

2019 Annual Report of TRMC

R1年度TMRC業績（2019.04.01～2020.03.31）

特記事項

1. 感染体宿主動態学分野の川口敦史准教授が教授に昇任した。
2. 全学戦略枠により幹細胞治療分野を新設し、山崎聰教授、全孝静助教が着任した。
3. 卓越研究員制度により、循環器内科学分野に藤田 諒助教が着任した。
4. 資源解析分野の三輪佳宏講師が令和2年4月1日付けで理化学研究所バイオリソースセンター遺伝子材料開発室の室長に栄転した。

共同利用・共同拠点申請のための共同研究

遺伝子改変マウス作製共同研究(6件)

滋賀医科大学 依馬正次先生 ゲノム改変技術の改良についての共同研究 3系統

東京大学 脇 裕典先生 ノックインマウス 2系統

理化学研究所 中富浩文先生 点変異導入マウス 1系統

NGSの共同研究(14件)

昭和大学 茶谷昌弘先生 破骨細胞の培養系分野における RNAseq 解析 4検体、

東京慈恵会医科大学 暮地本宙己先生 宇宙実験マウスサンプルシェア胃検体の RNAseq 解析 6検体

三重大学 濑川大雄先生 水生動物由来細菌のゲノム解析 4検体

総論文数（90編 重複有）**IF>7以上を赤で示す。**

総獲得研究費数（40件）

統合医科学研究部門

認知行動神経科学

Publication list from Matsumoto's Lab (1)

1. Kawai T, Yamada H, Sato N, Takada M, **Matsumoto M.** Preferential Representation of Past Outcome Information and Future Choice Behavior by Putative Inhibitory Interneurons Rather Than Putative Pyramidal Neurons in the Primate Dorsal Anterior Cingulate Cortex. *Cerebral Cortex*. 2019; 29(6): 2339-2352. doi: 10.1093/cercor/bhy103.

Grant list (3)

1. JST CREST 代表
2. 科学研究費 新学術領域（計画） 代表
3. 科学研究費 特別推進研究 分担

感染体宿主動態学分野

Publication list form Kawaguchi's Lab (2)

- Lee S, Ishitsuka A, Noguchi M, Hirohama M, Fujiyasu Y, Petric PP, Schwemmle M, Staeheli P, Nagata K, **Kawaguchi A**. Influenza restriction factor MxA functions as inflamasome sensor in the respiratory epithelium. *Sci Immunol*. 2019; 4(40): pii eaau4643. doi: 10.1126/sciimmunol.aau4643.
- Sekiya T, Kato K, **Kawaguchi A**, Nagata K. Involvement of CTCF in transcription regulation of EGR1 at early G1 phase as an architecture factor. *Sci. Rep.* 2019; 9(1): 329. doi: 10.1038/s41598-018-36753-x.

Patent list (1)

- 佐藤雄介、西澤精一、田邊貴昭、**川口敦史** インフルエンザ A 型ウイルス RNA 複製の制御方法 特願 2019-141527、出願日 2019 年 7 月 31 日

Grant list (4)

- AMED新興再興感染症プロジェクト
- 科学研究費 基盤研究 (B)
- 科学研究費 基盤研究 (C)
- TIA連携プログラム探索推進事業 かけはし

エネルギー代謝科学分野

Publication list from Matsuzaka's Lab (4)

- Matsuzaka T**, Kuba M, Koyasu S, Yamamoto Y, Motomura K, Arulmozhiraja S, Ohno H, Sharma R, Shimura T, Okajima Y, Han SI, Aita Y, Mizunoe Y, Osaki Y, Iwasaki H, Yatoh S, Suzuki H, Sone H, Takeuchi Y, Yahagi N, **Miyamoto T**, Sekiya M, Nakagawa Y, Ema M, Takahashi S, Tokiwa H, Shimano H. Hepatocyte Elovl6 determines ceramide acyl-chain length and hepatic insulin sensitivity in mice. *Hepatology* 2019. doi: 10.1002/hep.30953.
- Ma Y, Sekiya M, Kainoh K, Matsuda T, Iwasaki H, Osaki Y, Sugano Y, Suzuki H, Takeuchi Y, **Miyamoto T**, Yahagi N, Nakagawa Y, **Matsuzaka T**, Shimano H. Transcriptional co-repressor CtBP2 orchestrates epithelial-mesenchymal transition through a novel transcriptional holocomplex with OCT1. *Biochem Biophys Res Commun*. 2019 Dec 19. pii: S0006-291X(19)32400-3.
- Satoh A, Han SI, Araki M, Nakagawa Y, Ohno h, Mizunoe Y, Kumagai K, Murayama Y, Osaki Y, Iwasaki H, Sekiya M, Konishi M, Itoh N, **Matsuzaka T**, Sone H, Shimano H. CREBH improves diet-induced obesity, insulin resistance, and metabolic disturbances by FGF21-dependent and -independent mechanisms. *iScience* 2020, in press.
- Miyamoto T***, **Matsuzaka T**, Shimano H. ROCK1 as a new player in the regulation of hepatic lipogenesis. *J Diabetes Investig*. 2019. doi: 10.1111/jdi.13051. *corresponding author

Grant list (9)

- 科学研究費 基盤研究 (B)
- 科学研究費 挑戦的研究 (萌芽)
- 科学研究費 基盤研究 (C)
- 科学研究費 新学術領域研究 細胞機能を司るオルガネラ・ゾーンの解読 (公募班)
- 文部科学省 卓越研究員事業
- 公益財団法人MSD生命科学財団 研究助成
- 小野医学研究財団 研究助成
- JST-CREST 「多細胞での時空間的な相互作用の理解を目指した技術・解析基盤の創出」(分担)

9. 金沢大学がん進展制御研究所 共同研究

細胞動態科学分野

Publication list form Kato's Lab (7)

1. Abdelaziz M, Watanabe Y, **Kato M.** PMEPA1/TMEPAI knockout impairs tumor growth and lung metastasis in MDA-MB-231 cells without changing monolayer culture cell growth. *J Biochem.* 2019 May 1;. 165(5): 411-414. doi: 10.1093/jb/mvz022. PMID: 30873542
2. Wardhani BWK, Puteri MU, Watanabe Y, Louisa M, Setiabudy R, **Kato M.** Decreased sensitivity of several anticancer drugs in TMEPAI knockout triple-negative breast cancer cells. *Medical J. Indonesia.* 2019. May16. 28: 110-115. doi: 10.13181/mji.v28i2.2687
3. Tran SPT, Hipolito CJ, Suzuki H, Xie R, Huynh Dam KT, ten Dijke P, Terasaka N, Goto Y, Suga H, **Kato M.** Generation of non-standard macrocyclic peptides specifically binding TSC-22 homologous gene-1. *Biochem Biophys Res Commun.* 2019 Jun 18. 516(2): 445-450. doi: 10.1016/j.bbrc.2019.06.035. PMID: 31227214
4. Xie R, Okita Y, Ichikawa Y, Mohammed FA, Huynh Dam KT, Tran SPT, **Kato M.** Role of the kringle-like domain in Glycoprotein NMB for its tumorigenic potential. *Cancer Sci.* 2019 Jun 26. 110(7): 2237-2246. doi: 10.1111/cas.14076. PMID: 31127873
5. Zhang X, Koga N, Suzuki H, **Kato M.** Promotion of cellular senescence by THG-1/TSC22D4 knockout through activation of JUNB. *Biochem Biophys Res Commun.* Epub 2019 Dec 3. 522(4):897-90, 2020. doi: 10.1016/j.bbrc.2019.11.145. PMID:31806366
6. Hwang J, Haque MA, Suzuki H, ten Dijke P, **Kato M.** THG-1 suppresses SALL4 degradation to induce stemness genes and tumorsphere formation through antagonizing NRBP1 in squamous cell carcinoma cells. *Biochem Biophys Res Commun.* Epub 2019 Dec 19. 523(2):307-314, 2020. doi:10.1016/j.bbrc.2019.11.149. PMID:31864704
7. Puteri MU, Watanabe Y, Wardhani BWK, Amalia R, Abdelaziz M, **Kato M.** PMEPA1/TMEPAI isoforms function via its PY and Smad interaction motifs for tumorigenic activities of breast cancer cells. *Genes Cells, in press.*

Grant list (5)

1. 科学研究費 基盤研究 (B)
2. 科学研究費 基盤研究 (C)
3. 科学研究費 基盤研究 (C)
4. 科学研究費 基盤研究 (C)
5. AMED創薬総合支援事業

宇宙生物学分野 (JAXA 連携研究分野)

Publication list form Shirakawa's Lab (4)

1. Tominari T, Ichimaru R, Taniguchi K, Yumoto A, **Shirakawa M.**, Matsumoto C, Watanabe K, Hirata M, Itoh Y, **Shiba D**, Miyaura C, Inada M. Hypergravity and microgravity exhibited reversal effects on the bone and muscle mass in mice. *Sci Rep.* 9:6614, doi:10.1038/s41598-019-42829-z, April 2019. Non-invasive in vivo imaging of UCP1 expression in live mice via near-infrared fluorescent protein iRFP720.

2. Horie K, Sasanuma H, Kudo T, Fujita SI, Miyauchi M, Miyao T, Seki T, Akiyama N, Takakura Y, Shimbo M, Jeon H, **Shirakawa M**, **Shiba D**, Yoshida N, Muratani M, Takahashi S, Akiyama T. Down-regulation of GATA1-dependent erythrocyte-related genes in the spleens of mice exposed to a space travel. *Sci Rep*, 9:7654, doi:10.1038/s41598-019-44067-9, May 2019.
3. Matsuda C, Kato T, Suzuki SI, Kikuchi J, Ohta T, Kagawa M, Hattori M, Kobayashi H, **Shiba D**, **Shirakawa M**, Mizuno H, Furukawa S, Mukai C, Ohno H. Dietary intervention of mice using an improved Multiple Artificial-gravity Research System (MARS) under artificial 1 g. *npj Microgravity*, 5(16), doi:10.1038/s41526-019-0077-0, July 2019.
4. Horie K, Kato T, Kudo T, Sasanuma H, Miyauchi M, Akiyama N, Miyao T, Seki T, Ishikawa T, Takakura Y, **Shirakawa M**, **Shiba D**, Hamada M, Jeon H, Yoshida N, Inoue J, Muratani M, Takahashi S, Ohno H, Akiyama T. Impact of spaceflight on the murine thymus and mitigation by exposure to artificial gravity during spaceflight. *Sci Rep*, 9:19866, doi:10.1038/s41598-019-56432-9, Dec 2019.

Grant list (0)

基礎研究部門

ゲノム生物学分野

Publication list from Muratani's Lab (10)

1. Choong AMTL, Wee IJY, Almond M, **Muratani M**, Kovari F, Russai R, Jenkins MP. A Systematic review of the use of biochemical markers in the assessment of spinal cord ischemia in thoracoabdominal aortic aneurysm repair. *Vasc Endovascular Surg*. 2019. 53(3):230-241. doi: 10.1177/1538574418814612.
2. Horie K, Sasanuma H, Kudo T, Fujita SI, Miyauchi M, Miyao T, Seki T, Akiyama N, Takakura Y, Shimbo M, Jeon H, Shirakawa M, Shiba D, Yoshida N, **Muratani M**, Takahashi S, Akiyama T. Down-regulation of GATA1-dependent erythrocyte-related genes in the spleens of mice exposed to a space travel. *Sci Rep*. 2019. 9(1):7654. doi: 10.1038/s41598-019-44067-9.
3. Kim Y, Shiba-Ishii A, Ramirez K, **Muratani M**, Sakamoto N, Iijima T, Noguchi M. Carcinogen-induced tumors in SFN-transgenic mice harbor a characteristic mutation spectrum of human lung adenocarcinoma. *Cancer Sci*. 2019. 110(8):2431-2441. doi: 10.1111/cas.14081.
4. Ly NH, Maekawa T, Yoshida K, Liu Y, **Muratani M**, Ishii S. RNA-sequencing analysis of paternal low-protein diet-Induced gene expression change in mouse offspring adipocytes. *G3* (Bethesda). 2019. 9(7):2161-2170. doi:10.1534/g3.119.400181.
5. Maekawa T, Liu B, Liu Y, Yoshida K, **Muratani M**, Chatton B, Ishii S. Stress-induced and ATF7-dependent epigenetic change influences cellular senescence. *Genes Cells*. 2019. 24(9):627-635. doi: 10.1111/gtc.12713.
6. Kawai H, Sugano M, Nakano N, **Muratani M**, Sakashita S, Goto Y, Noguchi M. A case of invasive mucinous adenocarcinoma of the lung showing stepwise progression at the primary site. *Lung Cancer*. 2019. 136:94-97. doi:10.1016/j.lungcan.2019.08.027.
7. Matsumura T, Noda T, **Muratani M**, Okada R, Yamane M, Isotani A, Kudo T, Takahashi S, Ikawa M. Male mice, caged in the International Space Station for 35 days, sire healthy offspring. *Sci Rep*. 2019. 9(1):13733. doi:10.1038/s41598-019-50128-w.
8. Ikeda H, **Muratani M**, Hidema J, Hada M, Fujiwara K, Souda H, Yoshida Y, Takahashi A. Expression profile of cell cycle-related genes in human fibroblasts exposed simultaneously to radiation and simulated microgravity. *Int J Mol Sci*. 2019. 20(19). pii: E4791. doi: 10.3390/ijms20194791.

9. Horie K, Kato T, Kudo T, Sasanuma H, Miyauchi M, Akiyama N, Miyao T, Seki T, Ishikawa T, Takakura Y, Shirakawa M, Shiba D, Hamada M, Jeon H, Yoshida N, Inoue JI, **Muratani M**, Takahashi S, Ohno H, Akiyama T. Impact of spaceflight on the murine thymus and mitigation by exposure to artificial gravity during space flight. *Sci Rep.* 2019. 9(1):19866. doi: 10.1038/s41598-019-56432-9.
10. Kawao N, Takafuji Y, Ishida M, Okumoto K, Morita H, **Muratani M**, Kaji H. Roles of the vestibular system in obesity and impaired glucose metabolism in high-fat diet-fed mice. *PLoS One.* 2020. 15(2):e0228685. doi:10.1371/journal.pone.0228685.

Grant list (1)

1. 科学研究費 新学術領域研究 「宇宙に生きる」計画班・分担研究者

メタボロゲノミクス分野

Publication list from Fukuda's Lab (16)

1. Aw W and **Fukuda S**. Protective effects of bifidobacteria against enteropathogens. *Microb Biotechnol.* 12: 1097-1100, 2019
2. Kikuchi K, Saigusa D, Kanemitsu Y, Matsumoto Y, Thanai P, Suzuki N, Mise K, Yamaguchi H, Nakamura T, Asaji K, Mukawa C, Tsukamoto H, Sato T, Oikawa Y, Iwasaki T, Oe Y, Tsukimi T, Fukuda NN, Ho HJ, Nanto-Hara F, Ogura J, Saito R, Nagao S, Ohsaki Y, Shimada S, Suzuki T, Toyohara T, Mishima E, Shima H, Akiyama Y, Akiyama Y, Ichijo M, Matsuhashi T, Matsuo A, Ogata Y, Yang CC, Suzuki C, Breeggemann MC, Heymann J, Shimizu M, Ogawa S, Takahashi N, Suzuki T, Owada Y, Kure S, Mano N, Soga T, Wada T, Kopp JB, **Fukuda S**, Hozawa A, Yamamoto M, Ito S, Wada J, Tomioka Y, Abe T. Gut microbiome-derived phenyl sulfate contributes to albuminuria in diabetic kidney disease. *Nat Commun.* 10: 1835, 2019.
3. Yachida S, Mizukami S, Shiroma H, Shiba S, Nakajima T, Sakamoto T, Watanabe H, Masuda K, Nishimoto Y, Kubo M, Hosoda F, Rokutan H, Matsumoto M, Takamaru H, Yamada M, Matsuda T, Iwasaki M, Yamaji T, Yachida T, Soga T, Kurokawa K, Toyoda A, Ogura Y, Hayashi T, Hatakeyama M, Nakagama H, Saito Y, **Fukuda S**, Shibata T, Yamada T. Metagenomic and metabolomic analyses reveal distinct stage-specific phenotypes of the gut microbiota in colorectal cancer. *Nat Med.* 25: 968-976, 2019.
4. Orimo T, Sasaki I, Hemmi H, Ozasa T, Fukuda-Ohta Y, Ohta T, Morinaka M, Kitauchi M, Yamaguchi T, Sato Y, Tanaka T, Hoshino K, Katayama KI, **Fukuda S**, Miyake K, Yamamoto M, Satoh T, Furukawa K, Kuroda E, Ishii KJ, Takeda K, Kaisho T. Cholera toxin B induces interleukine-1 β production from resident peritoneal macrophages through pyrin as well as NLRP3 inflammasome. *Int Immunol.* 31: 657-668, 2019.
5. Tanaka K, Watabe T, Kato K, Tsukimi T, Sato MP, Odamaki T, Tomita M, **Fukuda S**. Draft genome sequences of Enterococcus faecalis strains isolated from healthy Japanese individuals. *Microbiol Resour Announc.* 8: e00832-19, 2019.
6. Jo R, Nishimoto Y, Umezawa K, Yama K, Aita Y, Ichiba Y, Murakami S, Kakizawa Y, Kumagai T, Yamada T, **Fukuda S**. Comparison of oral microbiome profiles in stimulated and unstimulated saliva, tongue, and mouth-rinsed water. *Sci Rep.* 9: 16124, 2019.
7. Yang J, Tsukimi T, Yoshikawa M, Suzuki K, Takeda T, Tomita M, **Fukuda S**. *Cutibacterium acnes* (*Propionibacterium acnes*) 16S rRNA genotyping of microbial samples from possessions contributes to owner identification. *mSystems.* 4: e00594-19, 2019.
8. Kitamoto S, Alteri CJ, Rodrigues M, Nagao-Kitamoto H, Sugihara K, Himpsl SD, Bazzi M, Miyoshi M, Nishioka T, Hayashi A, Morhardt TL, Kuffa P, Grasberger H, El-Zaatari M, Bishu S, Ishii C, Hirayama A,

- Eaton KA, Dogan B, Simpson KW, Inohara N, Mobley HLT, Kao JY, Fukuda S, Barnich N, Kamada N. Dietary L-serine confers a competitive fitness advantage to Enterobacteriaceae in the inflamed gut. *Nat Microbiol.* 5: 116-125, 2020.
9. Imamoto A, Ki S, Li L, Iwamoto K, Maruthamuthu V, Devany J, Lu O, Kanazawa T, Zhang S, Yamada T, Hirayama A, Fukuda S, Suzuki Y, Okada M. Essential role of the Crk family-dosage in DiGeorge-like anomaly and metabolic homeostasis. *Life Sci Alliance.* 3: e201900635, 2020.
 10. Nanto-Hara F, Kanemitsu Y, Fukuda S, Kikuchi K, Asaji K, Saigusa D, Iwasaki T, Ho HJ, Mishima E, Suzuki T, Suzuki C, Tsukimi T, Matsuhashi T, Oikawa Y, Akiyama Y, Kure S, Owada Y, Tomioka Y, Soga T, Ito S, Abe T. The guanylate cyclase C agonist linaclotide ameliorates the gut-cardio-renal axis in an adenine-induced mouse model of chronic kidney disease. *Nephrol Dial Transplant.* 35 : 250-264, 2020.
 11. Nagao-Kitamoto H, Leslie JL, Kitamoto S, Jin C, Thomsson KA, Gilliland MG 3rd, Kuffa P, Goto Y, Jenq RR, Ishii C, Hirayama A, Seekatz AM, Martens EC, Eaton KA, Kao JY, Fukuda S, Higgins PDR, Karlsson NG, Young VB, Kamada N. Interleukin-22-mediated host glycosylation prevents Clostridioides difficile infection by modulating the metabolic activity of the gut microbiota. *Nat Med.* 2020 Feb 17. doi: 10.1038/s41591-020-0764-0. [Epub ahead of print]
 12. Erawijantari PP, Mizutani S, Shiroma H, Shiba S, Nakajima T, Sakamoto T, Saito Y, Fukuda S, Yachida S, Yamada T. Influence of gastrectomy for gastric cancer treatment on faecal microbiome and metabolome profiles. *Gut.* 2020 Jan 16. pii: gutjnl-2019-319188. doi: 10.1136/gutjnl-2019-319188. [Epub ahead of print]
 13. Tsukimi T, Watabe T, Tanaka K, Sato MP, Suzuki H, Tomita M, Fukuda S. Draft genome sequences of *Bifidobacterium animalis* consecutively isolated from healthy Japanese individuals. *J Genomics.* 2020. doi:10.7150/jgen.38516.
 14. Jangid A, Fukuda S, Seki M, Horiuchi T, Suzuki Y, Taylor TD, Ohno H, Prakash T. Association of colitis with gut-microbiota dysbiosis in clathrin adapter AP-1B knockout mice. *PLoS One* 2020. 15: e0228358
 15. Kikuchi Y, Obana N, Toyofuku M, Kodera N, Soma T, Ando T, Fukumori Y, Nomura N, Taoka A. Diversity of physical properties of bacterial extracellular membrane vesicles revealed through atomic force microscopy phase imaging. *Nonoscale.* <https://doi.org/10.1039/C9NR10850E>. In press.
 16. Inaba T, Obana N, Habe H, Nomura N. Biofilm formation of *Streptococcus mutans* is enhanced by indole via the quorum sensing pathway. *Microbes Environ.* Accepted.

Patent list (1)

1. 特願 2019- 217338 井上ひかる、中藤学、井上淨、福田真嗣 抗原結合分子、核酸組成物、ベクター組成物、細胞および *Bifidobacterium longum* の精製方法、地方独立行政法人神奈川県立産業技術総合研究所、学校法人慶應義塾 2019 年 11 月 29 日

Grant list (7)

1. 科学研究費 新学術領域研究 代謝アダプテーションのトランスオミクス解析 (公募研究)
2. 科学研究費 若手研究
3. 一般財団法人 糧食研究会 特定委託研究
4. JST 特定領域調査 共生進化機構 (研究分担者)
5. JST ERATO 共生進化機構 (副研究総括)
6. 農研機構 「知」の集積と活用の場による革新的技術創造促進事業 (研究分担者)
7. AMED 微生物叢と宿主の相互作用・共生の理解と、それに基づく疾患発症のメカニズム解明 (研究分担者)

ペプチド分野

Publication list form Hipolito's Lab (2)

1. Tran STP, **Hipolito CJ**, Suzuki H, Xie R, Kim Tuyen HD, Dijke PT, Terasaka N, Goto Y, Suga H, Kato M. Generation of non-standard macrocyclic peptides specifically binding TSC-22 homologous gene-1. * *Biochem. Biophys. Res. Commun.*. 2019, 516 (2), 445-450.
2. Huynh LK, **Hipolito CJ**, Ten Dijke P. A Perspective on the Development of TGF- β Inhibitors for Cancer Treatment. *Biomolecules*. 2019, 9 (11). pii: E743.

Grant list (1)

1. 科学研究費 基盤研究 (C)

インフォマティクス分野

Publication list form Hirokawa's Lab (6)

1. Shawki HH, Ishikawa-Yamauchi Y, Kawashima A, Katoh Y, Matsuda M, Al-Soudy AS, Minisy FM, Kuno A, Gulibaikelamu X, **Hirokawa T**, Takahashi S, Oishi H. EFCAB2 is a novel calcium-binding protein in mouse testis and sperm. *PLoS One*. 2019 Apr 1;14(4):e0214687. doi: 10.1371/journal.pone.0214687. eCollection 2019.
2. Shiba-Ishii A, Hong J, **Hirokawa T**, Kim Y, Nakagawa T, Sakashita S, Sakamoto N, Kozuma Y, Sato Y, Noguchi M. Stratifin Inhibits SCF^{FBW7} Formation and Blocks Ubiquitination of Oncoproteins during the Course of Lung Adenocarcinogenesis. *Clin Cancer Res*. 2019 May 1;25(9):2809-2820. doi: 10.1158/1078-0432.CCR-18-3631.
3. Harada R, **Yoshino R**, Nishizawa H, Shigeta Y. Parallel cascade selection molecular dynamics to screen for protein complexes generated by rigid docking. *J Mol Graph Model*. 2019 Nov;92:94-99. doi: 10.1016/j.jmgm.2019.07.007. Epub 2019 Jul 16.
4. **Yoshino R**, Yasuo N, Sekijima M. Molecular Dynamics Simulation reveals the mechanism by which the Influenza Cap-dependent Endonuclease acquires resistance against Baloxavir marboxil. *Sci Rep*. 2019 Nov 25;9(1):17464. doi: 10.1038/s41598-019-53945-1.
5. Chiba S, Ohue M, Gryniukova A, Borysko P, Zozulya S, Yasuo N, **Yoshino R**, Ikeda K, Shin WH, Kihara D, Iwadate M, Umeyama H, Ichikawa T, Teramoto R, Hsin KY, Gupta V, Kitano H, Sakamoto M, Higuchi A, Miura N, Yura K, Mochizuki M, Ramakrishnan C, Thangakani AM, Velmurugan D, Gromiha MM, Nakane I, Uchida N, Hakariya H, Tan M, Nakamura HK, Suzuki SD, Ito T, Kawatani M, Kudoh K, Takashina S, Yamamoto KZ, Moriwaki Y, Oda K, Kobayashi D, Okuno T, Minami S, Chikenji G, Prathipati P, Nagao C, Mohsen A, Ito M, Mizuguchi K, Honma T, Ishida T, **Hirokawa T**, Akiyama Y, Sekijima M. A prospective compound screening contest identified broader inhibitors for Sirtuin 1. *Sci Rep*. 2019 Dec 20;9(1):19585. doi: 10.1038/s41598-019-55069-y.
6. Adachi K, Yamada T, Ishizuka H, Oki M, Tsunogae S, Shimada N, Chiba O, Orihara T, Hidaka M, **Hirokawa T**, Odagi M, Konoki K, Yotsu-Yamashita M, Nagasawa K. Synthesis of C12-Keto Saxitoxin Derivatives with Unusual Inhibitory Activity Against Voltage-Gated Sodium Channels. *Chemistry*. 2020 Feb 11;26(9):2025-2033. doi: 10.1002/chem.201904184.

Grant list (6)

1. AMED 創薬等先端技術支援基盤プラットフォーム: BINDS
2. AMED 革新的先端研究開発支援事業
3. 文部科学省 科学技術試験研究委託事業
4. 日本学術振興会 科研費 基盤研究（A）（一般）
5. 日本学術振興会 科研費 基盤研究（B）（一般）
6. 科学研究費 若手研究

生命科学動物資源センター

資源開発分野

Publication list from Takahashi's Lab (27)

1. Sakamoto T, Obara N, Nishikii H, Kato T, Luan CS, Fujimura R, Yagita H, Sakata-Yanagimoto M, **Takahashi S**, Chiba S. Notch signaling in Nestin-expressing cells in the bone marrow maintains erythropoiesis via macrophage integrity. *Stem Cells*. 2019 Apr 1. doi: 10.1002/stem.3011.
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7. Miyagi S, Sroczynska P, Kato Y, Nakajima-Takagi Y, Oshima M, Rizq O, Takayama N, Saraya A, Mizuno S, **Sugiyama F**, **Takahashi S**, Matsuzaki Y, Christensen J, Helin K, Iwama A. The chromatin-binding protein Phf6 restricts the self-renewal of hematopoietic stem cells. *Blood*. 2019 Jun 6;133(23):2495-2506. doi: 10.1182/blood.2019000468.
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19. Kanemaru K, Noguchi E, Tahara-Hanaoka S, Mizuno S, Tateno H, Denda-Nagai K, Irimura T, Matsuda H, Sugiyama F, **Takahashi S**, Shibuya K, Shibuya A. Clec10a regulates mite-induced dermatitis. *Sci Immunol.* 2019 Dec 6;4(42). pii: eaax6908. doi: 10.1126/scimmunol.aax6908.
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 25. Fujino M, Tagami A, Ojima M, Mizuno S, Abdellatif AM, Kuno A, **Takahashi S**. c-Maf deletion in adult C57BL/6J mice induces cataract formation and abnormal differentiation of lens fiber cells. *Exp Anim.* 2020 Jan 21. doi: 10.1538/expanim.19-0137. [Epub ahead of print]
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Grant list (6)

1. 科学研究費 基盤研究 (A)
2. 科学研究費 新学術領域研究 先端モデル動物支援プラットフォーム
3. 科学研究費 新学術領域研究 「宇宙に生きる」
4. AMED老化メカニズムの解明・制御プロジェクト
5. AMED糖鎖プロジェクト
6. JAXA委託研究

資源解析分野

Publication list form Miwa's Lab (1)

1. Fukuda A, Honda S, Fujioka N, Sekiguchi Y, Mizuno S, **Miwa Y**, Sugiyama F, Hayashi Y, Nishimura K, Hisatake K. Non-invasive in vivo imaging of UCP1 expression in live mice via near-infrared fluorescent protein iRFP720. *PLoS One.* 2019 Nov 15;14(11):e0225213. doi: 10.1371/journal.pone.0225213. eCollection 2019.

Grant list (0)

資源管理分野

Publication list of Sugiyama's Lab (11)

1. Miyagi S, Sroczynska P, Kato Y, Nakajima-Takagi Y, Oshima M, Rizq O, Takayama N, Saraya A, Mizuno S, Sugiyama F, Takahashi S, Matsuzaki Y, Christensen J, Helin K, Iwama A. The chromatin-binding protein Phf6 restricts the self-renewal of hematopoietic stem cells. *Blood*. 2019 Jun 6;133(23):2495-2506. doi: 10.1182/blood.2019000468.
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3. Yasuda D, Kobayashi D, Akahoshi N, Ohto-Nakanishi T, Yoshioka K, Takuwa Y, Mizuno S, Takahashi S, Ishii S. Lysophosphatidic acid-induced YAP/TAZ activation promotes developmental angiogenesis by repressing Notch ligand Dll4. *J Clin Invest*. 2019 Jul 23;130. pii: 121955.
4. Gurumurthy CB, O'Brien AR, Quadros RM, Adams J Jr, Alcaide P, Ayabe S, Ballard J, Batra SK, Beauchamp MC, Becker KA, Bernas G, Brough D, Carrillo-Salinas F, Chan W, Chen H, Dawson R, DeMambro V, D'Hont J, Dibb KM, Eudy JD, Gan L, Gao J, Gonzales A, Guntur AR, Guo H, Harms DW, Harrington A, Hentges KE, Humphreys N, Imai S, Ishii H, Iwama M, Jonasch E, Karolak M, Keavney B, Khin NC, Konno M, Kotani Y, Kunihiro Y, Lakshmanan I, Laroche C, Lawrence CB, Li L, Lindner V, Liu XD, Lopez-Castejon G, Loudon A, Lowe J, Jerome-Majewska LA, Matsusaka T, Miura H, Miyasaka Y, Morpurgo B, Motyl K, Nabeshima YI, Nakade K, Nakashiba T, Nakashima K, Obata Y, Ogiwara S, Ouellet M, Oxburgh L, Piltz S, Pinz I, Ponnusamy MP, Ray D, Redder RJ, Rosen CJ, Ross N, Ruhe MT, Ryzhova L, Salvador AM, Alam SS, Sedlacek R, Sharma K, Smith C, Staes K, Starrs L, Sugiyama F, Takahashi S, Tanaka T, Trafford AW, Uno Y, Vanhoutte L, Vanrockeghem F, Willis BJ, Wright CS, Yamauchi Y, Yi X, Yoshimi K, Zhang X, Zhang Y, Ohtsuka M, Das S, Garry DJ, Hochepied T, Thomas P, Parker-Thornburg J, Adamson AD, Yoshiki A, Schmoult JF, Golovko A, Thompson WR, Lloyd KCK, Wood JA, Cowan M, Mashimo T, Mizuno S, Zhu H, Kasparek P, Liaw L, Miano JM, Burgio G. Reproducibility of CRISPR-Cas9 methods for generation of conditional mouse alleles: a multi-center evaluation. *Genome Biol*. 2019 Aug 26;20(1):171. doi: 10.1186/s13059-019-1776-2.
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6. Fukuda A, Honda S, Fujioka N, Sekiguchi Y, Mizuno S, Miwa Y, Sugiyama F, Hayashi Y, Nishimura K, Hisatake K. Non-invasive in vivo imaging of UCP1 expression in live mice via near-infrared fluorescent protein iRFP720. *PLoS One*. 2019 Nov 15;14(11):e0225213.
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10. Pang K, Park J, Ahn SG, Lee J, Park Y, Ooshima A, Mizuno S, Yamashita S, Park KS, Lee SY, Jeong J, Ushijima T, Yang KM, Kim SJ. RNF208, an estrogen-inducible E3 ligase, targets soluble Vimentin to suppress metastasis in triple-negative breast cancers. *Nat Commun.* 2019 Dec 20;10(1):5805 doi:10.1038/s41467-019-13852-5.
11. Higuchi T, Yoshimura M, Oka S, Tanaka K, Naito T, Yuhara S, Warabi E, Mizuno S, Ono M, Takahashi S, Tohma S, Tsuchiya N, Furukawa H. Modulation of methotrexate-induced intestinal mucosal injury by dietary factors. *Hum Exp Toxicol.* 2019 Dec 26 <https://doi.org/10.1177/0960327119896605>.

Grant list (7)

1. 科学研究費 基盤研究 (B)
2. 科学研究費 基盤研究 (B)
3. 科学研究費 基盤研究 (B)
4. 科学研究費 若手研究 (B)
5. 科学研究費 若手研究 (B)
6. AMED 「遺伝子・細胞治療研究開発基盤事業」
7. 先進医薬研究振興財団/循環医学分野 2019 年度 若手研究者助成