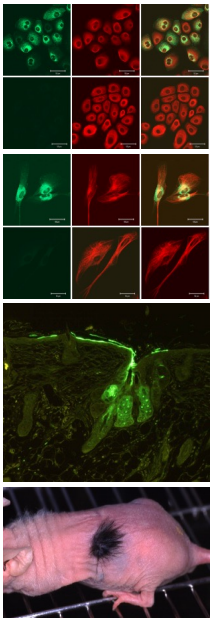
機能再生・再建科学専攻　細胞生物学分野
Department of Cell Biology



生命の本態、病の場
「細胞」を解き明かす！
―基本原理から治療法開発まで―

連絡先　阪口　政清
masa-s@md.okayama-u.ac.jp

スタッフ
教授　阪口政清
講　師　村田 等
助　教　木下理恵
助　教　山本健一

分野紹介

Cells are fundamental and essential units of life in all living organisms. Study of the cells therefore make it strait to understand how diseases can be caused and developed. Since cellular functions are regulated by vital molecules properly, we are approaching to solve the pathology at both cellular and molecular levels.

主なプロジェクト

- Our interests -

Inflammatory disorders

Cancer development
growth
invasion
metastasis

Neurodegenerative disease
apoptosis
mitophagy

↓

Responsive molecules ?

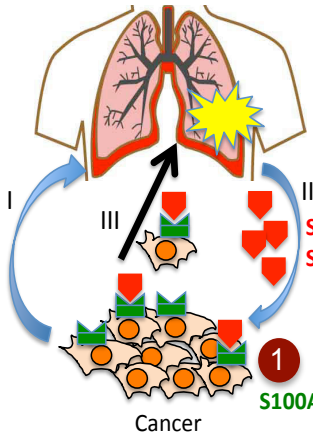
↓

Functions ?

↓

Application of the results to therapeutic approach
Gene based therapy
Protein based therapy
Drug based therapy

We are studying on novel S100A8/A9-soil sensor receptors (SSSRs) that play pivotal role in cancer metastasis.

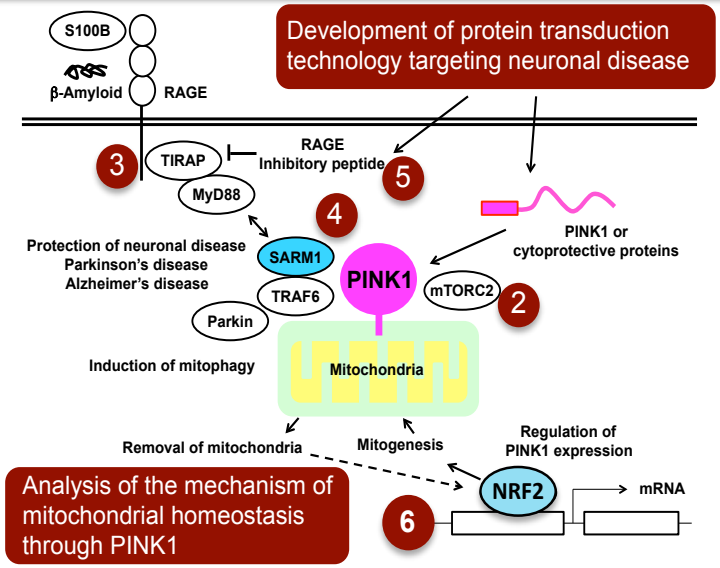


I. Cancer induces inflammation in lung (homeotic protection regarding to immune system).
II. Inflammatory lung rises alarm through release of excess amounts of S100A8/A9.
III. Cancers metastasizes lung area through S100A8/A9 receptors upon ligand binding.

Study of the novel SSSRs in a cancer development
↓
Working on a metastatic regulation by targeting them

S100A8/A9-soil sensor receptors (SSSRs)

We are studying on critical molecules regulating mitochondria homeostasis, especially focusing PINK1, in neurodegenerative diseases.



Development of protein transduction technology targeting neuronal disease

Analysis of the mechanism of mitochondrial homeostasis through PINK1

1 Hibino et al., Cancer Res, 2013.
Ruma et al., Clin Exp Metastas, 2016.
2 Murata et al., J Biol Chem, 2011.
3 Sakaguchi et al., Plos One, 2011.
Sakaguchi et al., J Biol Chem, 2014.
4 Murata et al., Mol Biol Cell, 2013.
5 Putranto et al., Int J Mol Med, 2013.
6 Murata et al., Plos One, 2015.