

Public Abstract

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Department:Microbiology- Medicine

Degree:MS

Title:The roles of ERK localization and beta-catenin/Bcl-XL regulation in thymic selection.

The activity of the ERK pathway is critical for the positive selection of thymocytes. Recent work has suggested that the cellular localization of ERK may be critical for selection. We test the role of ERK localization in thymic selection and confirm that its localization determines the outcome of selection. ERK activation on the plasma membrane results in negative selection of thymocytes while, golgi activation induces deviation into an alternate T-cell lineage.

The regulation of the pro-survival protein Bcl-XL by beta-catenin is known to be critical for the survival of pre-selection thymocytes. However, the role of these molecules during selection signaling are unclear. We demonstrate here that beta-catenin is initially consistent with survival of positively selected cells. But, later time points during selection are consistent with a role for beta-catenin in the prevention of further differentiation under negatively selecting conditions.