

# ISEM WEST CHAPTER 2015

(The 3rd Meeting, 26 June 2015, Kyoto)

**講義：マイクロサージャリー：臓器の壁を越えて**  
—ラット膵臓移植モデルから得られること—  
・腸管ドレナージは、小腸吻合技術に  
・膵腎同時移植は、尿管吻合技術に

**実習：ルーペから顕微鏡へ**  
—直径2mmの血管に挑戦—

Keio University



1658  
GALANVS  
GLADIO PECTOR

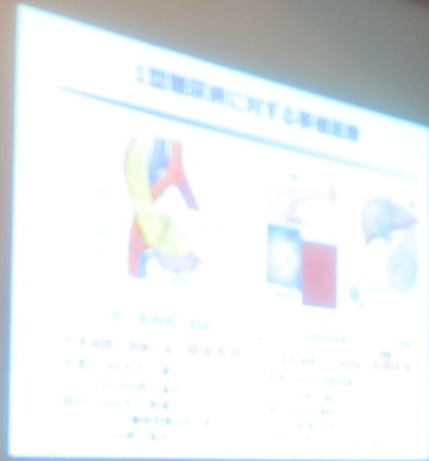
**Eiji Kobayashi, MD, PhD**

**Department of Organ Fabrication,  
Keio University School of Medicine, Japan**

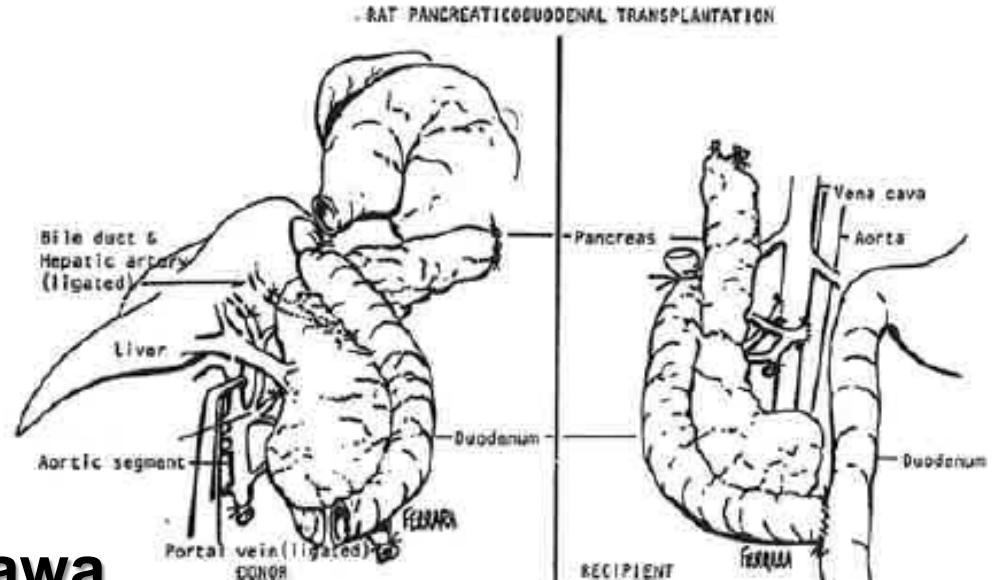
COI:外科教育資材開発につきサンアロー(株)のアドバイザーを務めている

# 臨床・研究における

# 膵臓・膵島移植の話題



京都大学・穴澤先生



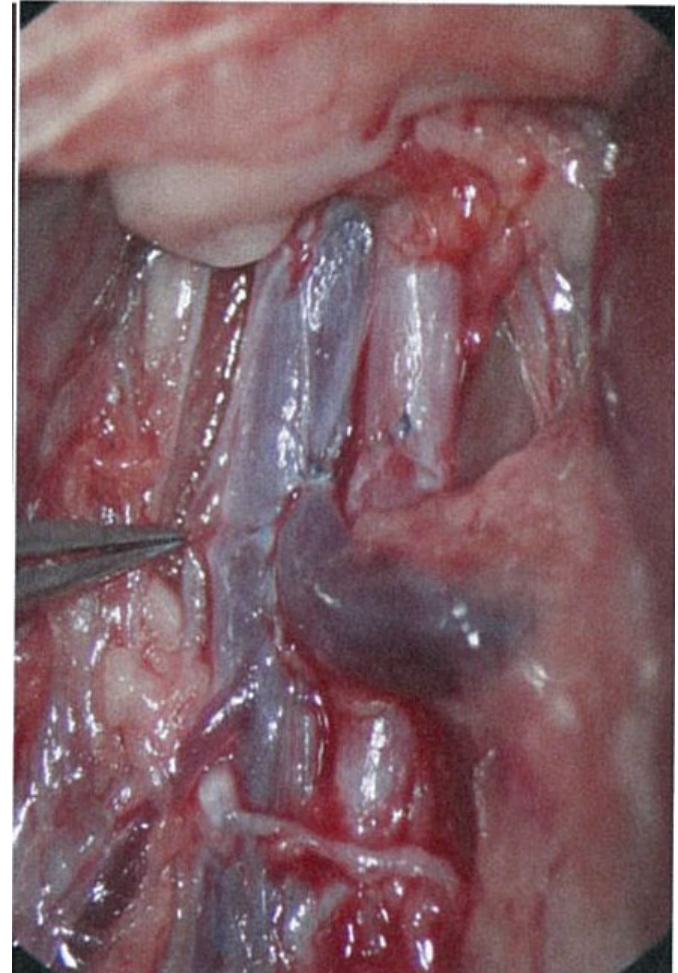
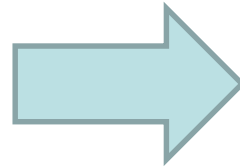
## Professor Masumi Nozawa The 1<sup>st</sup> President of ISEM

**Vascularized transplantation of the rat pancreas without duodenum**

**Nozawa M, Weil R 3rd, McIntosh R, Reemtsma K.**  
Transplantation. 1974 Jan 1;17(1):137-40

# ラット膵臓移植のコツ(血管吻合)

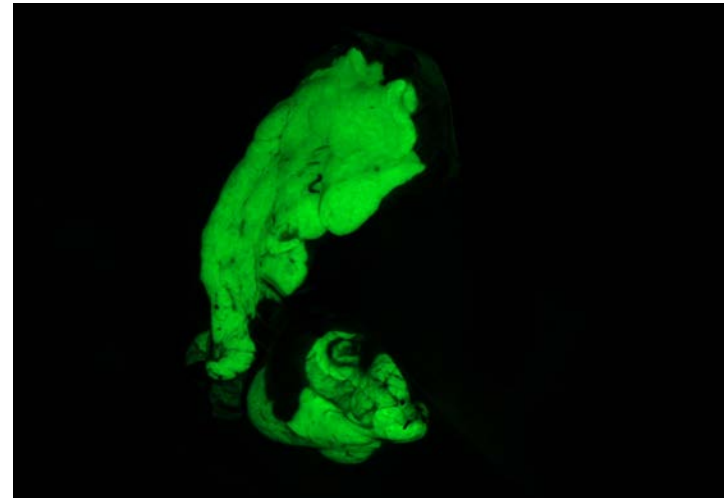
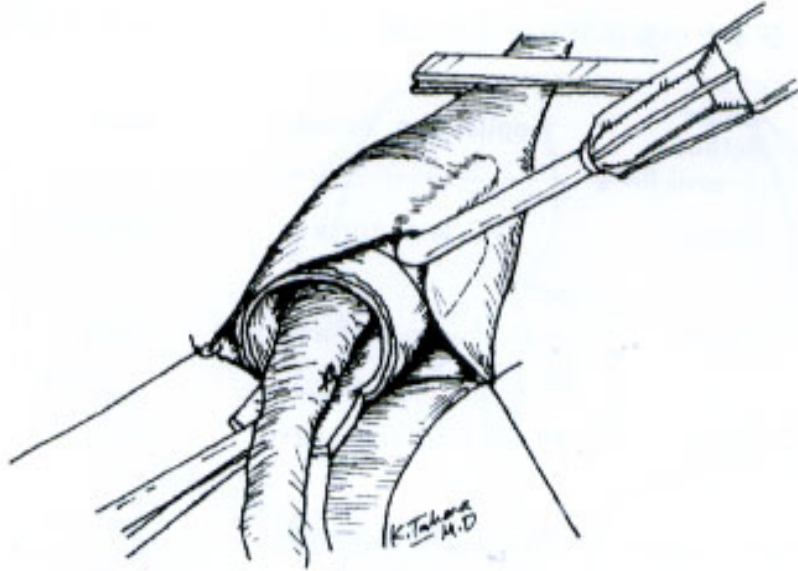
## 手縫い法



(Exp Org Transplant 2015 )

# ラット膵臓移植のコツ(血管吻合)

## カフ法



(Kobayashi E)

## 参考文献(1)

### **Comparison of potentiality to induce graft-versus-host reaction with small bowel, pancreas/spleen, and liver transplantation in the rat**

Kobayashi E, Kamada N, Enosawa S, Toyama N, Delriviere L, Goto S, Kim YI, Miyata M. Clin Exp Immunol. 1993 Jun;92(3):527-31.

### **Successful methods of pancreas transplantation in the rat using a cuff technique**

Kobayashi E, Kamada N, Toyama N, Delriviere L, Goto S, Enosawa S, Walker NI, Green MK, Miyata M. Aust N Z J Surg. 1994 Jul;64(7):491-3

### **The fate of donor splenic lymphocytes in a long-surviving host after combined pancrea/spleen transplantation in the rat**

Kobayashi E, Lord R, Green M, Kamada N, Toyama N, Miyata M, Fujimura A. Transplant Proc. 1999 Sep;31(6):2665-7. No abstract available

### **Detection of membrane-bound and soluble-form MHC class I antigen from rat pancreas/spleen grafts during ongoing rejection**

Kobayashi E, Lord R, Green M, Walker NI, Kamada N, Uchida H, Fujimura A. Transplant Proc. 1999 Dec;31(8):3409-13. No abstract available

## 参考文献(2)

### **Green fluorescent protein-transgenic rat: a tool for organ transplantation research**

Hakamata Y, Tahara K, Uchida H, Sakuma Y, Nakamura M, Kume A, Murakami T, Takahashi M, Takahashi R, Hirabayashi M, Ueda M, Miyoshi I, Kasai N, Kobayashi E. Biochem Biophys Res Commun. 2001 Aug 31;286(4):779-85

### **High-dose tacrolimus and lengthy survival of the combined rat pancreas/spleen graft in a high-responder combination**

Sakuma Y, Uchida H, Nagai H, Kobayashi E. Transpl Immunol. 2001 Oct;9(1):37-42

### **Lympho-myeloid chimerism achieved by spleen graft of green fluorescent protein transgenic rat in a combined pancreas transplantation model**

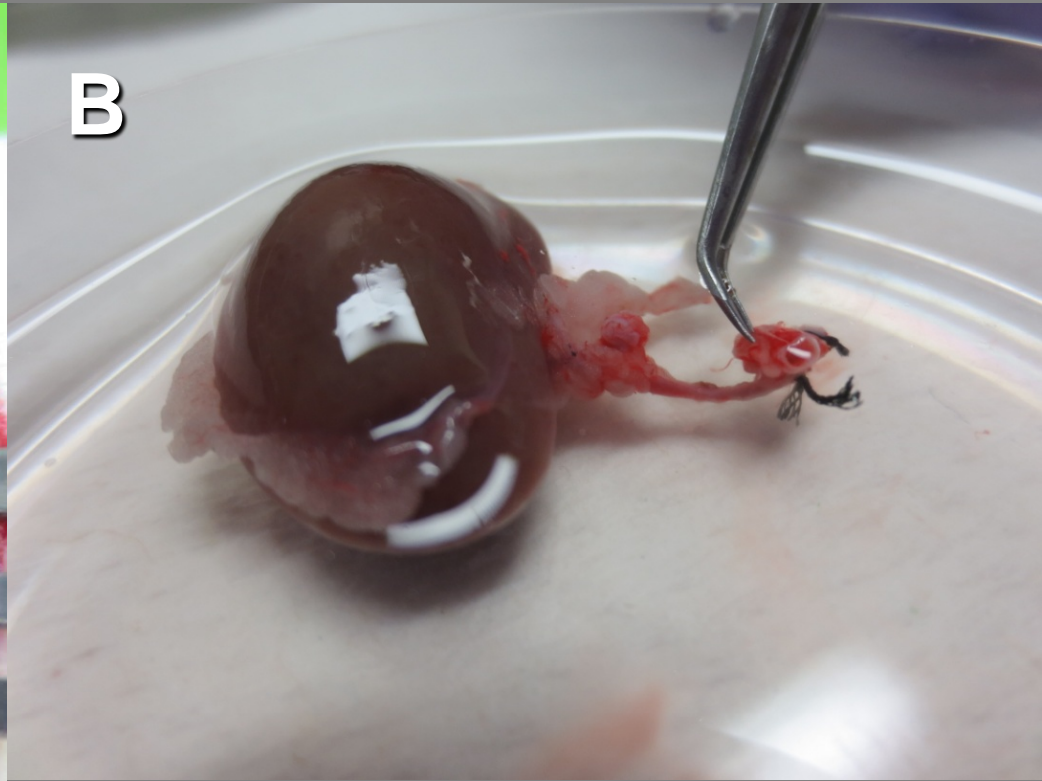
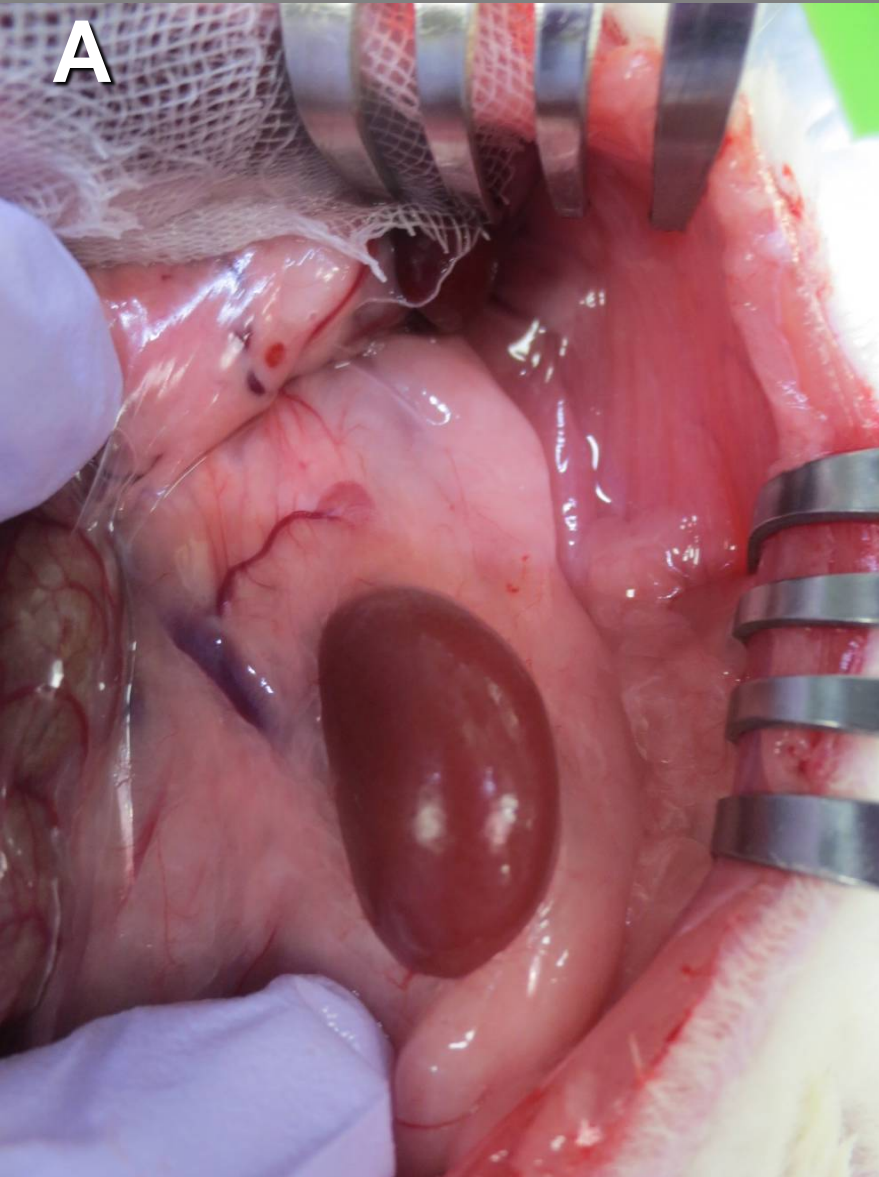
Sakuma Y, Sato Y, Inoue S, Kaneko T, Hakamata Y, Takahashi M, Murakami T, Kobayashi E. Transpl Immunol. 2004 Jan;12(2):115-22

### **Organ preservation using a photosynthetic solution**

Yamaoka I, Kikuchi T, Arata T, Kobayashi E.

Transplant Res. 2012 Apr 24;1(1):2. doi: 10.1186/2047-1440-1-2

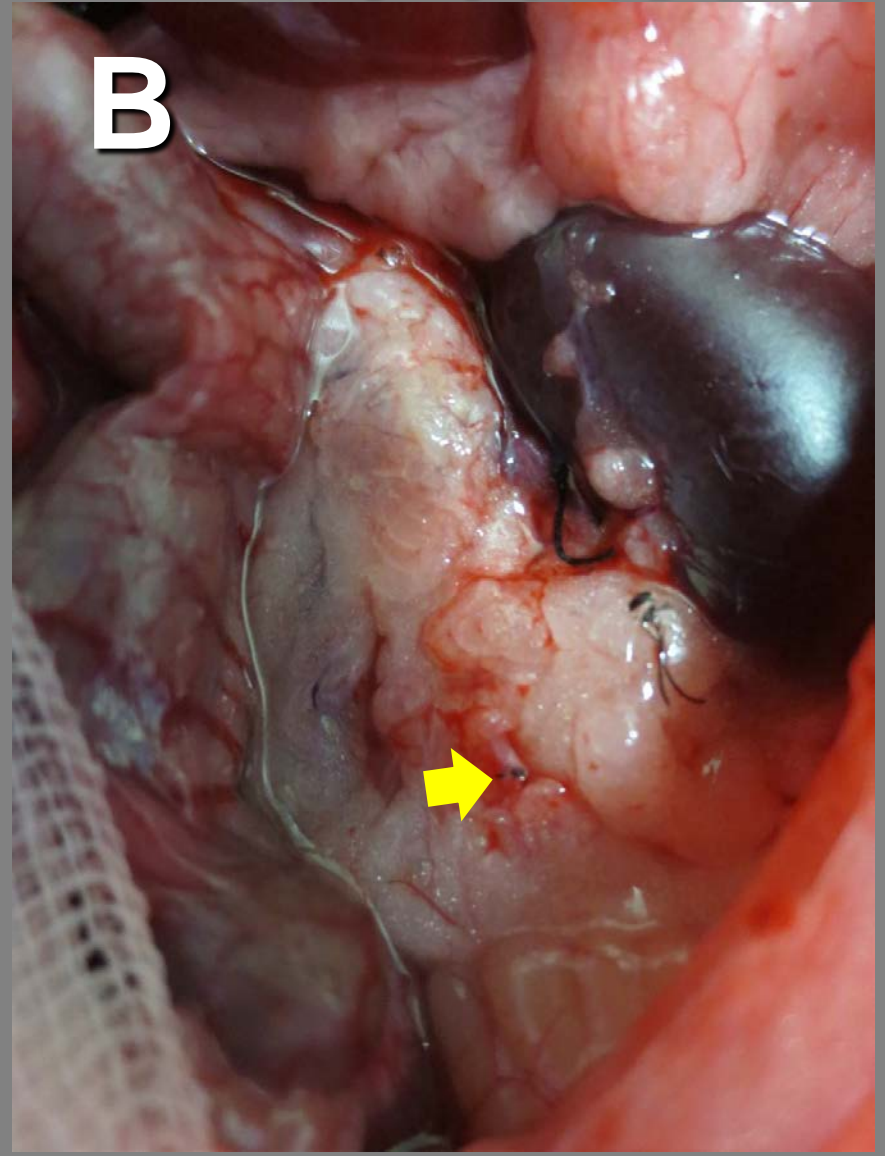
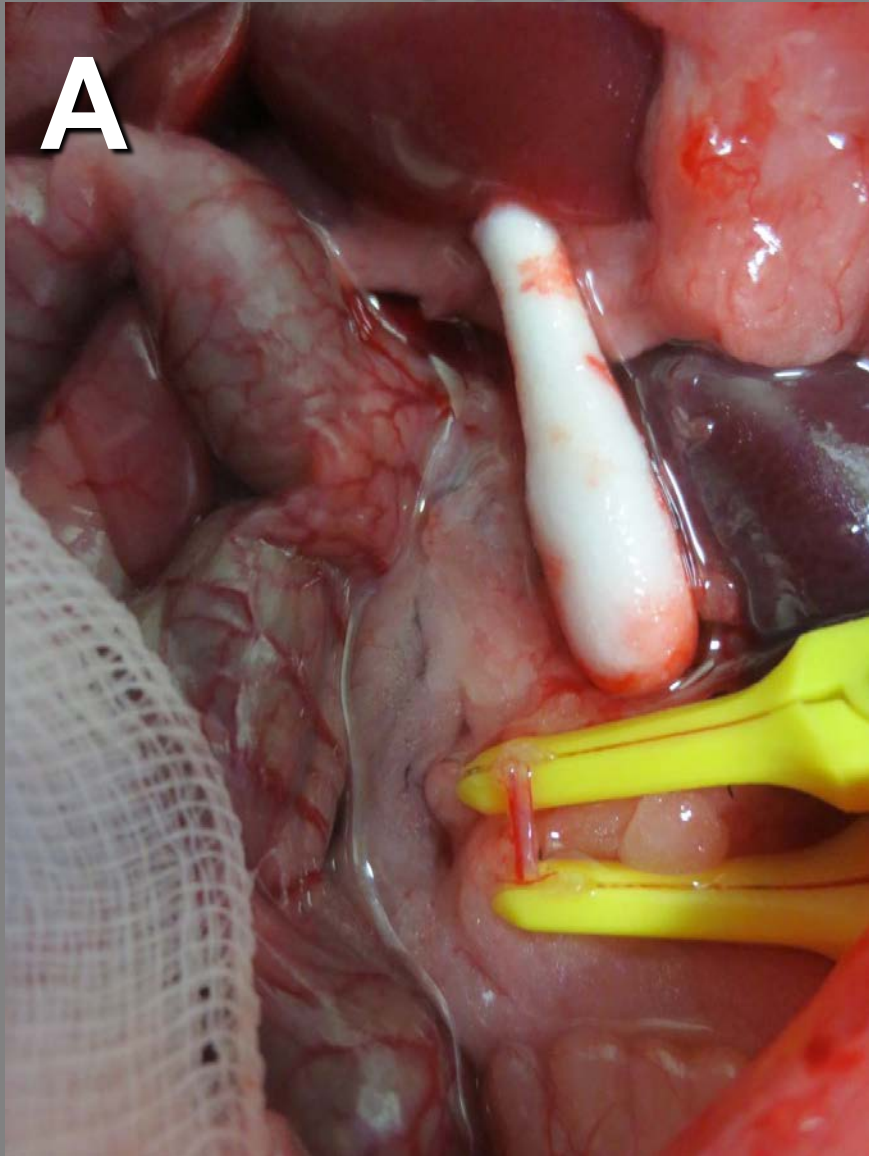
# ラット腎移植のコツ(血管吻合)



(Kobayashi E)



# ラット腎移植のコツ(尿管吻合)



(Kobayashi E)

## 参考文献

### **Training protocol for feline renal transplantation, using rat vascular anastomosis**

Iwai S, Endo K, Kobayashi E.  
Microsurgery. 2006;26(1):8-12.

### **Use of sphingosine-1-phosphate 1 receptor agonist, KRP-203, in combination with a subtherapeutic dose of cyclosporine A for rat renal transplantation.**

Fujishiro J, Kudou S, Iwai S, Takahashi M, Hakamata Y, Kinoshita M, Iwanami S, Izawa S, Yasue T, Hashizume K, Murakami T, Kobayashi E.  
Transplantation. 2006 Sep 27;82(6):804-12

### **Impact of normothermic preservation with extracellular type solution containing trehalose on rat kidney grafting from a cardiac death donor**

Iwai S, Kikuchi T, Kasahara N, Teratani T, Yokoo T, Sakonju I, Okano S, Kobayashi E.  
PLoS One. 2012;7(3):e33157. doi: 10.1371/journal.pone.0033157. Epub 2012 Mar 21

### **Non-invasive magnetic resonance imaging in rats for prediction of the fate of grafted kidneys from cardiac death donors.**

Kaimori JY, Iwai S, Hatanaka M, Teratani T, Obi Y, Tsuda H, Isaka Y, Yokawa T, Kuroda K, Ichimaru N, Okumi M, Yazawa K, Rakugi H, Nonomura N, Takahara S, Kobayashi E.  
PLoS One. 2013 May 7;8(5):e63573. doi: 10.1371/journal.pone.0063573. Print 2013

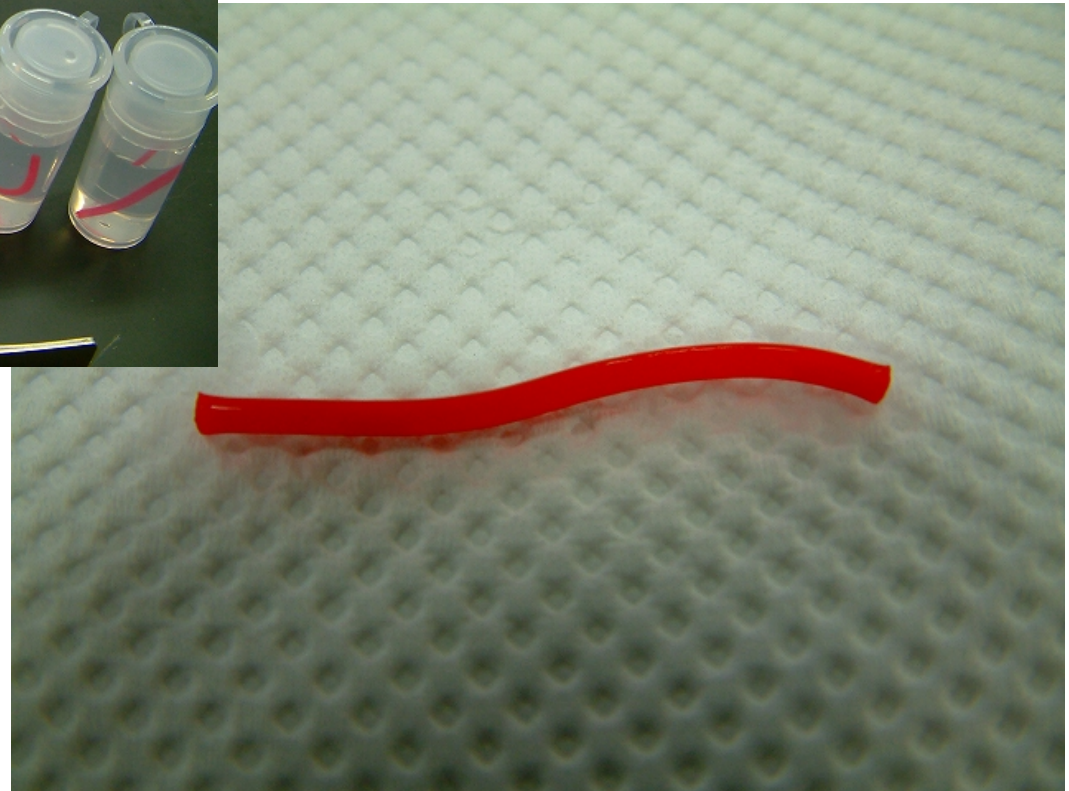
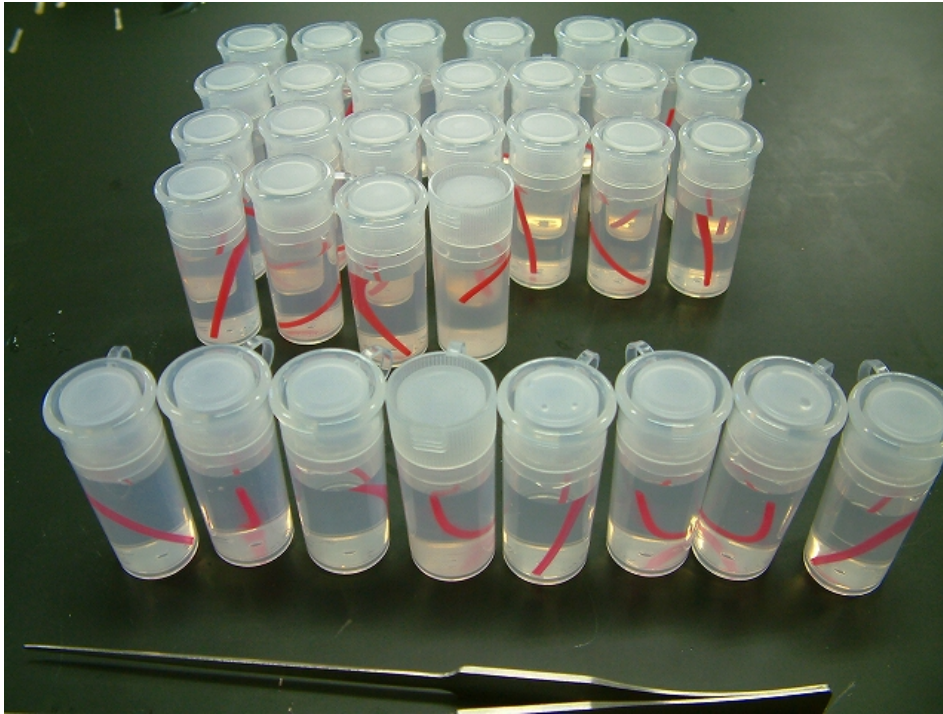
# ハンズオン

## 直径2mmの血管に挑戦!

### 材料

- ・マイクロ道具一式
- ・両端針付き 8-0 非吸収のモノフィラメント (Asflex 8-0, (株)クラウンジュン・コウノ)
- ・卓上顕微鏡 vs ルーペ

# 材料：生きた動物を使わないトレーニング



COI:サンアロー(株)と開発中の血管モデルです

# 本日のハンズオン

8-0で端端吻合  
Interrupted Suture  
(制限時間: 20分)

