Centers of Advanced Medicine
Stable Isotope Medical Application Center

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General Summary

The Spontaneously Diabetic Torii (SDT)-Fatty rat model of diabetes was used to accumulate data and analyze until an age of 40 weeks using the fasting ^{13}C-glucose breath test on the onset of liver insulin resistance.
For clinical research, we promoted practical use of liver insulin resistance evaluation with the fasting ^{13}C-glucose breath test for patients with cardiovascular disease.
In addition, we are attempting simultaneous analysis of vitamin D metabolites in human serum using an automatic high performance liquid chromatography-mass spectrometer.

Publications

Taki T, Hoya Y, Nakada K, Kawamura M, Iwasaki T, Murakami K, Okamoto T, Mitsumori N, Yanaga K. Gastric Emptying Improved Significantly After PRG Compared to Billroth-I Reconstruction: Assessment of Gastric Emptying With a ^{13}C-Breath Test. *Anticancer Res.* 2019 Jun; **39**(6): 3227-3230. doi: 10.21873/anticanres.13463. PMID: 31177172.
Mezaki Y, Kato S, Nishikawa O, Takashima I, Tsubokura M, Minowa H, Asakura T, Matsuura T, Senoo H. Measurements of radiocesium in animals, plants and fungi in Svalbard after the Fukushima Daiichi nuclear power plant disaster. *Heliyon.* 2019 Dec 24; **5**(12): e03051. doi: 10.1016/j.heliyon.2019.e03051. PMID: 32083202; PMCID: PMC7019073.
Ezaki H, Matsuura T, Ayaori M, Ochi S, Mezaki Y, Masaki T, Taniwaki M, Miyake T, Sakurada M, Ikewaki K. The fasting ^{13}C-glucose breath test is a more sensitive evaluation method for diagnosing hepatic insulin resistance as a cardiovascular risk factor than HOMA-IR. *Clin Chim Acta.* 2020 Jan; **500**: 20-27. doi: 10.1016/j.cca.2019.09.014. Epub 2019 Oct 10. PMID: 31606399.