

# The function of epiplakin in keratinocytes

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Epiplakin (EPPK), a cytoskeletal linker protein, was originally identified as an autoantigen in serum from a patient with subepidermal blistering disease. To clarify the function of EPPK, we performed slot-blot assays using fusion proteins that included various wild-type and mutated EPPK domains. At least two of the 4.6 repeats in the B domains of epiplakin were necessary for the binding of fusion proteins to keratin. The repeated structures of linker domains were also important for the binding of EPPK to keratin in these assays. Similar but weaker binding to vimentin and desmin was also detected. To confirm these interactions between EPPK and intermediate filaments (IFs), we performed cell- overlay assays with fusion proteins. In HeLa cells, the distribution of fusion proteins in the cytoplasm and their partial colocalization with keratin filaments suggested that the B domains are mainly important for interactions with IFs, while linker domains might include multifunctional regions that are involved in binding to IFs and to molecule(s) other than IFs.