

Gastroenterology and Hepatology

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We have been providing advanced medicine for gastroenterological and hepatic diseases, introducing new technologies and methods such as endoscopic therapy, elastography for liver diseases, breath test for SIBO (small intestinal bacterial overgrowth), and allogenic mesenchymal stem cell (MSC) infusion for liver cirrhosis. Our interests are focused on not only well-known diseases but also undiagnosed diseases and conditions. To manage and treat undiagnosed diseases and conditions, we emphasize fundamental and translational researches as well as clinical research. One of our top interests is regenerative medicine utilizing allogenic MSC infusion targeting liver cirrhosis and gastroenterological stenosis. Researchers of our fibrosis & regeneration team pay a great deal of attention to the potential effects on microenvironment of exosomes which are derived from the transplanted cells. The other teams focus on carcinogenesis, immune system of gastroenterological and hepatic diseases, and development of minimally invasive medical device. All of our laboratory members energetically address development of next-generation diagnosis and therapy for holistic medicine as clinician scientists.



Research and Clinical interests

1. Allogenic mesenchymal stem cell (MSC) infusion for regenerative medicine
2. Exosome-mediated intercellular communication and formation of microenvironment
3. Interorgan communication through neural relay
4. Development of minimally invasive devices and non-biomaterial models for hands-on training

Materials and methods for collaborations

1. Clinical trial of MSC infusion aiming improvement of liver fibrosis and activate liver regeneration.
2. Peroral endoscopic myotomy (POEM) for achalasia

Links to additional info

1. Terai S, Tsuchiya A. Status of and candidates for cell therapy in liver cirrhosis: overcoming the "point of no return" in advanced liver cirrhosis. J Gastroenterol. 2017 Feb;52(2):129-140. <https://www.ncbi.nlm.nih.gov/pubmed/27631592>
2. Inoue R, Kamimura K, Nagoya T, Sakai N, Yokoo T, Goto R, Ogawa K, Shinagawa-Kobayashi Y, Watanabe-Mori Y, Sakamaki A, Abe S, Kamimura H, Miyamura N, Nishina H, Terai S. Effect of a neural relay on liver regeneration in mice: activation of serotonin release from the gastrointestinal tract. FEBS Open Bio. 2018 Jan 31;8(3):449-460. <https://www.ncbi.nlm.nih.gov/pubmed/29511622>
3. Sato H, Mizuno KI, Sato Y, Hashimoto S, Hayashi K, Ikarashi S, Honda Y, Yokoyama J, Terai S. Development and use of a non-biomaterial model for hands-on training of endoscopic procedures. Ann Transl Med. 2017 Apr;5(8):182. <https://www.ncbi.nlm.nih.gov/pubmed/28616397>
4. Lab HP (English). https://www.med.niigata-u.ac.jp/in3/index_eng.html