

## Centers of Advanced Medicine

### Stable Isotope Medical Application Center

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#### General Summary

The metabolic study in a living body using stable isotope labeling compounds is useful for medical analysis. Many tests of biological functional which are safe, rapid, and highly sensitive will be developed for clinical use by using stable isotope labeling compounds. We will put stable isotope tests of clinical function to practical use to analyze energy metabolism, nutritional absorption, external secretion from the pancreas, and pharmacokinetics. The systematic translational research leading to clinical application from fundamental studies, including the development of new stable isotope labeling compounds, cells, and animal studies, is necessary to accelerate the practical use of stable isotope biology for functional evaluation. For this purpose, we have performed a project entitled “Building for the Stable Isotope Applicable Medicine” which is supported by the High Technology Research Center Project for Private University from the Ministry of Education, Culture, Sports, Science and Technology of Japan (2011 to 2015). We have also established the Stable Isotope Medicine Application Center in The Jikei University. This center will support the chemosynthesis of stable isotope compounds, basic experiments using cells and animals, and clinical application studies.

#### Publications

**Matsumoto M, Matsuura T, Aoki K, Maehashi H, Iwamoto T, Ohkawa K, Yoshida K, Yanaga K, Takada K.** An efficient system for secretory production of fibrinogen using a hepatocellular carcinoma cell line. *Hepatol Res.* 2015; **45**: 315-25.  
**Nakada K<sup>1</sup>, Ikeda M, Takahashi M, Kinami S, Yoshida M, Uenosono Y, Kawashima Y, Oshio A, Suzukamo Y, Terashima M, Kodera Y.** Characteristics and clinical relevance of postgastroectomy syndrome assessment scale (PGSAS)-45: newly developed integrated questionnaires for assessment of living status and quality of life in postgastroectomy patients. *Gastric Cancer.* 2015; **18**: 147-58.  
**Miwa H, Kusano M, Arisawa T, Oshima T, Kato M, Joh T, Suzuki H, Tominaga K, Nakada K, Nagahara A, Futagami S, Manabe N, Inui A, Haruma K, Higuchi K, Yakabi K, Hongo M, Uemura N, Kinoshita Y, Sugano K, Shimosegawa T; Japanese Society of Gastroenterology.** Evidence-based clinical practice guidelines for functional dyspepsia. *J Gastroenterol.* 2015;

**50**: 125-39.

**Namikawa T, Hiki N, Kinami S, Okabe H, Urushihara T, Kawahira H, Fukushima N, Kodera Y, Yumiba T, Oshio A, Nakada K.** Factors that minimize postgastroectomy symptoms following pylorus-preserving gastroectomy: assessment using a newly developed scale (PGSAS-45). *Gastric Cancer.* 2015; **18**: 397-406.

**Takiguchi N, Takahashi M, Ikeda M, Inagawa S, Ueda S, Nobuoka T, Ota M, Iwasaki Y, Uchida N, Kodera Y, Nakada K.** Long-term quality-of-life comparison of total gastroectomy and proximal gastroectomy by postgastroectomy syndrome assessment Scale (PGSAS-45): a nationwide multi-institutional study. *Gastric Cancer.* 2015; **18**: 407-16.

**Misawa K, Terashima M, Uenosono Y, Ota S, Hata H, Noro H, (Nakada K), et al.** Evaluation of postgastroectomy symptoms after distal gastroectomy with Billroth-I reconstruction using the Postgastroectomy Syndrome Assessment Scale-45 (PGSAS-45). *Gastric Cancer.* 2015; **18**: 675-81.

**Kawahira H, Kodera Y, Hiki N, Takahashi M, Itoh S, Mitsumori N, Kawashima Y, Namikawa T, Inada T, Nakada K.** Optimal Roux-en-Y reconstruction after distal gastrectomy for early gastric cancer as assessed using the newly developed PGSAS-45 scale. *Surg Today*. 2015; **45**: 1307-16.

**Mizuno H, Matsuhashi N, Sakaguchi M, Inoue S, Nakada K, Higuchi K, Haruma K, Joh T.** Recent effectiveness of proton pump inhibitors for severe reflux esophagitis: the first multicenter prospective study in Japan. *J Clin Biochem Nutr*. 2015; **57**: 233-8.

**Matsuhashi N, Kudo M, Yoshida N, Murakami K, Kato M, Sanuki T, Oshio A, Joh T, Higuchi K, Haruma K, Nakada K.** Factors affecting response to proton pump inhibitor therapy in patients with gastroesophageal reflux disease: a

multicenter prospective observational study. *J Gastroenterol*. 2015; **50**: 1173-83.

**Tanizawa Y, Tanabe K, Kawahira H, Fujita J, Takiguchi N, Takahashi M, Ito Y, Mitsumori N, Namikawa T, Oshio A, Nakada K; Japan Post-gastrectomy Syndrome Working Party.** Specific features of dumping Syndrome after various types of gastrectomy as assessed by a newly developed integrated questionnaire, the PGSAS-45. *Dig Surg*. 2016; **33**: 94-103.

**Kuwata H, Iwasaki M, Shimizu S, Minami K, Maeda H, Seino S, Nakada K, Nosaka C, Murotani K, Kurose T, Seino Y, Yabe D.** Meal sequence and glucose excursion, gastric emptying and incretin secretion in type 2 diabetes: a randomised, controlled crossover, exploratory trial. *Diabetologia*. 2016; **59**: 453-61.