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## Chemical Approaches Towards Neurodegenerative Disease Prevention: The Role of Coupling Sugars to Phenolic Biomolecular Entities

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### Abstract

Polyphenols are natural molecular entities exhibiting a wide variety of bioactivities including anticholinergic and/or antiamyloidogenic activities. Their low solubility is recognized as a key factor for bioavailability and their glycosylation is indeed relevant to improve the bioaccess to these molecules. In this chapter, chemical and enzymatic syntheses of glycosylated flavonoids, stilbenoids, phenylethanoids and phenylpropanoids are illustrated, covering examples that demonstrate the impact of coupling sugars to bioactive aglycones in their bioavailability and in their pharmacological activity. The chapter is focused particularly on glycosyl polyphenols with promising activities against neurodegenerative impairments, given their potential to intervene in biological processes that cause catastrophic diseases, namely the Alzheimer's disease.