



CDB SEMINAR

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Thursday, April 16, 2009

16:00~17:00 C1F CDB Auditorium

Novel Functions of Tumor Suppressor RB Protein and p53 in Nucleus and Near Plasma Membrane

Summary

Both p53 and RB protein contain about 13 in vivo phosphorylation sites. We have generated almost all antibodies to distinguish each phosphorylation site of both proteins and applied them to elucidate the functions of those sites (1-5).

Recently we have unexpectedly found that clathrin heavy chain, which plays an important role in endocytosis, is also located in nucleus and directly binds to p53. This binding was necessary for p53-dependent transcription (6). On the contrary, we also found that p53 is located near plasma membrane and regulates cell motility by controlling actin polymerization.

In addition we demonstrated that PHLDA3, which is a small protein containing only PH domain, is induced by p53 and stimulates apoptosis by inhibiting AKT (7).

I will summarize these findings and discuss them in the seminar.

- 1) Shieh et al.: Cell, 91, 325-334 (1997)
- 2) Banin et al.: Science, 281, 1674-1677 (1998)
- 3) Oda et al.: Cell, 102, 849-862 (2000)
- 4) Kitagawa et al.: EMBO J., 15, 7060-7069 (1996)
- 5) Inoue et al.: EMBO J., 26, 2083-2093 (2007)
- 6) Enari et al.: Genes Dev., 20, 1087-1099 (2006)
- 7) Kawase, Ohki et al.: Cell, 136, 535-550 (2009)

Host:

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