



Space Biology Publications—Fiscal Year 2019

1

Ajala C, Hasenstein KH.

Augmentation of root gravitropism by hypocotyl curvature in *Brassica rapa* seedlings.

Plant Sci. 2019 Aug;285:214-23.

<https://www.ncbi.nlm.nih.gov/pubmed/31203886>

Journal Impact Factor: 3.712

2

Beheshti A, McDonald JT, Miller J, Grabham P, Costes SV.

GeneLab database analyses suggest long-term impact of space radiation on the cardiovascular system by the activation of FYN through reactive oxygen species.

Int J Mol Sci. 2019 Feb 3;20(3):E661.

<https://www.ncbi.nlm.nih.gov/pubmed/30717456>

Journal Impact Factor: 3.687

3

Beheshti A, Shirazi-Fard Y, Choi S, Berrios D, Gebre SG, Galazka JM, Costes SV.

Exploring the effects of spaceflight on mouse physiology using the open access NASA GeneLab Platform.

J Vis Exp. 2018 Dec(143):e58447.

<https://www.ncbi.nlm.nih.gov/pubmed/30688299>

Journal Impact Factor: 0.971

4

Beisel NS, Callaham JB, Sng NJ, Taylor DJ, Paul A-L, Ferl RJ.

Utilization of single-image normalized difference vegetation index (SI-NDVI) for early plant stress detection.

Appl Plant Sci. 2018 Oct 19;6(10):e01186.

<https://www.ncbi.nlm.nih.gov/pubmed/30386712>

Journal Impact Factor: 1.30

5

Beisel NS, Noble J, Barbazuk WB, Paul A-L, Ferl RJ.

Spaceflight-induced alternative splicing during seedling development in *Arabidopsis thaliana*.

npj Microgravity. 2019 Apr 3;5(1):9.

<https://www.ncbi.nlm.nih.gov/pubmed/30963109>

Journal Impact Factor: 2.00

6

Belcaid M, Casaburi G, McAnulty SJ, Schmidbaur H, Suria AM, Moriano-Gutierrez S, Pankey MS, Oakley TH, Kremer N, Koch EJ, Collins AJ, Nguyen H, Lek S, Goncharenko-Foster I, Minx P, Sodergren E, Weinstock G, Rokhsar DS, McFall-Ngai M, Simakov O, Foster JS, Nyholm SV.

Symbiotic organs shaped by distinct modes of genome evolution in cephalopods.

Proc Natl Acad Sci U S A. 2019 Feb 19;116(8):3030-5.

<https://www.ncbi.nlm.nih.gov/pubmed/30635418>

Journal Impact Factor: 9.504

Note: This research was featured on the cover of the February 19, 2019 issue of *PNAS*. The image and cover note are available at: <https://www.pnas.org/content/116/8.cover-expansion>.

7

Berrios DC, Beheshti A, Costes SV.

FAIRness and usability for open-access omics data systems.

AMIA Annu Symp Proc. 2018 Dec 5;2018:232-41.

<https://www.ncbi.nlm.nih.gov/pubmed/30815061>

Journal Impact Factor: Not available for this journal

8

Blachowicz A, Chiang AJ, Elsaesser A, Kalkum M, Ehrenfreund P, Stajich JE, Torok T, Wang CCC, Venkateswaran K.

Proteomic and metabolomic characteristics of extremophilic fungi under simulated Mars conditions.

Front Microbiol. 2019 May 15;10:1013.

<https://www.ncbi.nlm.nih.gov/pubmed/31156574>

Journal Impact Factor: 4.019

9

Blachowicz A, Chiang AJ, Romsdahl J, Kalkum M, Wang CCC, Venkateswaran K.

Proteomic characterization of *Aspergillus fumigatus* isolated from air and surfaces of the International Space Station.

Fungal Genet Biol. 2019 Jan 3;124:39-46.

<https://www.ncbi.nlm.nih.gov/pubmed/30611835>

Journal Impact Factor: 3.476

10

Blachowicz A, Venkateswaran K, Wang CCC.

Persistence of fungi in atypical, closed environments: Cultivation to omics.

In: Gurtler V, Trevors J, eds. Microbiology of Atypical Environments. Methods in Microbiology. Vol. 45. London: Academic Press, 2018. p. 67-86.

<https://www.elsevier.com/books/microbiology-of-atypical-environment/trevors/978-0-12-814604-0>

Journal Impact Factor: Not applicable to this publication

11

Bokhari RS, Metzger CE, Allen MR, Bloomfield SA.

Daily acute bouts of weight-bearing during hindlimb unloading mitigate disuse-induced deficits in cancellous bone.

Gravit Space Res. 2018 Dec;6(2):2-11.

<http://gravitationalandspacebiology.org/index.php/journal/article/view/808>

Journal Impact Factor: Not available for this journal

12

Boothby TC.

Desiccation of *Hypsibius exemplaris*.

Cold Spring Harb Protoc. 2018 Nov 1;2018(11):pdb.prot102327.

<https://www.ncbi.nlm.nih.gov/pubmed/30385670>

Journal Impact Factor: 0.85

13

Boothby TC.

Total RNA extraction from tardigrades.

Cold Spring Harb Protoc. 2018 Nov 1;2018(11):pdb.prot102376.

<https://www.ncbi.nlm.nih.gov/pubmed/30385675>

Journal Impact Factor: 0.85

14

Boyle R, Popova Y, Varelas J.

Influence of magnitude and duration of altered gravity and readaptation to 1 g on the structure and function of the utricle in toadfish, *Opsanus tau*.

Front Physiol. 2018 Oct 22;9:1469.

<https://www.ncbi.nlm.nih.gov/pubmed/30405430>

Journal Impact Factor: 4.134

15

Caro TA, Wendeln M, Freeland M, Bryan N, Waters SM, McIntyre A, Nicoll P, Madronich S, Smith DJ.

Ultraviolet light measurements (280–400 nm) acquired from stratospheric balloon flight to assess influence on bioaerosols.

Aerobiologia. 2019 June 24. [Article in Press]

<https://link.springer.com/article/10.1007%2Fs10453-019-09597-9>

Journal Impact Factor: 1.931

16

Checinska Sielaff A, Urbaniak C, Mohan GBM, Stepanov VG, Tran Q, Wood JM, Minich J, McDonald D, Mayer T, Knight R, Karouia F, Fox GE, Venkateswaran K.

Characterization of the total and viable bacterial and fungal communities associated with the International Space Station surfaces.

Microbiome. 2019 Apr 8;7(1):50.

<https://www.ncbi.nlm.nih.gov/pubmed/30955503>

Journal Impact Factor: 9.133

17

Choi WG, Barker RJ, Kim SH, Swanson SJ, Gilroy S.

Variation in the transcriptome of different ecotypes of *Arabidopsis thaliana* reveals signatures of oxidative stress in plant responses to spaceflight.

Am J Bot. 2019 Jan;106(1):123-36.

<https://www.ncbi.nlm.nih.gov/pubmed/30644539>

Journal Impact Factor: 2.788

18

Deyhle RT Jr, Wong CP, Martin SA, McDougall MQ, Olson DA, Branscum AJ, Menn SA, Iwaniec UT, Hamby DM, Turner RT.

Maintenance of near normal bone mass and architecture in lethally irradiated female mice following adoptive transfer with as few as 750 purified hematopoietic stem cells.

Radiat Res. 2019 May;191(5):413-27.

<https://www.ncbi.nlm.nih.gov/pubmed/30870097>

Journal Impact Factor: 2.53

19

Duscher AA, Conesa A, Bishop M, Vroom MM, Zubizarreta SD, Foster JS.

Transcriptional profiling of the mutualistic bacterium *Vibrio fischeri* and an *hfq* mutant under modeled microgravity.

npj Microgravity. 2018 Dec 18;4(1):25.

<https://www.ncbi.nlm.nih.gov/pubmed/30588486>

Journal Impact Factor: 2.00

20

Fitzgerald J, Endicott J, Hansen U, Janowitz C.

Articular cartilage and sternal fibrocartilage respond differently to extended microgravity.

npj Microgravity. 2019 Feb 18;5(1):3.

<https://www.ncbi.nlm.nih.gov/pubmed/30793021>

Journal Impact Factor: 2.00

21

Friedman MA, Zhang Y, Wayne JS, Farber CR, Donahue HJ.

Single limb immobilization model for bone loss from unloading.

J Biomech. 2019 Jan 23;83:181-9.

<https://www.ncbi.nlm.nih.gov/pubmed/30551918>

Journal Impact Factor: 2.576

22

Gaffney CJ, Pollard AK, Deane CS, Cooke M, Balsamo M, Hewitt J, Vanapalli SA, Szewczyk NJ, Etheridge T, Phillips BE.

Worms in space for outreach on Earth: Space life science activities for the classroom.

Gravit Space Res. 2018 Dec;6(2):74-82.

<http://gravitationalandspacebiology.org/index.php/journal/article/view/814>

Journal Impact Factor: Not available for this journal

23

Garschagen LS, Mancinelli RL, Moeller R.

Introducing *Vibrio natriegens* as a microbial model organism for microgravity research.

Astrobiology. 2019 Oct;19(10):1211-20. Epub 2019 Sep 5.

<https://www.ncbi.nlm.nih.gov/pubmed/31486680>

Journal Impact Factor: 3.768

24

Hada M, Ikeda H, Rhone JR, Beitman AJ, Plante I, Souda H, Yoshida Y, Held KD, Fujiwara K, Saganti PB, Takahashi A.

Increased chromosome aberrations in cells exposed simultaneously to simulated microgravity and radiation.

Int J Mol Sci. 2018 Dec 22;20(1):E43.

<https://www.ncbi.nlm.nih.gov/pubmed/30583489>

Journal Impact Factor: 3.687

25

Hammond TG, Allen PL, Birdsall HH.

Effects of space flight on mouse liver versus kidney: Gene pathway analyses.

Int J Mol Sci. 2018 Dec 18;19(12):E4106.

<https://www.ncbi.nlm.nih.gov/pubmed/30567358>

Journal Impact Factor: 3.687

26

Hammond TG, Allen PL, Birdsall HH.

Gene pathways analysis of the effects of suspension culture on primary human renal proximal tubular cells.

Microgravity Sci Technol. 2018 Dec;30(6):951-63.

<https://link.springer.com/article/10.1007/s12217-018-9658-x>

Journal Impact Factor: 1.357

27

Hewitt JE, Pollard AK, Lesanpezeski L, Deane CS, Gaffney CJ, Etheridge T, Szewczyk NJ, Vanapalli SA.

Muscle strength deficiency and mitochondrial dysfunction in a muscular dystrophy model of *C. elegans* and its functional response to drugs.

Dis Model Mech. 2018 Dec 4;11(12):dmm036137.

<https://www.ncbi.nlm.nih.gov/pubmed/30396907>

Journal Impact Factor: 4.398

28

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 Sep 26;20(19):E4791.

<https://www.ncbi.nlm.nih.gov/pubmed/31561588>

Journal Impact Factor: 4.183

29

Jiang P, Green SJ, Chlipala GE, Turek FW, Vitaterna MH.

Reproducible changes in the gut microbiome suggest a shift in microbial and host metabolism during spaceflight.

Microbiome. 2019 Aug 9;7(1):113.

<https://www.ncbi.nlm.nih.gov/pubmed/31399081>

Journal Impact Factor: 10.465

30

Keune JA, Branscum AJ, Wong CP, Iwaniec UT, Turner RT.

Effect of leptin deficiency on the skeletal response to hindlimb unloading in adult male mice.

Sci Rep. 2019 Jun 27;9(1):9336.

<https://www.ncbi.nlm.nih.gov/pubmed/31249331>

Journal Impact Factor: 4.011

31

Krishnamurthy A, Ferl RJ, Paul A-L.

Comparing RNA-Seq and microarray gene expression data in two zones of the *Arabidopsis* root apex relevant to spaceflight.

Appl Plant Sci. 2018 Nov 14;6(11):e01197.

<https://onlinelibrary.wiley.com/doi/abs/10.1002/aps.3.1197>

Journal Impact Factor: 1.187

32

Kwok AT, Moore JE, Rosas S, Kerr BA, Andrews RN, Nguyen CM, Lee J, Furdui CM, Collins BE, Munley MT, Willey JS.

Knee and hip joint cartilage damage from combined spaceflight hazards of low-dose radiation less than 1 Gy and prolonged hindlimb unloading.

Radiat Res. 2019 Jun;191(6):497-506.

<https://www.ncbi.nlm.nih.gov/pubmed/30925135>

Journal Impact Factor: 2.53

33

Lawler JM, Garcia-Villatoro EL, Guzzoni V, Hord JM, Botchlett R, Holly D, Lawler MS, Janini Gomes M, Ryan P, Rodriguez D, Kuczmarski JM, Fluckey JD, Talcott S.

Effect of combined fish oil & curcumin on murine skeletal muscle morphology and stress response proteins during mechanical unloading.

Nutr Res. 2019 May;65:17-28.

<https://www.ncbi.nlm.nih.gov/pubmed/30954343>

Journal Impact Factor: 2.707

34

Lee MD.

Applications and considerations of GToTree: A user-friendly workflow for phylogenomics.

Evol Bioinform Online. 2019 Jul 25;15:1176934319862245.

<https://www.ncbi.nlm.nih.gov/pubmed/31384124>

Journal Impact Factor: 2.203

35

Lee MD.

GToTree: A user-friendly workflow for phylogenomics.

Bioinformatics. 2019 Oct 15;35(20):4162-4. Epub 2019 Mar 13.

<https://www.ncbi.nlm.nih.gov/pubmed/30865266>

Journal Impact Factor: 4.531

36

Li T, Yan A, Bhatia N, Altinok A, Afik E, Durand-Smet P, Tarr PT, Schroeder JI, Heisler MG, Meyerowitz EM.

Calcium signals are necessary to establish auxin transporter polarity in a plant stem cell niche.

Nat Commun. 2019 Feb 13;10(1):726.

<https://www.ncbi.nlm.nih.gov/pubmed/30760714>

Journal Impact Factor: 12.353

37

Lien MR, Barker RJ, Ye Z, Westphall MH, Gao R, Singh A, Gilroy S, Townsend PA.

A low-cost and open-source platform for automated imaging.

Plant Methods. 2019 Jan 28;15:6.

<https://www.ncbi.nlm.nih.gov/pubmed/30705688>

Journal Impact Factor: 4.269

38

Lim SD, Kim SH, Gilroy S, Cushman JC, Choi WG.

Quantitative ROS bio-reporters: A robust toolkit for studying biological roles of reactive oxygen species in response to abiotic and biotic stresses.

Physiol Plant. 2019 Feb;165(2):356-68. Epub 2018 Nov 9.

<https://www.ncbi.nlm.nih.gov/pubmed/30411793>

Journal Impact Factor: 2.58

39

Mao XW, Nishiyama NC, Byrum SD, Stanbouly S, Jones T, Drew A, Sridharan V, Boerma M, Tackett AJ, Zawieja D, Willey JS, Delp M, Pecaut MJ.

Characterization of mouse ocular response to a 35-day spaceflight mission: Evidence of blood-retinal barrier disruption and ocular adaptations.

Sci Rep. 2019 Jun 3;9(1):8215.

<https://www.ncbi.nlm.nih.gov/pubmed/31160660>

Journal Impact Factor: 4.122

40

Mao XW, Sandberg LB, Gridley DS, Herrmann EC, Zhang G, Raghavan R, Zubarev RA, Zhang B, Stodieck LS, Ferguson VL, Bateman TA, Pecaut MJ.

Proteomic analysis of mouse brain subjected to spaceflight.

Int J Mol Sci. 2018 Dec 20;20(1):E7.

<https://www.ncbi.nlm.nih.gov/pubmed/30577490>

Journal Impact Factor: 3.687

41

Marcec MJ, Gilroy S, Poovaiah BW, Tanaka K.

Mutual interplay of Ca²⁺ and ROS signaling in plant immune response.

Plant Sci. 2019 Jun;283:343-54. Review.

<https://www.ncbi.nlm.nih.gov/pubmed/31128705>

Journal Impact Factor: 3.712

42

Mednieks MK, Hand AR.

Oral tissue responses to travel in space.

In: Space Medicine. London: InTechOpen, 2019. p. 1-26.

<https://www.intechopen.com/online-first/oral-tissue-responses-to-travel-in-space>

Journal Impact Factor: Not applicable to this publication

43

Mickens MA, Torralba M, Robinson SA, Spencer LE, Romeyn MW, Massa GD, Wheeler RM.

Growth of red pak choi under red and blue, supplemented white, and artificial sunlight provided by LEDs.

Sci Hortic (Amsterdam). 2019 Feb;245:200-9.

<http://www.sciencedirect.com/science/article/pii/S030442381830726X>

Journal Impact Factor: 1.76

44

Moreno-Villanueva M, Feiveson AH, Krieger S, Kay Brinda A, von Scheven G, Bürkle A, Crucian B, Wu H.

Synergistic effects of weightlessness, isoproterenol, and radiation on DNA damage response and cytokine production in immune cells.

Int J Mol Sci. 2018 Nov 21;19(11):E3689.

<https://www.ncbi.nlm.nih.gov/pubmed/30469384>

Journal Impact Factor: 3.687

45

Moreno-Villanueva M, Wu H.

Radiation and microgravity – Associated stress factors and carcinogenesis.

REACH. 2019 Mar;13:100027. Review.

<http://www.sciencedirect.com/science/article/pii/S2352309318300105>

Journal Impact Factor: Not available for this journal

46

Morrison MD, Fajardo-Cavazos P, Nicholson WL.

Comparison of *Bacillus subtilis* transcriptome profiles from two separate missions to the International Space Station.

npj Microgravity. 2019 Jan 7;5(1):1.

<https://www.ncbi.nlm.nih.gov/pubmed/30623021>

Journal Impact Factor: 2.00

47

Mortreux M, Ko FC, Riveros D, Bouxsein ML, Rutkove SB.

Longitudinal time course of muscle impairments during partial weight-bearing in rats.

npj Microgravity. 2019 Aug 22;5(1):20.

<https://www.ncbi.nlm.nih.gov/pubmed/31453318>

Journal Impact Factor: 2.66

48

Mortreux M, Riveros D, Bouxsein ML, Rutkove SB.

A moderate daily dose of resveratrol mitigates muscle deconditioning in a Martian gravity analog.

Front Physiol. 2019 Jul 18;10:899.

<https://www.ncbi.nlm.nih.gov/pubmed/31379604>

Journal Impact Factor: 3.201

49

Mortreux M, Riveros D, Bouxsein ML, Rutkove SB.

Mimicking a space mission to Mars using hindlimb unloading and partial weight bearing in rats.

J Vis Exp. 2019 Apr 4(146):e59327.

<https://www.ncbi.nlm.nih.gov/pubmed/31009001>

Journal Impact Factor: 1.184

50

Overbey EG, da Silveira WA, Stanbouly S, Nishiyama NC, Roque-Torres GD, Pecaut MJ, Zawieja DC, Wang C, Willey JS, Delp MD, Hardiman G, Mao XW.

Spaceflight influences gene expression, photoreceptor integrity, and oxidative stress-related damage in the murine retina.

Sci Rep. 2019 Sep 16;9(1):13304.

<https://www.ncbi.nlm.nih.gov/pubmed/31527661>

Journal Impact Factor: 4.011

51

Overbey EG, Paul AM, da Silveira WA, Tahimic CGT, Reinsch SS, Szewczyk N, Stanbouly S, Wang C, Galazka JM, Mao XW.

Mice exposed to combined chronic low-dose irradiation and modeled microgravity develop long-term neurological sequelae.

Int J Mol Sci. 2019 Aug 22;20(17):E4094.

<https://www.ncbi.nlm.nih.gov/pubmed/31443374>

Journal Impact Factor: 4.183

52

Pendleton MM, Emerzian SR, Liu J, Tang SY, O'Connell GD, Alwood JS, Keaveny TM.

Effects of *ex vivo* ionizing radiation on collagen structure and whole-bone mechanical properties of mouse vertebrae.

Bone. 2019 Nov;128:115043. Epub 2019 Aug 21.

<https://www.ncbi.nlm.nih.gov/pubmed/31445224>

Journal Impact Factor: 4.360

53

Pendleton MM, Sadoughi S, Li A, O'Connell GD, Alwood JS, Keaveny TM.

High-precision method for cyclic loading of small-animal vertebrae to assess bone quality.

Bone Rep. 2018 Dec;9:165-72.

<https://www.ncbi.nlm.nih.gov/pubmed/30417036>

Journal Impact Factor: Not available for this journal

54

Phelan MA, Gianforcaro AL, Gerstenhaber JA, Lelkes PI.

An air bubble-isolating rotating wall vessel bioreactor for improved spheroid/organoid formation.

Tissue Eng Part C Methods. 2019 Aug;25(8):479-88.

<https://www.ncbi.nlm.nih.gov/pubmed/31328683>

Journal Impact Factor: 2.638

55

Piszkewicz S, Gunn KH, Warmuth O, Propst A, Mehta A, Nguyen KH, Kuhlman E, Guseman AJ, Stadmiller SS, Boothby TC, Neher SB, Pielak GJ.

Protecting activity of desiccated enzymes.

Protein Sci. 2019 May;28(5):941-51.

<https://www.ncbi.nlm.nih.gov/pubmed/30868674>

Journal Impact Factor: 2.41

Note: This research is featured on the cover of the May 2019 issue of *Protein Science*. The image and cover note are available in the Issue Information section at:

<https://onlinelibrary.wiley.com/toc/1469896x/2019/28/5>.

56

Ray S, Gebre S, Fogle H, Berrios DC, Tran PB, Galazka JM, Costes SV.

GeneLab: Omics database for spaceflight experiments.

Bioinformatics. 2019 May 15;35(10):1753-9.

<https://www.ncbi.nlm.nih.gov/pubmed/30329036>

Journal Impact Factor: 5.481

57

Rettig TA, Bye BA, Nishiyama NC, Hlavacek S, Ward C, Pecaut MJ, Chapes SK.

Effects of skeletal unloading on the antibody repertoire of tetanus toxoid and/or CpG treated C57BL/6J mice.

PLoS One. 2019 Jan 17;14(1):e0210284.

<https://www.ncbi.nlm.nih.gov/pubmed/30653556>

Journal Impact Factor: 2.766

58

Rettig TA, Nishiyama NC, Pecaut MJ, Chapes SK.

Effects of skeletal unloading on the bone marrow antibody repertoire of tetanus toxoid and/or CpG treated C57BL/6J mice.

Life Sci Space Res. 2019 Aug;22:16-28.

<https://www.ncbi.nlm.nih.gov/pubmed/31421845>

Journal Impact Factor: 2.066

59

Rettig TA, Pecaut MJ, Chapes SK.

A comparison of unamplified and massively multiplexed PCR amplification for murine antibody repertoire sequencing.

FASEB Bioadv. 2019 Jan;1(1):6-17.

<https://www.ncbi.nlm.nih.gov/pubmed/30740592>

Journal Impact Factor: Not available for this journal

60

Romsdahl J, Blachowicz A, Chiang AJ, Chiang YM, Masonjones S, Yaegashi J, Countryman S, Karouia F, Kalkum M, Stajich JE, Venkateswaran K, Wang CCC.

International Space Station conditions alter genomics, proteomics, and metabolomics in *Aspergillus nidulans*.

Appl Microbiol Biotechnol. 2019 Feb;103(3):1363-77.

<https://www.ncbi.nlm.nih.gov/pubmed/30539259>

Journal Impact Factor: 3.34

61

Romsdahl J, Wang CCC.

Recent advances in the genome mining of *Aspergillus* secondary metabolites (covering 2012-2018).

Medchemcomm. 2019 Jun 1;10(6):840-66. Review.

<https://www.ncbi.nlm.nih.gov/pubmed/31303983>

Journal Impact Factor: 2.394

62

Ronca AE, Moyer EL, Talyansky Y, Lowe M, Padmanabhan S, Choi S, Gong C, Cadena SM, Stodieck L, Globus RK.

Behavior of mice aboard the International Space Station.

Sci Rep. 2019 Apr 11;9(1):4717.

<https://www.ncbi.nlm.nih.gov/pubmed/30976012>

Journal Impact Factor: 4.122

63

Scarpati M, Qi Y, Govind S, Singh S.

A combined computational strategy of sequence and structural analysis predicts the existence of a functional eicosanoid pathway in *Drosophila melanogaster*.

PLoS One. 2019 Feb 12;14(2):e0211897.

<https://www.ncbi.nlm.nih.gov/pubmed/30753230>

Note: This article may be obtained online without charge.

Journal Impact Factor: 2.766

64

Singh NK, Bezdan D, Checinska Sielaff A, Wheeler K, Mason CE, Venkateswaran K.

Multi-drug resistant *Enterobacter bugandensis* species isolated from the International Space Station and comparative genomic analyses with human pathogenic strains.

BMC Microbiol. 2018 Nov 23;18(1):175.

<https://www.ncbi.nlm.nih.gov/pubmed/30466389>

Journal Impact Factor: 2.829

65

Singh NK, Wood JM, Karouia F, Venkateswaran K.

Succession and persistence of microbial communities and antimicrobial resistance genes associated with International Space Station environmental surfaces.

Microbiome. 2018 Nov 13;6(1):204.

<https://www.ncbi.nlm.nih.gov/pubmed/30424821>

Note: A correction to the scientific notation in the number of reads appears in

<https://www.ncbi.nlm.nih.gov/pubmed/30514368>.

Journal Impact Factor: 9.133

66

Singh NK, Wood JM, Mhatre SS, Venkateswaran K.

Metagenome to phenotype approach enables isolation and genomics characterization of *Kalamiella piersonii* gen. nov., sp. nov. from the International Space Station.

Appl Microbiol Biotechnol. 2019 Jun;103(11):4483-97.

<https://www.ncbi.nlm.nih.gov/pubmed/31011775>

Note: A correction to the taxonomic description appears in

<https://www.ncbi.nlm.nih.gov/pubmed/31302709>.

Journal Impact Factor: 3.340

67

Sng NJ, Kolaczkowski B, Ferl RJ, Paul A-L.

A member of the CONSTANS-Like protein family is a putative regulator of reactive oxygen species homeostasis and spaceflight physiological adaptation.

AoB Plants. 2019 Feb;11(1):ply075.

<https://www.ncbi.nlm.nih.gov/pubmed/30705745>

Journal Impact Factor: 2.281

68

Sun L, Ge Y, Sparks JA, Robinson ZT, Cheng X, Wen J, Blancaflor EB.

TDNAscan: A software to identify complete and truncated T-DNA insertions.

Front Genet. 2019 Jul 25;10:685.

<https://www.ncbi.nlm.nih.gov/pubmed/31428129>

Journal Impact Factor: 3.517

69

Tahimic CGT, Paul AM, Schreurs AS, Torres SM, Rubinstein L, Steczina S, Lowe M, Bhattacharya S, Alwood JS, Ronca AE, Globus RK.

Influence of social isolation during prolonged simulated weightlessness by hindlimb unloading.

Front Physiol. 2019 Sep 13;10:1147.

<https://www.ncbi.nlm.nih.gov/pubmed/31572207>

Journal Impact Factor: 3.201

70

Touchstone H, Bryd R, Loisate S, Thompson M, Kim S, Puranam K, Senthilnathan AN, Pu X, Beard R, Rubin J, Alwood J, Oxford JT, Uzer G.

Recovery of stem cell proliferation by low intensity vibration under simulated microgravity requires LINC complex.

npj Microgravity. 2019 May 15;5(1):11.

<https://www.ncbi.nlm.nih.gov/pubmed/31123701>

Journal Impact Factor: 2.00

71

Urbaniak C, van Dam P, Zaborin A, Zaborina O, Gilbert JA, Torok T, Wang CCC, Venkateswaran K.

Genomic characterization and virulence potential of two *Fusarium oxysporum* isolates cultured from the International Space Station.

mSystems. 2019 Mar 19;4(2):e00345-18.

<https://www.ncbi.nlm.nih.gov/pubmed/30944876>

Journal Impact Factor: 5.75

72

Vandenbrink JP, Kiss JZ.

Plant responses to gravity.

Semin Cell Dev Biol. 2019 Aug;92:122-5. Review.

<https://www.ncbi.nlm.nih.gov/pubmed/30935972>

Journal Impact Factor: 6.138

73

Vandenbrink JP, Kiss JZ.

Preparation of a spaceflight experiment to study tropisms in *Arabidopsis* seedlings on the International Space Station.

Methods Mol Biol. 2019;1924:207-14.

<https://www.ncbi.nlm.nih.gov/pubmed/30694478>

Journal Impact Factor: 0.79

74

Xiao S, Venkateswaran KJ, Jiang SC.

The risk of *Staphylococcus* skin infection during space travel and mitigation strategies.

Microb Risk Anal. 2019 Apr;11:23-30.

<http://www.sciencedirect.com/science/article/pii/S2352352218300343>

Journal Impact Factor: Not available for this journal

75

Yang J, Thornhill SG, Barrila J, Nickerson CA, Ott CM, McLean RJC.

Microbiology of the built environment in spacecraft used for human flight.

In: Gurtler V, Trevors J, eds. Microbiology of Atypical Environments. Methods in Microbiology. Vol. 45. London: Academic Press, 2018. p. 3-26.

<https://www.elsevier.com/books/microbiology-of-atypical-environment/trevors/978-0-12-814604-0>

Journal Impact Factor: Not applicable to this publication

76

Yang X, Liao CY, Tang J, Bassham DC.

Overexpression of trans-Golgi network t-SNAREs rescues vacuolar trafficking and TGN morphology defects in a putative tethering factor mutant.

Plant J. 2019 Aug;99(4):703-16.

<https://www.ncbi.nlm.nih.gov/pubmed/31009161>

Journal Impact Factor: 5.775

77

Zhou M, Sng NJ, LeFrois CE, Paul A-L, Ferl RJ.

Epigenomics in an extraterrestrial environment: Organ-specific alteration of DNA methylation and gene expression elicited by spaceflight in *Arabidopsis thaliana*.

BMC Genomics. 2019 Mar 12;20(1):205.

<https://www.ncbi.nlm.nih.gov/pubmed/30866818>

Journal Impact Factor: 3.730

78

Zupanska AK, LeFrois C, Ferl RJ, Paul A-L.

HSFA2 functions in the physiological adaptation of undifferentiated plant cells to spaceflight.

Int J Mol Sci. 2019 Jan 17;20(2):E390.

<https://www.ncbi.nlm.nih.gov/pubmed/30658467>

Journal Impact Factor: 3.687

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National Aeronautics and Space Administration <https://www.nasa.gov/directorates/heo/slpsra>

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