# UGC 2.0 Assay

**UGC™ 2.0 – Universal Glycosyltransferase Continuous Assay**
**Real-time, standardized detection of glycosyltransferase activity**

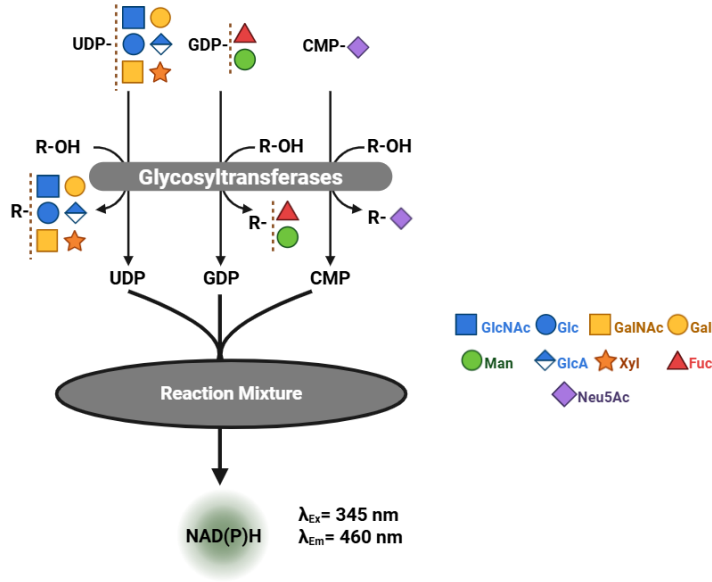
**Key Features**

**-Universal GT Compatibility**
Works with a wide range of glycosyltransferases, independent of donor or acceptor substrate, enabling broad applicability across GT families.

**-Continuous Real-Time Readout**
NADPH fluorescence is monitored continuously, providing high-resolution kinetic data for determining catalytic efficiency, donor preference, and reaction dynamics.

**-Robust Coupled-Enzyme System**
The optimized coupling cocktail converts nucleotide release (UDP, GDP, CMP) into a clean, amplified fluorescent signal, ensuring sensitivity and reproducibility across assays.

**-Standardized Platform for Inhibitor Discovery**
Fixed, validated reaction chemistry eliminates assay-to-assay variability, making UGC™ 2.0 ideal for high-throughput screening, $IC_{50}$ determination, mode-of-inhibition studies, and comparative profiling of inhibitor libraries.




**Assay Principle**
UGC™ 2.0 couples the glycosyltransferase reaction to NADPH formation.
As the GT transfers a sugar donor to an acceptor substrate, it releases a nucleotide (UDP, GDP, or CMP).
A specialized enzyme cocktail rapidly converts this nucleotide into intermediates that drive **$NADP^+$ → NADPH** reduction.
The **rate of NADPH fluorescence increase is directly proportional to GT activity**, enabling real-time kinetic analysis.

**Kit Components**
**Enzyme Cocktail**
– Nucleotide kinases tailored for sensitive detection of **CMP, UDP, and GDP** release
– Sugar kinases and dehydrogenase optimized to continuously couple kinase products to **$NADP^+$ reduction**
**Assay Buffer**
– Formulated for broad glycosyltransferase compatibility, including required intermediate substrates
**Optional Add-Ons (upon request)**
– Positive control glycosyltransferase
– Positive control donor/acceptor substrate
**User Guide**
– Detailed protocol for kinetic assays, substrate profiling, and high-throughput screening (HTS)