# Modular Glucosides for Therapeutic Compositions

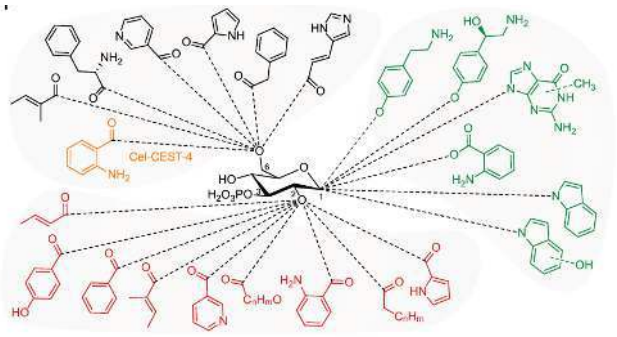
## Modular Glucosides Are a New Class of Small Bioactive Compounds with Strong Potential for Drug Development

HUMAN AND ANIMAL HEALTH

SMALL MOLECULE DRUG

## TECHNOLOGY HIGHLIGHTS

- BTI and Cornell scientists have identified novel sub-classes of Modular Glucosides (MOGLs). MOGLs encompass a broad class of small bioactive metabolites featuring a glucose moiety.
- MOGLs modified with neurotransmitters and related derivatives (**NeuroMOGs**) could potentially affect mental states.
- Certain MOGLs are predicted to be kinase modulator and could help treat certains cancers, hypertension, auto-immune and degenerative diseases.
- Nucleotide-related MOGLS (**nuMOGs**) could be used against cancer or as antivirals.



Examples of Modular Glucosides with Acyl Moeities on $C_1$, $C_2$ and $C_6$ of 2-*O*-Phopshoprtylate Glucose

- MOGLs derived from glucosides of methylcrotonate-related moieties (**MeMOGs**), which are naturally produced in a TOR-dependent manner, offer new opportunities for immunosuppression/organ transplantation, and against cancer and coronary artery disease.
- Experimental data indicates that certain MOGLs are potential proteasome modulators
- Ongoing research seeks to characterize the biological activities for particualr compounds to help understand the full potential of this class of molecules for disease targeting and drug development

### References


Le HH, Wrobel CJ, *et al.*, Modular Metabolite Assembly in *Caenorhabditis elegans* Depends on Carboxylesterases and Formation of Lysosome-Related Organelles. ***Elife***. 2020;9:e61886.

Wrobel CJ, Yu J, *et al.*, Combinatorial Assembly of Modular Glucosides via Carboxylesterases Regulates *C. elegans* Starvation Survival. ***J. Am. Chem. Soc***. 2021;143(36):14676-14683.


### INTELLECTUAL PROPERTY

**Therapeutic Compositions and Related Methods**

*Application PCT/US2022/041757*

*Status: pending (USPTO, EPO)*

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### MEET OUR FACULTY/INVENTOR

**Frank C Schroeder** is Professor at the Department of Chemistry and Chemical Biology at Cornell University and an HHMI Faculty Scholar. The Schroeder lab at BTI uses comparative metabolomics to discover novel classes of small molecules and studies the structure and function of biogenic small molecules. His work is leading to groundbreaking discoveries that impact agriculture, human health and animal health.

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