

Abstract

Proteins containing a bundle of six anti-parallel α -helices in so-called “death domain” (DD) and similar structures (DED, CARD) represent important players in apoptotic signaling. To DD/DED/CARD domains-containing proteins belong pro-apoptotic membrane receptors from the TNFR superfamily, then adaptor proteins and enzymes as proteases or kinases. These pro-apoptotic „death receptors“ interact with adaptor proteins and initiator caspases containing DDs or DEDs and activate apoptotic signaling cascade. DEDs and DDs are in addition found in many proteins participating in activation of caspases or other non-apoptotic signaling. Many experimental models document that defects in and deregulations of proteins containing DDs and DEDs can have severe if not lethal consequences for an organism. Abberations in these proteins in many cases could lead to cancerogenesis, immunodeficiencies or developmental defects.