

## OCCURRENCE, STRUCTURE, AND XYLANASE INHIBITION MECHANISM OF *TRITICUM AESTIVUM* TAXI TYPE XYLANASE INHIBITORS

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Wheat or its flour is a common raw material for the production of bread and as well as other bakery products, gluten starch separation, as well as animal feeding and white beer production. Whereas wheat flour contains starch and gluten (and non-gluten) protein as major constituents, its cell wall constituent arabinoxylan is only a minor constituent. Nevertheless, it has a determining impact on wheat processing and/or on final product yield and/or quality, hence the use of endoxylanases to optimize wheat applications. However, the functionality of endoxylanases can be impacted by proteinaceous inhibitors of such enzymes in wheat. Thus, wheat contains both TAXI (for *Triticum aestivum* xylanase inhibitor) and XIP (for xylanase inhibiting protein) inhibitors. We here describe the current state of the art on TAXI proteins from discovery over protein characterization, to its recombinant production as well as the elucidation of its crystal structure (alone and in complex with *Aspergillus niger* xylanase), and provide insight in the significance of xylanase inhibition in cereal processing.