Abstract:

TEAD1 is one of the members of the TEAD transcription factor family. This transcription factor is very important, for example for development of organs. The structure of the entire TEAD1 transcription factor is not now yet known. Nevertheless, structure of two important domains are known. The TEA binding domain, which is important for the binding of the transcription factor TEAD1 to DNA, and the transactivation domain, to which coactivators bind. TEAD1 binds to DNA and upon coactivator bind it affects the transcription of various genes. Genes, that are affected by the transcription factor TEAD1 includes genes regulating proliferation, differentiation and apoptosis of cells. TEAD1 is also the target of the Hippo signalling pathway, which is active in adulthood and prevents abnormal growth of organs. Important for the activity of transcriptional factor TEAD1 are post-translation modifications, such as palmitoylation and phosphorylation.

To discover the entire structure of the transcriptional factor TEAD1 and the way it interacts with DNA, the transcriptional factor TEAD1 was prepared recombinationally by expression in cells of *Escherichia coli* bacteria. Suitable conditions for production of the transcriptional factor TEAD1 were found and the cleavage of the histidine tag by thrombin was performed. The prepared protein was then isolated and purified.