

THE ROLE OF MATH/BTB PROTEINS IN EGG CELL AND AT THE ONSET OF WHEAT (*TRITICUM AESTIVUM* L.) EMBRYOGENESIS

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The conserved BTB and MATH domains are presented in a variety of proteins as a single copy domain, together or in combination with other types of domains. Different functional roles have been identified for BTB proteins such as transcription repression, cytoskeleton regulation as well as protein ubiquitination/degradation in which amino-terminal MATH domain is responsible for substrate specificity. Although the function of MATH/BTB proteins is not clear, distribution of these proteins from yeast to human and domain conservation suggest that they are critical in some cellular functions.

In wheat we have identified existence of at least three MATH/BTB domain proteins encoding genes (*TaMATH/BTB*, *TaMATH/BTB-Ec*, *TaMATH/BTB-2c*) which expression was analyzed in different vegetative tissues, egg cells, zygotes and during embryo development. *TaMATH/BTB* was found to be expressed ubiquitously, while transcript of *TaMATH/BTB-Ec* is presented only in the egg cell. *TaMATH/BTB-2c* is induced after fertilization, with the highest expression level in 2-celled stage proembryo. Subcellular localization of *TaMATH/BTB-2c* was analyzed after generating GFP-fusion proteins. Besides the complete coding region, deletions of either MATH or BTB domain were fused to GFP. Expression and subcellular localization indicates a putative role of *TaMATH/BTB-2c* in cell polarity.

