Ⅳ 生物科学导支

1　生物科学専攻

攻の理念と目標

21

1-2　専攻の組織と運営

2000

1-2-1　教職員

1-2-2　教員の異動

		UKIZINTAMBARA THARCISSE			
		ISLAM MOHAMMED MAFIZUL			
		MAHMUDUL HASAN			

平成27年度生

3 WG	
2 WG	

1-3 専攻の大学院教育

1-3-1 大学院教育の目標とアドミッション・ポリシー

1-3-2 大学院教育の成

大学院学生の在籍状況及び学位授与状況

3-3　大学院生の国内学会発表実績

1-3-4　大学院生の国際学会発表実績

1-3-5　修士論文発表実績（個人情報保護法に留意）

1-3-6　博士学位

課程博士授与数　　件

論文博士授与

1-4　専攻の研究活動

1-4-1　研究活動の概要

◎産学官連携実績

2006-

2014-

◎高大連携の成果

◎生物科学専攻のスタッフが平成27(2015)年度に発表した論文，総説・解説，著書，学会の総数を以下に示す。

◎学術団体等からの受賞実績

◎国際交流の実績

国際共同研究・国際交流活動

Huang University of California, San Francisco

Estebanez

Mohamed Yong Kien Thai

Seppelt

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Hudson alpha Institute for Biotechnology

Mahmudul Hasan

Dr. Tariq Ezaz

◎ＲＡの実績

ROMAIDI				
SULTANA NASRIN				
Morov Arseniy Romanovich				Evolutionary history of amphioxus lineage
JAHAN NUSRAT				Molecular mechanisms of axis formation and neural induction during vertebrate embryogenesis

1-4-2　研究グループ別研究活動

動物科学講座

発

mammmalian target of rapamycin complex 1(mTORC1)

EMT

EMT

MCF-7 EMT

.

3T3-L1

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Nakahara Y., Muto A., Hirabayashi R., Sakuma T., Yamamoto T., Kume S., Kikuchi, Y.* (2016). (* corresponding author).

Temporal effects of Notch signaling and potenti li p Men o o ef li *

TOR

mTORC1

Syne2a

○各種研究員と外国人留学生の受入状況

Wang Jingxin　　Indriya Rachmawati

○研究助成金の受入状況

○学界なら

○特記事項

Huang　　University of California, San Francisco

細胞生物学研究室

〇研究活動の概要

ATPase　å éèœ †"•Ð+ 0 5 8 w>*9QâM|#　　€ 0Ð 4 74Dh¨á p 0 @ "apŠ•0` \　@ 4) …0€

〇著書・その他

〇取得特許

〇講演

ZIP II

MRLC

HeLa

〇各種研究員と

〇産学官

情報生理学研究

GKWamide

N Asp C

Phe-Xxa-Xaa-Phe-NH_2

FXXFamide GKWamide

FXXF-NH2

FXXFamide

cDNA FXXFamide

FXXFamide

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Morishita F, Furukawa Y, Kodani Y, Minakata H, Horiguchi T, Matsushima O. Molecular cloning of precursors for TEP-1 and TEP-2: The GGNG peptide-related peptides of a prosobranch gastropod, *Thais clavigera*. Peptides, 68:72-82 (2015)

Ueki T, Yamaguchi N, Isago Y, Tanahashi H. Vanadium accumulation in ascidians: A system overview, Coord. Chem. Rev., 301–302, 300–308 (2015).

○著書

Ueki T. Vanadium in the environment and its bioremediation. Book section. In: “Plants, Pollutants and Remediation”, Öztürk M, Ashraf M, Aksoy A, Ahmad MSA, Hakeem KR (Eds.), pp.13–26, Springer.

○講演

Ueki T, Hino T, Romaidi. Vanabins: A family of vanadium-binding proteins uniquely found in the genome of vanadium-rich ascidians, The 8th international tunicate meeting
Aomori City Cultural Hall, Aomori, Japan)

TALEN

Vanabin

17

Romaidi Screening for vanadium-accumulating bacteria isolated from the intestine of *Ascidia sydneiensis samea*

Romaidi Vanadium reduction by intestinal bacteria isolated from an ascidian

Romaidi Vanadate reductase facilitated vanadium reduction in vanadium- resistant bacterial strain isolated from the intestine of *Ascidia sydneiensis samea*

○各種研究員と外国人留学生の受入状況

〇研究助成金

Tri Kustono Adi

CompBiol

CompBiol

植物生物学講座
植物分類・生態学研究室

Bryophytes of Asia, fasc. 22

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Katagiri, T. (2015). On the identity of *Trichocolea argentea* Herzog, with a new combination to the genus *Leiomitra* Lindb. Journal of Bryology 37: 304–307.

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Katagiri, T. (2015). Two new synonyms of Trichocolea pluma: Trichocolea comptonii and *Trichocolea geniculata* from New Caledonia (Trichocoleaceae, Marchantiophyta). Bryophyte Diversity and Evolution 37: 31–34.

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Odontoschisma

Apatococcus lobatus (Chodat) J.B.Petetsen (Trebouxiophyceae, Chlorophyta) . Hikobia 17: 33–40.

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Orgaz, J. D. & Yamaguchi, T. (2015). On the identity of *Brachythecium sakuraii* Broth. with *Brachythecium pseudouematsui* Nog.(Brachytheciaceae) from Japan. The Bryologist 118: 367–370.

Orgaz, J. D. & Yamaguchi, T. (2016). *Brachythecium complexum* J.D.Orgaz, sp. nov. , a new species from Japan. Journal of Bryology 38: 63–66.

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Bowman, J. L., Araki, T., Arteaga-Vazquez, M. A., Berger, F., Dolan, L., Haseloff, J., Ishi

Sphagnum

rubiginosum *S. girgensohnii*

Trentepohlia

odorata

ALOG

MpRKD

Hepaticites oishii

○各種研究員と外国人留学生の受入状況

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Jose David Orgaz

〇研究助成金の受入状況

〇学界ならびに社会での活動

An introduction to Marchantia polymorpha; taxonomy, phylogeny, and morphology.

HIKOBIA

植物生理化学研究室

○研究活動の概要

(GA) Repression of Shoot Growth (RSG) GA GA RSG RSG RSG RSG NtCDPK1 CDPK in vitro NtCDPK1 NtCDPK1 CDPK Glu Asp CDPK NtCDPK1 N NtCDPK1 N RSG NtCDPK1 RSG NtCDPK1 Ala NtCDPK1 RSG RSG NtCDPK1 N NtCDPK1 NtCDPK1 GA

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○著書

○講演

EPR1

NtCDPK1

〇研究助成金の　　w

植物分子細胞構築学研究室

K Moriguchi, S Yamamoto, Y Ohmine, K Suzuki (2016) Fast and practical yeast transformation method mediated by *Escherichia coli* based on a trans-kingdom conjugal transfer system: Just mix two cultures and wait one hour. PLoS One. 2016 Feb 5;11(2):e0148989. (doi: 10.1371/journal.pone.0148989. eCollection 2016)

Y Ohmine, Y Satoh, K Kiyokawa, S Yamamoto, K Moriguchi, K Suzuki (2016) DNA repair genes *RAD52* and *SRS2*, a cell wall synthesis regulator gene *SMI1*, and the membrane sterol synthesis scaffold gene *ERG28* are important in efficient *Agrobacterium*-mediated yeast transformation with chromosomal T-DNA. BMC Microbiol. 16(1):58. (doi: 10.1186/s12866-016-0672-0)

K Suzuki, K Moriguchi, S Yamamoto (2015) Horizontal DNA transfer from bacteria to eukaryotes and a lesson from experimental transfers. Res. Microbiol. 166:753-756.

CNI5

vir *p*-coumaryl alcohol *Agrobacterium*

Agrobacterium tumefaciens (syn. *Rhizobium radiobacter*) CNI5

Rhizobium radiobacteria (syn. *Agrobacterium tumefaciens*)

T-DNA

vir *p*-coumaryl alcohol *Agrobacterium*

Ti/Ri

Vita Agstina

多様性生物学講座
附属臨海実験所・海洋分子生物学研究室

Ptychodera flava

Brachyury

Ptychodera flava

Tagawa K. Hemichordate genomes and the ancestry of chordates.
The 2nd Hiroshima International Symposium on Future Science.

MOROV ARSENIY ROMANOVICH

JAMBIO

附属宮島自然植物実験所・島嶼環境植物学

研究活動

sikokiana Miq. *Hikobia* 17

Trentepohlia

rigidula *T. monile*

Cephaleuros

Inoue, Y. & Tsubota, H. A taxonomic study on cleistocarpous species of *Weissia* (Pottiaceae, Bryophyta) in Japan. XX Cryptogamic Botany Symposium , Porto .

Astomum japonicum G.Roth

Weissia longifolia Mitt.

Kim, W., Sato, T., Inoue, Y., Tsubota, H., Yamaguchi, T. & Higuchi, M. Four unrecorded and two rediscovered mosses from Korean moss flora. 47th Annual meeting of the Korean Society of Plant Taxonomists

Trentepohlia rigidula

T. monile

Cephaleuros

Trentepohlia odorata

CCAP 483/4

Trentepohlia odorata

CCAP 483/4

100

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Estebanez

Mohamed

Yong Kien Thai

Seppelt

Dalton

両生類生物学講座／附属両生類研究施設
「発生」研

TALEN

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Xenopus (*Silurana*) *tropicalis*

Ivory Coast

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Genes to Cells, 21(3): 275-286.

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N. Matsushima, S. Ihara, M. Takase, T. Horiguchi. Assessment of radiocesium contamination in frogs 18 months after the Fukushima Daiichi nuclear disaster. Scientific Reports 5, Article number: 9712 (2015). DOI: 10.1038/srep09712.

○講演

Suzuki, A., Kashiwagi, K., Hanada, H., Furuno, N., Tazawa, I., Kurabayashi, A., Nakajima, K., Takebayashi-Suzuki, K., Igawa, T., Sumida, M., Yoshida, H., Kobayashi, S., Takenaka, J., Tamaki, J., Murakami, S., Mido T. and Kashiwagi, A. National BioResource Project (NBRP) for *Xenopus*: recent developments at the Asian hub for the international *Xenopus* research community *Xenopus* Meeting 2015

Minoru Takase "A useful amphibian model for analyzing estrogenic effects: production of all-male tadpole by artificial mating using supermale (YY) *Silurana tropicalis*." The 63rd NIBB conference Environment to Bioresponse, Okazaki, Japan, Nov 30-Dec 2, 2015.

_____ _____ TALEN mRNA

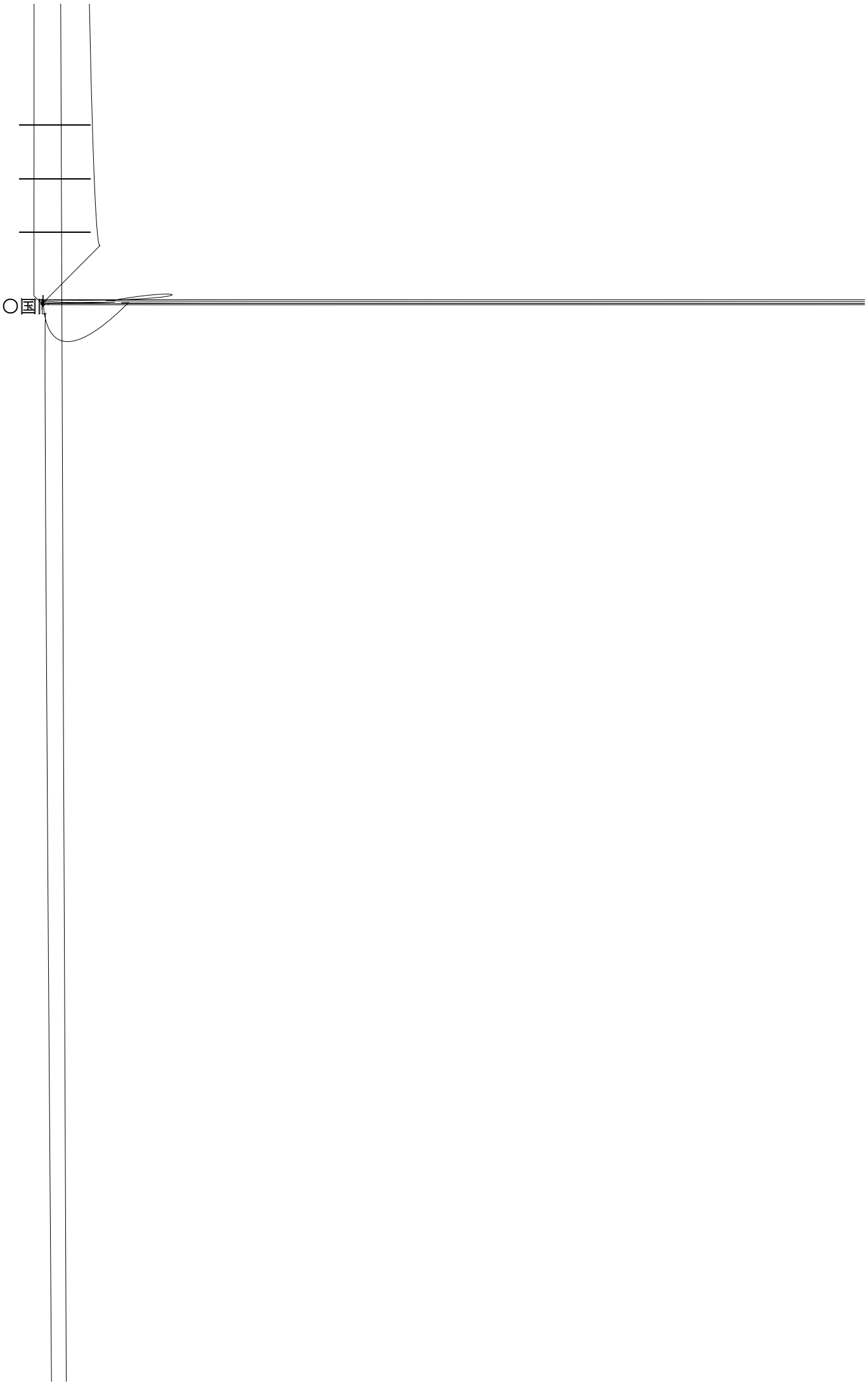
_____ _____ Ouro

_____ _____ TALEN mRNA host transfer

_____ _____ TALEN *Xenopus laevis* mRNA

Generation of the YY supermale of the frog *Silurana tropicalis* and fertility of the F1 all-male frog

〇研究助成金の


〇国北

『進化多様性ﾊ生命ｻｲｸﾙ』研究ｸﾞﾙｰﾌﾟ

○研究活動の概要

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Horb, M., Fujii, T. and Sumida, M. (2015) Inbreeding ratio and genetic relationships among strains of the western clawed frog, *Xenopus tropicalis*. PLoS ONE 10(7): e0133963

Nakade, S., T. Sakuma, Y. Sakane, Y. Hara , A. Kurabayashi, K. Kashiwagi, A. Kashiwagi, T. Yamamoto. M. Obara (2015) Homeolog-specific targeted mutagenesis in *Xenopus laevis* using TALENs. In Vitro Cellular & Developmental Biology – Animal 51: 879-884.

Hasan, M., M. A. R. Sarker, A. Kurabayashi, M. Kuramoto, M. Sumida. Genetic variation, advertisement call, and morphometry of Microhyla nilphamariensis from Bangladesh. Philippine Journal of Systematic Biolo

Jane Grimwood Daniel Rokhsar

Anna Noble Matt Guille David E. Simpson
Marko E. Horb

○各種研究員と外国人留学生の受入状況

Sultana Nasrin
Nusrat Jahan
Regina Putri Virgirinia

○研究助成金の受入状

○学界

Progress report of the Horizontal gene transfer project

Hudson alpf

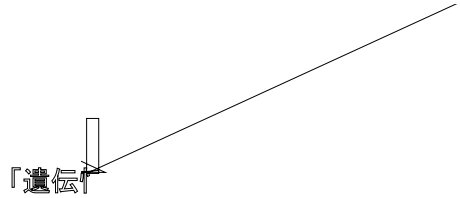
Mahmudul Hasan

○特記事項

Genes and Genetic Systems (GGS)

Mitochondrial genomes of Japanese Babina frogs (Ranidae, Anura): unique gene arrangements and the phylogenetic position of genus Babina. R. Kakehashi, A. Kurabayashi, S. Oumi, S. Katsuren, M. Hoso and M. Sumida. Genes & Genetic Systems (2013) 88: 59-67.

○大学院教育


「遺伝」

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Shigeta, M., Sakane,Y., Iida, M., Suzuki, M., Kashiwagi, K., Kashiwagi, A., Fujii, S., Yamamoto, T. and Suzuki, K.T. (2016) A streamlined workflow for rapid and efficient gene disruption by CRISPR-Cas9 in *Xenopus tropicalis* founders. **Genes to Cells**, doi: 10.1111/gtc.12379.

Nakade, S., Sakuma, T., Sakane, Y., Hara, Y., Kurabayashi, A., Kashiwagi, K., Kashiwagi, A., Yamamoto, T. and Obara, M. (2015) Homeolog-specific targeted mutagenesis in *Xenopus laevis* using TALENs. In Vitro Cellular & Developmental Biology─Animal, 51:879-884.

Igawa,T., Watanabe, A., Suzuki, A., Kashiwagi, A., Kashiwagi, K., Noble A., Guille, M., Simpson, D.E., Horb, M.E., Fujii,T. and Sumida, M. (2015) Inbreeding ratio and genetic relationships among strains of the Western clawed frog, *Xenopus tropicalis.* PLoS ONE, 10(7): e0133963

○著書

○取得特許

○講演

Kashiwagi, A., Sanoh, S., Kashiwagi, K., Hanada, H., Suzuki, K.T., Shinkai, T., Yamamoto, T. and Ohta,S. Suppression in amiodarone on *Xenopus* metamorphosis

Sanoh, S., Mori, Z., Suzuki, K.T., Kashiwagi, K., Hanada, H., Shigeta, M., Yamamoto,T., Sugihara, K.,

Kitamura, S., Kashiwagi, A. and Ohta, S. Developmental changes of drug-metabolizing enzymes related to accumulation of chemicals in tadpoles and adult frogs

Suzuki, A., Kashiwagi, K., Hanada, H., Furuno, N., Tazawa, I., Kurabayashi, K., Nakajima, K., Takebayashi-Suzuki, K., Igawa, T., Sumida, M., Yoshida, H., Kobayashi, S., Takenaka, J., Tamaki, J., Murakami, S., Mido, T. and Kashiwagi, A. National BioResource Project (NBRP) for *Xenopus*: recent developments at the Asian hub for the international *Xenopus* research community Xenopus Meeting 2015

Miura, I. A double sex-determining gene in the frog *Glandirana rugosa*. The 5th Asian Chromosome Colloquium. Bangkok (Kasetsart University), Thailand. 0

Anna Noble, Matt Guille, David E. Simpson ,
Marko E. Horb ,

Gene knockout
using CRISPR/Cas9 in Xenopus tropicali

Cryopreservation
Conference 2015

Cryopreservation Conference 2015

Cryopreservation Conference 2015

○各種研究員と外

〇研究助成金の受入状況

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Editorial Board of Chromosome Science
Editorial Board of Dataset Papers in Biology

Scott Gilbert The organisms as ecosystem: The developmental biology of holobionts NBRP

〇国際共同研究

Dr. Tariq Ezaz

○特記事項

Biology Open Xenopus
Editorial

J.B.Gurdon

Scott Gilbert

○大学院教育

TA

植物遺伝子資

○講

1-4-3　各種研究員と外国人留学生の受入状況

27

27

Tri Kustono Adi

27

SULTANA NASRIN
MOROV ARSENIY ROMANOVICH
ROMAIDI
JAHAN NUSRAT
AGUSTINA VITA
VIRGIRINIA REGINA PUTRI
WANG JINGXIN
RACHMAWATI INDRIA
JOSE DAVID ORGAZ

1-4-4　研究助成金の受入状況

1-4-5　学界ならびに社会での活動

1-5　その他特記事項

２　生物科学科

2-1　学科の理念と目標

2-2　学科の組織

◦生物科学科の教員

平成27年度 生物科学科教員組織

AMIR MOHAMED
HUSSEIN SALEM
ISLAM MOHAMMED
MAFIZUL
UKIZINTAMBARA
THARCISSE

平成27年度非常勤講師

Muse

平成27年度の生物科学科に関わる人事異

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生物科学科の運営

2-3　学科の学士課程教育

2-3-1　アドミッション・ポリシーとその目標

〖アドミッション・ポリシー〗

〖教育目標〗

2-3-2　学士課程教育の理念と達成のための具体策

2-3-3　学士課程教育の成果とその検証

平成27年度在籍学生数とチューター

【１】生物科学科の在籍学生数

【２】チューター