Editor-in-Chief:
MDPI: The International Journal of Molecular Sciences

Dear Editor-in-Chief

I appreciate your sending the invitation letter "Submission to **MDPI: The International Journal of Molecular Sciences**" dated **February 24, 2021**.

> Given the interesting work you have contributed to this field, and your expertise in this area of research, we would like to invite you to contribute to this Special Issue (i.e., either a review or research paper). The article processing charge (APC) is CHF 2300 per accepted paper and a discount of 10% could be granted.
> Titian Liu
> Assistant Editor

We established LMP2/β1i-deficient mouse as animal model of spontaneous uterine leiomyosarcoma under the research cooperation of **Prof. Susumu Tonegawa** (Nobel Laureate, Dept. of Biology, MIT). We also reported "Tumourigenetic significance of LMP2/β1i, Cyclin E, Ki-67, Caveolin on uterine mesenchymal tumors, especially leiomyosarcoma". **Clinical Question:** Even **Uterine Rhabdomyosarcoma**, malignant tumor differentiated from mesenchymal or epithelial cells is observed. In particular, malignant tumor mixed and differentiated from mesenchymal cells or epithelial cells, leading to resistance to antitumor agents. Understanding the oncological properties of uterine Rhabdomyosarcoma contributes to developing new targeted antitumor agents for malignant mesenchymal tumors such as uterine leiomyosarcoma. Therefore, we examined the oncological features of uterine Rhabdomyosarcoma. We would like to report the molecular pathogenic mechanism and oncological features of uterine Rhabdomyosarcoma, using molecular pathological studies with antibodies for Cyclin E, Ki-67, Caveolin, and LMP2/β1i as potential biomarker for malignancy and Desmin, Myogenin as potential biomarker in normal myometrium, and uterine leiomyosarcoma. Now, we wish to publish **Research Report** about **Characteristic of Uterine Rhabdomyosarcoma by algorithm of potential biomarkers for uterine mesenchymal tumor**, in "**The International Journal of Molecular Sciences**". Therefore, we send my Biography along with a manuscript of the proposed article for prior approval by the Editor-in-Chief of "**MDPI: The International Journal of Molecular Sciences**".

Title: **Characteristic of Uterine Rhabdomyosarcoma by algorithm of potential biomarkers for uterine mesenchymal tumor**
Authors: Saya Tamura, Takuma Hayashi *et al*.

Abstract:
Background/Aim: Patients with uterine sarcoma comprise 2%–5% of all patients with uterine malignancies; however, the morbidity of uterine sarcoma is low compared with that of other gynecological cancers. For many cases, malignant uterine tumors are diagnosed during follow-up of benign uterine leiomyoma. Of the uterine sarcomas, rhabdomyosarcoma is considered a mixed tumor containing components of epithelial cells and mesenchymal cells. Therefore, the onset of primary uterine rhabdomyosarcoma during follow-up of uterine leiomyoma is extremely rare. Rhabdomyosarcoma is a relatively common malignant tumor in children, but rhabdomyosarcoma in adults is extremely rare, accounting for approximately 3% of all patients with soft tissue sarcoma. Rhabdomyosarcoma in children is highly sensitive to chemotherapy and radiation therapy; however, the response to chemotherapy and radiation therapy in adult rhabdomyosarcoma is low and survival in adult rhabdomyosarcoma with metastatic lesions to other organs is approximately 14 months. We experienced a case of polymorphic rhabdomyosarcoma during the follow-up of a uterine leiomyoma.

Materials and Methods: We examined the oncological properties of uterine rhabdomyosarcoma in adults using molecular pathological techniques on tissue excised from patients with uterine leiomyoma. **Result:** A differential diagnosis was made for this case by molecular pathology, which included candidate biomarkers for uterine smooth muscle tumors. The oncological nature of uterine rhabdomyosarcoma was found to be similar to the oncological properties of uterine leiomyosarcoma. However, in uterine rhabdomyosarcoma, LMP2/β1i-positive cells were clearly observed. **Conclusion:** It is expected that establishing a diagnostic and treatment method targeting characteristics of mesenchymal tumor cells will lead to the treatment of malignant tumors with a low risk of recurrence and metastasis.

Dr. Ikuo Konishi is a specialist in obstetrics and gynecology and a former director of the Japanese Society of Obstetrics and Gynecology and Dr. Konishi is also the director of Asian Gynecology Association.

The material (manuscript and figure) is original research, has not been previously published and has not been submitted for publication elsewhere while under consideration.

Disclosure of potential conflicts of interest:
The authors declare no potential conflicts of interest.

Would you please find and consider them for publishing our manuscript as Short reports in next issue of "**MDPI: The International Journal of Molecular Sciences**". If you have any question, please feel free to contact me at your earliest convenience.

Thanks for your assistance.

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Dr. Takuma Hayashi
Biography: Dr. Hayashi is professor at Shinshu University Graduate School of Medicine since 2002, and also Section Head, National Hospital Organization Kyoto Medical Center, Japan. He received his Ph.D. from Inst. for Medical Science, University of Tokyo in 1994. He was research training as a resident staff in Virology Division, at National Cancer Center, Tokyo Japan for 3 years until 1994 and joined Whitehead Institute for Biomedical Research (WI)/Mass.Inst.Tech.(M.I.T.) that year. He did postdoctoral training in the laboratory of Dr. Rick A. Young (Membership in the National Academy of Sciences, WI/M.I.T.), and also was a research member of USA Project of AIDS vaccine development (**Project Leader: Dr. David Baltimore, Nobel Laureate, Cal.Tech.**). After postdoctoral training, he got faculty position Lecture, Mass. General Hospital (MGH)/Harvard Medical School (HMS) in 1997. He has been studying the antigen presentation system by MHC class I with LMP2-deficient mice, under the cooperation of **Dr. Susumu Tonegawa (Nobel Laureate, M.I.T.)**. He identifies diagnostic biomarkers, LMP2, Cyclin B1 and Cyclin E, for malignant tumor, i.e. uterine leiomyosarcoma, and BRCA1 and S100A4 for ovarian carcinoma. Current research focus: molecular approach of tumorigenesis of uterine leiomyosarcoma and ovarian cancer

Dr. Ikuo Konishi

Biography: Dr. IKuo Konishi is the director of the national hospital organization Kyoto Medical Center and is also an emeritus professor at the Faculty of Medicine, Kyoto University. Dr. Ikuo Konishi is a specialist in obstetrics and gynecology and a former director of the Japanese Society of Obstetrics and Gynecology and Dr. Konishi is also the director of Asian Gynecology Association. Dr. Ikuo Konishi is the Advisory Committee of the World Obstetrics and Gynecology Association (FIGO) Oncology Committee.