

Seminar Information

Date: Friday, 27th April, 2018

Time: 12:00-13:00

Place: 1F Lounge, QBiC Bldg. A, Osaka

(Kobe: D-E206 Seminar Room, TV broadcast: RikenA)



Speaker: **Atsuko Kasahara** PhD

Assistant Professor, Kanazawa University

Title: **Mitochondrial dynamics in malignant progression:
*retrograde control from mitochondria***

Abstract:

Mitochondrial pleiotropic functions, such as aerobic respiration to produce huge energy, controlling apoptosis, and calcium regulation are reflected by their extremely dynamic morphology and distribution. Continuous fusion and fission excellently tune mitochondrial quality, distribution, size, and motility. Mitochondria-shaping proteins, dynamin-like GTPase optic atrophy 1 (Opa1), and mitofusin (Mfn) 1, 2 fuse, while cytosolic dynamin-related protein 1 (Drp1) divides mitochondria. Mitochondria have been considered and paid attention as key players in “cancer metabolism”, however, growing evidences convince us that their shape and distribution could directly influence the malignant phenotypes of tumour cells.

Mitochondrial dynamics dictates “healthy” cell differentiation via modulating the canonical Notch1 signalling during cardiac differentiation (Kasahara *et al.*, Science 2013). Likewise, mitochondrial dynamics could also control “unhealthy” tumour cell plasticity by impacting on other organelle’s functions, such as endoplasmic reticulum (ER) via ER-mitochondria contact sites, or modulating signalling cascades that could possibly change tumour gene expressions. I would like to discuss about our recent study (Bassoy and Kasahara *et al.*, EMBO J. 2017), as well as on-going projects.

Host: Yasushi Okada

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