CDB SEMINAR

Speaker: Karl Lenhard Rudolph

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Title:

"The role of telomere shortening and telomeraseactivation in chromosomal instability and hepatocacrinogenesis."

Date:	Monday, January 5, 2004
Time:	15:30 P.M.～16:30 P.M.
Place:	7th floor Conference Room of Building A

Summary:

The finding that telomere shortening limits the replicative lifespan of primary human cells has fueled speculations that telomere shortening plays a role during aging and regeneration of tissues in vivo. Support for this hypothesis comes from studies showing telomere shortening in a variety of human tissues as a consequence of aging and chronic disease. Studies in telomerase-deficient mice have given first experimental support that telomere shortening limits the replicative potential of organs and tissues in vivo and have identified telomerase as a promising target to treat regenerative disorders induced by telomere shortening. A potential downside of such an approach could be the development of malignant tumors, which has been linked to reactivation of telomerase in human cancers. In telomerase-deficient mice, telomere shortening showed a dual role in tumorigenesis, enhancing the initiation of tumors by induction of chromosomal instability but inhibiting tumor progression by induction of DNA-damage responses. The success in using telomerase activation for the treatment of regenerative disorders could depend on which of the mechanisms of telomere shortening is dominantly effecting carcinogenesis.

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