



Yuji Hiramatsu

Faculty of Medicine

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Affiliation : Department of Cardiovascular Surgery (B.Q.T., C.T., H.S., M.O., Y.H.).

Theme

- Cardiovascular Surgery
- Artificial Heart

Keyword cardiovascular imaging, artificial heart, signal transduction of aneurysm

Highlight

Major Scientific Interests of the Group

Most of clinical questions throughout the cardiovascular surgery field would be our scientific interests as shown in the projects below. Among them we are now focusing on AI application onto the management in the intensive care unit, and development of a novel hybrid ventricular assist device.

Projects for Regular Students in Doctoral or Master's Programs

- 1) AI application onto the management in the intensive care unit
- 2) Development of a novel hybrid ventricular assist device
- 3) Elucidation of signal transduction in aneurysmal formation

- 4) Elucidation of hematological deterioration during cardiopulmonary bypass
- 5) Development of vitamin K-reduced functional food
- 6) Development of valve simulation imaging technology
- 7) Regenerative medicine using adipose tissue stem cells

Study Programs for Short Stay Students (one week – one trimester)

- 1) Involvement in above clinical and translational researches
- 2) Observership in OR, ICU or laboratories

Other Faculty Members

Associate Professor : Hiroaki Sakamoto, Muneaki Matsubara, Hideyuki Kato, Motoo Osaka

Applications and Prospects

- Pioneering new medical treatments in the field of cardiovascular surgery through the development of new artificial hearts and technologies to inhibit the aneurysm formation.

Literature, intellectual property, work

- Yamashiro Y, Thang BQ, Shin SJ, Lino CA, Nakamura T, Kim J, Sugiyama K, Tokunaga C, Sakamoto H, Osaka M, Davis EC, Wagenseil JE, Hiramatsu Y, Yanagisawa H. Role of thrombospondin-1 in mechanotransduction and development of thoracic aortic aneurysm in mouse and humans. *Circ Res*. 2018 Aug 31;123(6):660-672. doi: 10.1161/CIRCRESAHA.118.313105.
- Goto Y, Hiramatsu Y, Ageyama N, Sato S, Mathis BJ, Kitazawa S, Matsubara M, Sakamoto H, Sato Y. Rolipram plus Sivelestat inhibits bone marrow-derived leukocytic lung recruitment after cardiopulmonary bypass in a primate model. *J Artif Organs* 2018 Oct 3. doi: 10.1007/s10047-018-1071-0.