundation   | Shinya Matsuura                         | Hiroshima University    | Conti.           |
| Genomic and epigenomic analysis for risk assessment of low-dose and low-dose-rate radiation carcinogenesis  | Chizuru Tsuruoka                     | National Institutes for Quantum<br>Science and Technology                                | Megumi Sasatani                         | Hiroshima University    | New              |
| Analysis of the malignant transformation mechanism of highly metastatic cells derived from a metastasis model of small cell lung cancer.  | Shuichi Sakamoto                     | Microbial Chemistry Research<br>Foundation   | Megumi Sasatani                         | Hiroshima University    | Conti.           |
| Mathematical model for understanding of the early onset hypothesis and the accumulated transition carcinogenesis.   | Isao Kawaguchi                       | National Institutes for Quantum<br>Science and Technology                                | Yoshinaga Shinji                        | Hiroshima University    | New              |
| Mechanisms of radiation carcinogenic susceptibility, explored from changes in the tissue microenvironment   | Masaaki Sunaoshi                     | National Institutes for Quantum<br>Science and Technology                                | Keiji Suzuki                            | Nagasaki University     | Conti.           |
| Long-term control of glioma stem cell population recurrence by radiation and splicing inhibition  | MICHIYA SUGIMORI                     | University of Toyama   | Norisato Mitsutake                      | Nagasaki University     | New              |
| Molecular patterns and clinical implications of KRAS, NRAS, BRAF and TERT promoter<br>mutations in colorectal cancer from patients who lived in contaminated by radionuclides<br>and non-contaminated areas of the Republic of Kazakhstan | Saule Rakhimova                      | Center for Life Sciences, PI<br>National Laboratory Astana, AOE<br>Nazarbayev University | Vladimir Saenko                         | Nagasaki University     | New              |
| Analysis of myelodysplastic syndromes/myeloproliferative disorders in atomic bomb survivors   | Daisuke Imanishi                     | Nagasaki Goto Chuoh Hospital   | Yasushi Miyazaki                        | Nagasaki University     | Conti.           |
| Analysis of immune-associated gene expression following ionizing radiation in human tumor organoids   | Ken Okuda                            | Keio University Graduate School<br>of Pharmaceutical Sciences                            | Keiji Suzuki                            | Nagasaki University     | New              |
| Analysis of immune-associated gene expression after ionizing radiation  | Shunji Haruna                        | Keio University Graduate School<br>of Pharmaceutical Sciences                            | Keiji Suzuki                            | Nagasaki University     | New              |
| Research on mechanisms of radiation carcinogenesis and development of cancer treatment  | Yong Chai                            | Jiangxi Provincial Children's<br>Hospital  | Tao-Sheng Li                            | Nagasaki University     | New              |
| Development of 90Y-labeled internal radiation therapy agents -Melecular design for elucidation of radiation damages and decrease in radiation dose  | Fuchigami Takeshi                    | Kanazawa University  | Kodai Nishi                             | Nagasaki University     | Conti.           |
| Study on macrophage mediated radioresistance in cancer cells  | Nakata Yuichiro                      | Graduate school of Medicine,<br>Chiba University   | Osamu Kaminuma                          | Hiroshima University    | New              |
| Examination for the enhanced effect of tumor suppression on senesced pancreatic cancer cells by combination of anti-cancer and targeted drugs   | Nishimoto Arata                      | Sanyo-Onoda City University  | Tao-Sheng Li                            | Nagasaki University     | New              |

| Joint Research Title   | Joint Researcher<br>(Representative) | Affiliated Organization                                      | Resident Researcher<br>(Representative) | Affiliated Organization | New. •<br>Conti. |
|--|--------------------------------------|--|---|-------------------------|------------------|
| Mechanisms of cancer immune surveillance in Radiation Carcinogenesis                                       | Yun Guo                              | Hiroshima University   | Megumi Sasatani                         | Hiroshima University    | Conti.           |
| Comprehensive understanding of host immune surveillance to develop innovative cancer therapies             | Yasuda Tomoharu                      | Hiroshima University   | Osamu Kaminuma                          | Hiroshima University    | New              |
| Expression of p16INK4A as a predictor of survival in patients with poorly differentiated thyroid carcinoma | Mikhail Frydman                      | Minsk City Clinical Oncological<br>Center                    | Vladimir Saenko                         | Nagasaki University     | Conti.           |
| Gene mutation analysis study in basal cell carcinoma   | Kazumitsu Sugiura                    | Fujita Health University                                     | Osamu Kaminuma                          | Hiroshima University    | Conti.           |
| Study of rultraviolet (U.V.) exposed induced senescence in HCE-T cells                                     | Wang Duo                             | University of Occupational and<br>Environmental Health,Japan | Keiji Suzuki                            | Nagasaki University     | Conti.           |
| Development of novel cancer therapeutics focusing on cellular response to DNA replication stress           | Kimiyoshi Yano                       | Hiroshima University   | Satoshi Tashiro                         | Hiroshima University    | New              |

### 【Other important projects】

3.Basic research on development of medical care for radiation disasters

| Influence of type of anthropomorphic phantom on the calibration of whole-body counter                                     | Yuki Tamakuma     | Nagasaki University   | Sumi Yokoyama   | Nagasaki University  | New    |
|---|-------------------|---|-----------------|----------------------|--------|
| Analyses of mechanisms underlying lung fibrosis, and serach for target molecules for drug development                     | Takeshi Nabe      | Setsunan University   | Osamu Kaminuma  | Hiroshima University | Conti. |
| Dose estimation for cattle affected by the nuclear accidnet using nondestructive electron spin resonance                  | YAMAGUCHI Ichiro  | National Institute of Public<br>Health                        | Hiroshi Yasuda  | Hiroshima University | Conti. |
| Mouse model study of clonal hematopoiesis and cardiovascular disease  | Yoichiro Kusunoki | Radiation Effects Research<br>Foundation                      | Megumi Sasatani | Hiroshima University | Conti. |
| Analysis of the pathophysiology for periodontal disease, a risk factor for radiation-induced jaw osteonecrosis            | ΤΑΝΑΚΑ ΥΟSΗΙΗΙΚΟ  | Fukuoka Dental College  | Osamu Kaminuma  | Hiroshima University | Conti. |
| Establishment of a tailor-made exposure control evaluation method based on individual assessment of radiation sensitivity | RYUJI OKAZAKI     | University of Occupational and<br>Environmental Health, Japan | Keiji Suzuki    | Nagasaki University  | New    |
| Analysis of stress responsive substances induced by cerebral ischemia   | Sakai Norio       | HIroshima University  | Satoshi Tashiro | Hiroshima University | Conti. |

| Joint Research Title                                      | Joint Researcher<br>(Representative) | Affiliated Organization | Resident Researcher<br>(Representative) | Affiliated Organization | New. •<br>Conti. |
|---|--------------------------------------|-------------------------|---|-------------------------|------------------|
| Nail dosimetry using EPR(Electron Paramagnetic Resonace ) | Minoru Miyake                        | Kagawa University       | Hiroshi Yasuda                          | Hiroshima University    | New              |

[Other important projects]

4.Basic research on regenerative medicine approaches to improve radiation treatment

| Regenerative medicine in cardiovascular diseases  | Kajikawa Masato    | Hiroshima University Hospital             | Yukihito Higashi | Hiroshima University | Conti. |
|---|--------------------|---|------------------|----------------------|--------|
| Elucidating the role of T cell repertoire variation in disease pathogenesis   | Inoue Kimiko       | Bioresource Research Center,<br>RIKEN     | Osamu Kaminuma   | Hiroshima University | Conti. |
| Analysis of the function of cardiac muscle cells  | Chikara Goto       | Hiroshima International<br>University     | Yukihito Higashi | Hiroshima University | Conti. |
| Analysis of inflamatory responses induced by necrotic sells   | KIsaburo NAGATA    | Toho University                           | Osamu Kaminuma   | Hiroshima University | Conti. |
| Reprogramming of human bone marrow-derived mesenchymal stem cells and treatment of radiation damage to normal tissues | Yoshio Hosoi       | Tohoku University                         | Shinya Matsuura  | Hiroshima University | Conti. |
| Basic research on regenerative medicine approaches to improve radiation treatment                                     | Shouhua Zhang      | Jiangxi Provincial Children's<br>Hospital | Tao-Sheng Li     | Nagasaki University  | New    |
| Investigation of the preventive effect of radiation pneumonitis by staniocalcin-1                                     | Masahiko Kanehira  | Yamanashi University                      | Osamu Kaminuma   | Hiroshima University | New    |
| Research on the function and mechanism of cardiomyocyte physiology  | Masafumi Takahashi | Jichi Medical University                  | Yukihito Higashi | Hiroshima University | Conti. |
| Musculoskeletal Regenerative Therapy with MSC-derived Exosomes  | NOBUO ADACHI       | Hiroshima University                      | Yukihito Higashi | Hiroshima University | Conti. |
| Investigation of the effects of mesenchymal stem cells on radiation-induced cardiovascular lesions                    | Takahiro Harada    | Hiroshima University                      | Yukihito Higashi | Hiroshima University | Conti. |

#### [Other important projects]

5. Evaluative research on health effects and health risks associated with radiation disasters

| Association of radiation exposure with atherosclerosis and cardiovascular disease among atomic bomb survivors | Nobuo Sasaki | Hiroshima Atomic Bomb Casualty<br>Council | Yukihito Higashi | Hiroshima University | Conti. |
|---|--------------|---|------------------|----------------------|--------|
|---|--------------|---|------------------|----------------------|--------|

| Joint Research Title   | Joint Researcher<br>(Representative) | Affiliated Organization   | Resident Researcher<br>(Representative) | Affiliated Organization      | New. •<br>Conti. |
|--|--------------------------------------|---|---|------------------------------|------------------|
| Clonal hematopoiesis-related somatic mutation analyses in Hiroshima atomic-bomb survivors  | Kengo Yoshida                        | Radiation Effects Research<br>Foundation  | Yasushi Miyazaki                        | Nagasaki University          | Conti.           |
| Association between parity status and after great disaster psychological stress tolerance  | Yasukawa Sumiyo                      | Faculty of Health Sciences,<br>Okayama University Institute of<br>Academic and Research | Tetsuya Ohira                           | Fukushima Medical University | Conti.           |
| Relationship between dietary patterns after radiation disasters and future mental distress:<br>Fukushima Prefectural Health Survey   | Junko Yoshida                        | Fukuyama University   | Tetsuya Ohira                           | Fukushima Medical University | Conti.           |
| Effects of Radiation Exposure on Kideny  | Nishiyama Akira                      | Kagawa University   | Yukihito Higashi                        | Hiroshima University         | Conti.           |
| Association between Laughter and Lifestyle Diseases after the Great East Japan<br>Earthquake   | Eri Eguchi                           | Fukushima Medical University  | Tetsuya Ohira                           | Fukushima Medical University | Conti.           |
| Methodology for evaluating surface collection efficiency of filters used for ambient radioactive aerosols  | Manaya Taoka                         | Hirosaki University   | Tetsuo ISHIKAWA                         | Fukushima Medical University | New              |
| The effects of post-disaster lifestyle changes on the results of health checkups among children and adolescents  | Yamagishi Kazumasa                   | Juntendo University Graduate<br>School of Medicine                                      | Tetsuya Ohira                           | Fukushima Medical University | Conti.           |
| Role of short-chain fatty acids in intestinal immune system  | Chiharu Nishiyama                    | Tokyo University of Science   | Osamu Kaminuma                          | Hiroshima University         | Conti.           |
| Long-term trend of the subjective health: the Fukushima health management survey   | Nagai Masato                         | Iwate Medical University  | Tetsuya Ohira                           | Fukushima Medical University | Conti.           |
| The impact of a disaster on smoking behavior after the Great East Japan Earthquake   | Risa Murakami                        | Kobe University Graduate School<br>of Health Sciences                                   | Tetsuya Ohira                           | Fukushima Medical University | Conti.           |
| Improvement of the empirical formula for radon exhalation rate from soil surface in creating a lung cancer risk potential map due to radon inhalation  | Rui Kudo                             | Hirosaki University   | Tetsuo ISHIKAWA                         | Fukushima Medical University | New              |
| An interview survey to search for the causes of decreased access to cancer care after the 2011 Fukushima triple disaster   | Akihiko Ozaki                        | Jyoban Hospital of Tokiwa<br>Foundation   | Masaharu Tsubokura                      | Fukushima Medical University | Conti.           |
| Association of PTSD symptoms, mental distress, and CVD among residents in the evacuation area of Fukushima after the Great East Japan Earthquake   | Kazuhide Tezuka                      | Sakamoto Mental Health Center   | Tetsuya Ohira                           | Fukushima Medical University | Conti.           |
| The incidence of diabetes on the association with psychological distress in the cohort of evacuee after the Great East Japan Earthquake in Fukushima, Japan: A 10-year follow-up of the Fukushima Health Management Survey | Ryo KAWASAKI                         | Graduate School of Medicine,<br>Osaka University  | Seiji Yasumura                          | Fukushima Medical University | Conti.           |

| Joint Research Title  | Joint Researcher<br>(Representative) | Affiliated Organization   | Resident Researcher<br>(Representative) | Affiliated Organization      | New. •<br>Conti. |
|---|--------------------------------------|---|---|------------------------------|------------------|
| Radon Dynamics in Outdoor Environment - Study on Influence Factors on Radon Exhalation<br>Rate from Soil and Accumulation Chamber Technique | Qianhao JIN                          | Graduate School of Frontier<br>Sciences, The University of<br>Tokyo | Tetsuo Ishikawa                         | Fukushima Medical University | New              |
| Difference in Mortality Trends among the elderly by whether they evacuated after the Great East Japan Earthquake                            | Yuta Inoue                           | Osaka University  | Seiji Yasumura                          | Fukushima Medical University | Conti.           |
| Association between sleep state and mental health state among elementary school children  | Takeshi Tanigawa                     | Juntendo University Graduate<br>School of Medicine                  | Tetsuya Ohira                           | Fukushima Medical University | Conti.           |
| Analysis of the effects of Pb-210 and Po-210 ingested through food on the incidence of human cancer   | Cai Yu                               | The University of Tokyo   | Yoshinaga Shinji                        | Hiroshima University         | Conti            |

### 【Other important projects】

6.Application of radioisotopes to medical diagnosis and treatment

| Development of novel radiotheranostics methods targeting tumor hypoxia  | Yoichi Shimizu     | Kyoto University  | ZHAO Songji        | Fukushima Medical University | Conti. |
|---|--------------------|---|--------------------|------------------------------|--------|
| Development of probes for radiotheranostics containing alpha emitter radionuclides  | Kazuma Ogawa       | Kanazawa University   | Kazuhiro Takahashi | Fukushima Medical University | Conti. |
| Development of a new therapeutic strategy for aspergillosis using radioisotopes   | Masato Tashiro     | Nagasaki University Graduate<br>School of Biomedical Sciences | Kodai Nishi        | Nagasaki University          | Conti. |
| Research on fundamental science and radiochemical characteristics of astatine   | Ichiro Nishinaka   | National Institutes for Quantum<br>Science and Technology     | Kohshin Washiyama  | Fukushima Medical University | Conti. |
| Study on PET image quality improvement by PET scanner   | Yasuyuki Takahashi | Hirosaki University   | Noboru Oriuchi     | Fukushima Medical University | Conti. |
| Study on the molecular mechanism of targeted alpha therapy: intercellular communication through extracellular nucleotide              | Yasuhiro Ohshima   | National Institutes for Quantum<br>Science and Technology     | Naoyuki Ukon       | Fukushima Medical University | Conti. |
| Attempts to treat medical radioactive wasteliquid without relying on drainage equipment   | Masahiro HIROTA    | Shinshu university  | Kodai Nishi        | Nagasaki University          | New    |
| Development of 211At radiolabeling reaction via aryl boronic acid or ester precursor and its application to radio-theranostics probes | Hiroyuki Kimura    | Kanazawa University   | Kazuhiro Takahashi | Fukushima Medical University | Conti. |
| Development of a targeted theranostics platform using 211At   | Hiroyuki Nakamura  | Tokyo Institute of Technology                                 | Kohshin Washiyama  | Fukushima Medical University | Conti. |
|   |                    |   |                    |                              |        |

| Joint Research Title  | Joint Researcher<br>(Representative) | Affiliated Organization                                   | Resident Researcher<br>(Representative) | Affiliated Organization      | New. •<br>Conti. |
|---|--------------------------------------|---|---|------------------------------|------------------|
| Development of nuclear medicine imaging for drug-resistant bacterial infection  | Masato Kobayashi                     | Kanazawa University                                       | Kodai Nishi                             | Nagasaki University          | Conti.           |
| Development of radiotheranostic probes using cancer-specific metabolic mechanisms   | Masato Kobayashi                     | Kanazawa University                                       | Kohshin Washiyama                       | Fukushima Medical University | New              |
| Elucidating the pathogenesis of hematological malignancy via DNA damage and oxidative stress and development of novel therapy                 | Hiroki Goto                          | Kumamoto University                                       | Koki Hasegawa                           | Fukushima Medical University | New              |
| Evaluation of radiopharmaceutical accumulation in Streptococcus pyogenes in imaging of bacterial infections.                                  | Asuka Mizutani                       | Kanazawa University                                       | Kodai Nishi                             | Nagasaki University          | New              |
| Validation of dosimetry analysis using scintigraphy and correlation with renal toxicity of Lu-177-DOTATATE therapy in neuroendocrine neoplasm | Kosuke Yamashita                     | Kumamoto University                                       | Kenta Miwa                              | Fukushima Medical University | Conti.           |
| Establish of analysys method in the oliginal phantom for tau PET imaging  | Kei Wagatsuma                        | Kitasato University                                       | Kenta Miwa                              | Fukushima Medical University | Conti.           |
| Phantom development for 18F-labelled myocardial perfusion imaging tracer  | Koichi Okuda                         | Hirosaki University Graduate<br>School of Health Sciences | Naoyuki Ukon                            | Fukushima Medical University | New              |

### [Other important projects]

7.Medical radiation research

| Development of treatment to overcome radioresistance and inhibit radiation pneumonitis in non-small cell lung cancer            | Noboru Hattori   | Hiroshima University Graduate<br>School of Biomedical and Health<br>Sciences | Yoshihiro Miyata | Hiroshima University | New    |
|---|------------------|--|------------------|----------------------|--------|
| Protective effect of p53 regulators against intestinal damage after multiple-dose irradiation                                   | Yuichi Nishiyama | Tokushima University   | Megumi Sasatani  | Hiroshima University | Conti. |
| Development of novel radiosensitizing therapy for malignant brain tumors using photosensitizer precursor; 5-aminolevulinic acid | Mishima Kazuhiko | Saitama Medical University   | Osamu Kaminuma   | Hiroshima University | Conti. |
| Relationship between radiation information and communication style needed by medical professional students                      | Mitsuyo Itou     | Shizuoka College of Medical<br>Science                                       | Sumi Yokoyama    | Nagasaki University  | New    |
| Evaluation of the Effectiveness of Radiation Protective Gloves in Reducing Orthopedic Surgeons' Hand Exposure                   | Keisuke Nagamoto | University of Occupational and<br>Environmental Health, Japan                | Satoshi Tashiro  | Hiroshima University | New    |
| Research on the mechanism of radiation-induced taste disorders  | Masaru Konishi   | Hiroshima University Hospital  | Shinya Matsuura  | Hiroshima University | Conti. |

| Joint Research Title  | Joint Researcher<br>(Representative) | Affiliated Organization       | Resident Researcher<br>(Representative) | Affiliated Organization      | New. •<br>Conti. |
|---|--------------------------------------|-------------------------------|---|------------------------------|------------------|
| Assessment of DNA damage repair responses after heavy-ion radiation exposure                                      | Asako J. Nakamura                    | Ibaraki University            | Keiji Suzuki                            | Nagasaki University          | Conti.           |
| Study on the Optimization of Dose and Image Quality in Simple Radiography Due to Differences in Radiation Quality | Yoshiaki Hirofuji                    | Fukushima Medical University  | Takashi Ooba                            | Fukushima Medical University | New              |
| Effects of phytoestrogens on radiation response in hypoxic cancer cells   | Takako Sakamoto                      | Jichi Medical University      | Keiji Tanimoto                          | Hiroshima University         | Conti.           |
| Radiation effect of lymphatic epitherial cells  | Ogawa, Keiko                         | Hiroshima University Hospital | Yukihito Higashi                        | Hiroshima University         | New              |

### [Open-topic projects]

| Investigation of the pathophysiology for hereditary neurological diseases   | Masahiro Nakamori     | Hiroshima University  | Kodai Kume       | Hiroshima University | Conti. |
|---|-----------------------|---|------------------|----------------------|--------|
| Neural basis of adaptive behaviors coping stress  | Hidenori Aizawa       | Hiroshima University  | Hideshi Kawakami | Hiroshima University | New    |
| Analysis of the interaction between BMP/Smad and TNFa-induced inflammatory signals.   | Hirata Tsuchiya Shizu | Hiroshima University  | Akiko Nagamachi  | Hiroshima University | Conti. |
| Validation of the association between radiological morphology and proteasome expression in renal cell carcinoma   | Kohei Kobatake        | Hiroshima University  | Osamu Kaminuma   | Hiroshima University | Conti. |
| Search for novel therapeutic targets for knee osteoarthritis  | Morioka Norimitsu     | Hiroshima University, Graduate<br>School of Biomedical and Health<br>Sciences | Keiji Tanimoto   | Hiroshima University | Conti. |
| Research into the application of Tscm cells for the treatment of hepatitis  | Hiromi Abe-Chayama    | Hiroshima University  | Tatsuo Ichinohe  | Hiroshima University | Conti. |
| Investigation of treatment effects of adipose-derived mesenchymal stem cells for psoriasis  | Ryohei Ogino          | Hiroshima University  | Keiji Tanimoto   | Hiroshima University | Conti. |
| Mechanism of novel compounds breaking the resistance of Pseudomonas aeruginosa to antimicrobial agents and effective use of existing antimicrobial agents | HIDEKI FUJII          | Keio University   | Osamu Kaminuma   | Hiroshima University | New    |
| Elucidation of the mechanism of immune response regulation by exercise  | Daisuke Shiiba        | Kurashiki University of Science<br>and the Arts                               | Keiji Tanimoto   | Hiroshima University | Conti. |

| Joint Research Title   | Joint Researcher<br>(Representative) | Affiliated Organization  | Resident Researcher<br>(Representative) | Affiliated Organization | New. •<br>Conti. |
|--|--------------------------------------|--|---|-------------------------|------------------|
| Study on the mechanism of zyogtic genome activation using early rat embryos  | Kohtaro Morita                       | Kyoto University   | Kento Miura                             | Hiroshima University    | Conti.           |
| Analysis of the role of innate lymphoid cell in pulmonary arterial hypertension  | Susumu Nakae                         | Hiroshima University   | Tatsuo Ichinohe                         | Hiroshima University    | Conti.           |
| Development of genome-editing technology useful for creating mouse models to analyze the effects of radiation  | Aoto Kazushi                         | Hiroshima university   | Osamu Kaminuma                          | Hiroshima University    | New              |
| Effect of antibiotic and hormonal therapy on intrauterine microbial colonization in endometriosis  | Khaleque Khan                        | Kyoto Prefectural University of<br>Medicine                                  | Masahiro Nakashima                      | Nagasaki University     | Conti.           |
| Whole genome sequencing of amphibians having undergone remarkable adaptive evolution   | Takeshi Igawa                        | Hiroshima University   | Hideshi Kawakami                        | Hiroshima University    | Conti.           |
| Exploring the regulatory function of protein droplets formed through liquid-liquid phase seperation (LLPS) in cells  | Shin-ichi Tate                       | Hiroshima University   | Satoshi Tashiro                         | Hiroshima University    | Conti.           |
| Functional analysis of primary cilia using knockout cells  | Koji Ikegami                         | Hiroshima University   | Hideshi Kawakami                        | Hiroshima University    | Conti.           |
| Neuroprotective effects of ROCK inhibitors on retinal ganglion cells   | Ayaka Edo                            | Hiroshima University Graduate<br>School of Biomedical and Health<br>Sciences | Satoshi Tashiro                         | Hiroshima University    | Conti.           |
| Evaluation about a novel diagnostic kit-product and automatic immunochromatography-<br>reader for detection of lymph node metastases in breast cancer applying the semi-dry dot-<br>blot method. | RYOTA OTSUBO                         | Nagasaki University Hospital   | Masahiro Nakashima                      | Nagasaki University     | Conti.           |
| Exploration of genetic causes of biparental placental mesenchymal dysplasia  | Hidenobu Soejima                     | Saga University  | Koichiro Yoshiura                       | Nagasaki University     | New              |
| Analysis of Staphylococcus aureus derived from atopic dermatitis and innate immunity   | msasaya moriwaki                     | Hiroshima University   | Osamu Kaminuma                          | Hiroshima University    | Conti.           |
| Elucidation of the mechanisms of environmental chemical toxicity and disease pathogenesis focusing on morphological and functional changes in organelles   | Masatsugu Miyara                     | Hiroshima University   | Nariaki Fujimoto                        | Hiroshima University    | New              |
| Prolyl isomerasea are committed to the onset of both cancer and metabolic syndromes  | Nakatsu Yusuke                       | Hiroshima university   | Akiko Nagamachi                         | Hiroshima University    | Conti.           |
| Analysis of genes involved in the development of neuroblastoma   | Kanda Akifumi                        | Hiroshima University   | Keiji Tanimoto                          | Hiroshima University    | New              |

| Joint Research Title  | Joint Researcher<br>(Representative) | Affiliated Organization  | Resident Researcher<br>(Representative) | Affiliated Organization      | New. •<br>Conti. |
|---|--------------------------------------|--------------------------|---|------------------------------|------------------|
| Elucidation of intramyocardial calcium dynamics in A kinase anchor protein mutants  | Yukiko Nakano                        | Hiroshima University     | Satoshi Tashiro                         | Hiroshima University         | Conti.           |
| Understanding the mechanism of cancer cachexia and the development of a comprehensive therapeutic exercise program              | Mitsunori Miyazaki                   | Hiroshima University     | Keiji Tanimoto                          | Hiroshima University         | Conti.           |
| Functional analysis of calsequestrin mutant protein   | Yuko Noda                            | Hiroshima University     | Yukihito Higashi                        | Hiroshima University         | New              |
| Elucidation of epigenetic regulation for brown fat development  | Haruya Ohno                          | Hiroshima University     | Tatsuya Maruhashi                       | Hiroshima University         | Conti.           |
| Unveiling the treatment resistance of pediatric solid tumor by using circulating tumor cells                                    | Masato Kojima                        | Hiroshima University     | Keiji Tanimoto                          | Hiroshima University         | New              |
| Kinetic analysis of LAT1 expression and mTOR activation in ovarian cancer   | Kosuke Nakamoto                      | Hiroshima University     | Hideshi Kawakami                        | Hiroshima University         | Conti.           |
| Analysis of transplantation and tumor antigen-specific immune response  | Hideki Ohdan                         | Hiroshima University     | Satoshi Tashiro                         | Hiroshima University         | Conti.           |
| Lung diaphragm protection strategy via modulation of spontaneous respiratory effort with partial neuromuscular blockade in ARDS | Tatsutoshi Shimatani                 | Hiroshima University     | Satoshi Tashiro                         | Hiroshima University         | Conti.           |
| inducible gene expression system  | Teruhisa Fujii                       | Hiroshima University     | Satoshi Tashiro                         | Hiroshima University         | Conti.           |
| The analysis of cancer genome and circulation tumor DNA for gastrointestinal cancer   | Yuji Urabe                           | Hiroshima University     | Akiko Nagamachi                         | Hiroshima University         | Conti.           |
| The evaluation of materials to avoid the spread of volatile radionuclides such as At-211, an alpha particle emitter             | Anri Inaki                           | National Cancer Center   | Kohshin Washiyama                       | Fukushima Medical University | New              |
| Functional screening of metabolites produced by plant derived lactic acid bacteria  | Sugiyama Masanori                    | Hiroshima University     | Keiji Tanimoto                          | Hiroshima University         | Conti.           |
| Immunomodulatory Properties of Mesenchymal Stromal Cells Incorporated in Collagen<br>Hydrogel                                   | Koichi Kato                          | Hiroshima University     | Tatsuo Ichinohe                         | Hiroshima University         | Conti.           |
| Create animal models that can capture the hair cycle with high accuracy   | Shoichiro Kokabu                     | Kyushu Dental University | Osamu Kaminuma                          | Hiroshima University         | New              |
| Establishment of bone density evaluation method using a novel bone cutting drill  | Reiko Kobatake                       | Hiroshima University     | Tatsuo Ichinohe                         | Hiroshima University         | New              |

| Joint Research Title  | Joint Researcher<br>(Representative) | Affiliated Organization       | Resident Researcher<br>(Representative) | Affiliated Organization | New. •<br>Conti. |
|---|--------------------------------------|-------------------------------|---|-------------------------|------------------|
| influences of dam exercise on metabolism in offspring   | Fujita Naoto                         | Hiroshima University          | Keiji Tanimoto                          | Hiroshima University    | New              |
| De novo Whole-Genome Assembly of Achillea ptarmica Reveals the Characteristics of carotenoid cleavage dioxygenase gene(CCD4a) | Dong Qin                             | Hiroshima University          | Kodai Kume                              | Hiroshima University    | New              |
| Molecular Basis for Advancing Radiation Medical Science Using Model Cells/Animals   | Takuya IMAMURA                       | Hiroshima University          | Kento Miura                             | Hiroshima University    | New              |
| The investigation of the novel uremic toxin related to the life prognosis for the dialysis patients                           | Yosuke Osaki                         | Hiroshima University Hospital | Tatsuo Ichinohe                         | Hiroshima University    | New              |
| Department of Fisheries, Faculty of Agriculture   | Teuyoshi Tanaka                      | Kindai University             | Tatsuo Ichinohe                         | Hiroshima University    | New              |