Category: Bioinformatics

Ligand specificity of *Arabidopsis* β-glucosidase 
*BGLU30*

**Pranab Kishor Mohapatra**¹, **Mukesh Kumar Raval**² and **Basanti Biswal**³

¹Department of Chemistry, CV Raman College of Engineering, Bidyanagra Mahura, Janla, Bhubaneswar, Odisha 752054, INDIA  
²Department of Chemistry, Gangadhar Meher University, Sambalpur, Odisha, INDIA  
³School of Life Science, Sambalpur University, Jyoti Vihar, Burla, Sambalpur, Odisha, INDIA

Presenting author: pranab.mohapatra@cvrgi.edu.in

**Abstract**

β-Glucosidase, a family 1 glycosyl hydrolase (GH1), encoded by *din2* in *Arabidopsis* is reported to be expressed during late phase of senescence [1, 2]. In absence of 3D structure of *Din2* (*BGLU30*), an attempt has been made to build 3D structure of the enzyme by homology modeling and to analyze the active site based upon the template structure from other β-glucosidases to decipher the function of the enzyme. The structural insight, energetics and docking of ligands reveal that Arg380 residue may play a role in the catalysis. The residue is conserved in *Arabidopsis BGLU28* and *BGLU29* β-glucosidases of GH1 also. Participation of Arg380 in the hydrolysis of β-glucoside is discussed.

**References**


[2] Patro, L., Mohapatra, P.K., Biswal, U.C. and Biswal, B. (2014) Dehydration induced loss of photosynthesis in Arabidopsis leaves during senescence is accompanied by the reversible enhancement in the activity of cell wall β-glucosidase. *J Photochem Photobiol B* 137: 49-54. [https://doi.org/10.1016/j.jphotobiol.2014.03.018](https://doi.org/10.1016/j.jphotobiol.2014.03.018)

**Citation:** Mohapatra, P.K., Raval, M.K. and Biswal, B. Ligand specificity of *Arabidopsis* β-glucosidase *BGLU30* [Abstract]. In: Abstracts of the NGBT conference; Oct 02-04, 2017; Bhubaneswar, Odisha, India: Can J Biotech, Volume 1, Special Issue (Supplement), Page 217. [https://doi.org/10.24870/cjb.2017-a202](https://doi.org/10.24870/cjb.2017-a202)