

Are we "Livin" or just "Survivin"?

Apoptosis is regulated by death domain (DD) and/or caspase recruitment domain (CARD) containing molecules and a caspase family of proteases. A novel CARD domain containing protein was recently identified and designated ARC for apoptosis repressor with CARD (1). For more details read out the article:

The inhibitor of apoptosis (IAP) family protects cells from self-execution by blocking the relentless caspase death cascade. IAPs bind to and inhibit activated caspases through their BIR domains. Some IAPs such as Livin also contain a RING domain that has E3 ubiquitin ligase activity and promotes the degradation of Smac/DIABLO through ubiquitination. Since Smac/DIABLO promotes apoptosis by inhibiting IAP-caspase interactions, degradation of Smac/DIABLO allows IAPs to more effectively block caspase activity thereby promoting cell survival.

In general, members of the IAP family are highly expressed in several types of cancer. However, Survivin, an IAP that lacks a RING domain, definitely stands out among the family for its clear association with cancer. Abundantly expressed during development but scarce in normal adult tissues, Survivin is upregulated during tumorigenesis and associated with chemotherapy resistance and poor patient survival.

IAPs are fast emerging as targets for potential diagnostics and therapeutics. For example, patients suffering from diverse cancers develop antibodies against Livin suggesting that Livin may be a novel diagnostic or prognostic tumor marker. Additionally, preclinical studies indicate that down-regulation of Survivin can sensitize tumor cells to chemotherapy, thereby increasing apoptosis and overall treatment response

About the Author

IMGENEX India Pvt Ltd. the only biotech company in Orissa and one of its kinds in Eastern India. IMGENEX India started in Oct as an outsourcing branch of [IMGENEX Corporation](#), San Diego, USA. Find out more information about [Apoptosis](#).

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