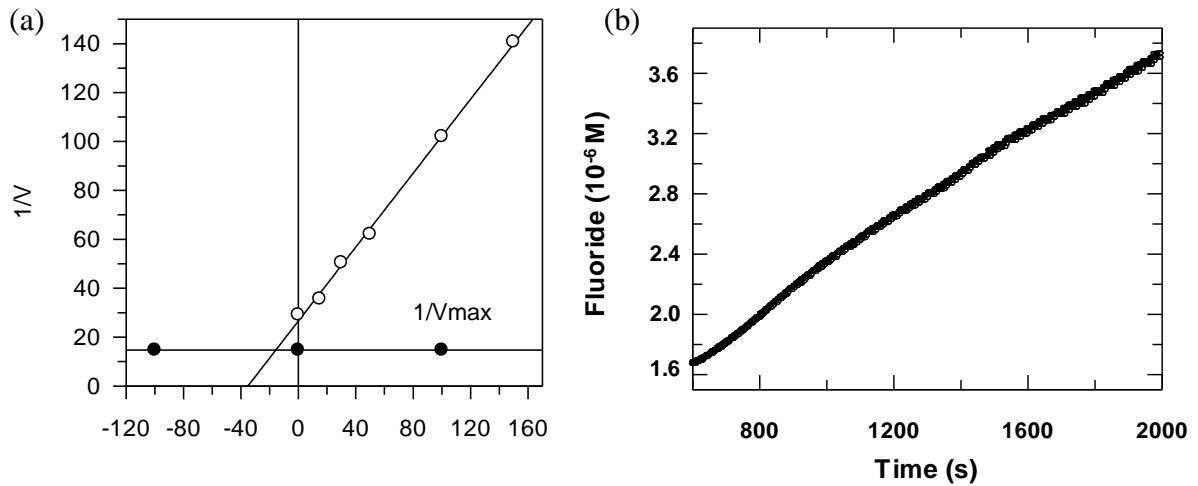
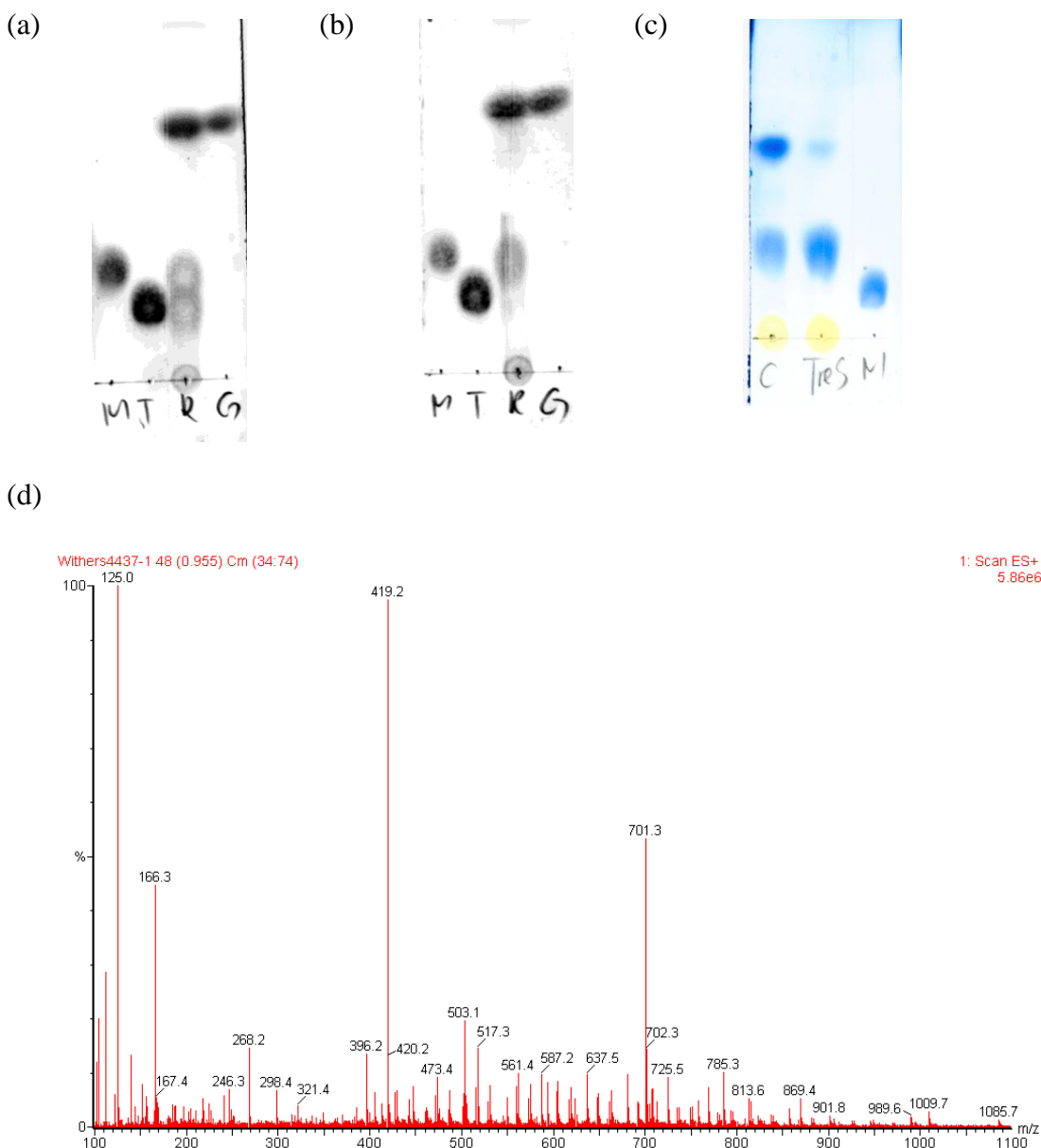


SUPPLEMENTAL DATA.

This data is intended for publication within the Supplemental information section



Supplementary Figure 1: (a) Dixon plot of 5FGlcF as an apparent reversible inhibitor of TreS (b) Reaction of 1 mM 5FGlcF and 0.5 μ M TreS enzyme at 37 $^{\circ}$ C, monitored by a fluoride ion electrode.



Supplementary Figure 2: TLC analysis of reactions (a) 10 mM U-¹³C-D-glucose, 2 mM maltose and 0.14 μM TreS (b) 10 mM U-¹³C-D-glucose, 2 mM maltose and no enzyme at 37 °C for 24 hours followed by lyophilization, acetylation and aqueous workup. There are four lanes in each of the TLC plates. From left to right: per-*O*-acetylated maltose; per-*O*-acetylated trehalose; reaction mixture; per-*O*-acetylated glucose. The TLC (aluminum-backed sheets of silica gel) was developed using the following mixed solvent system: diethyl ether/petroleum ether (v/v = 2:1). (c). TLC analysis of the reaction of 15 mM glucose, 5 mM αGlcF and 0.35 μM TreS enzyme at room temperature for 28 hours. The three lanes on the TLC are from left to right, control sample (no enzyme); TreS reaction

and maltose standard. The TLC was developed in EtOAc/MeOH/water (v/v/v = 7:2:1).
(d) Mass spectrum of the reaction containing 10 mM U-¹³C-D-glucose, 2 mM maltose and 0.14 μM TreS at 37 °C for 24 hours followed by lyophilization, acetylation and aqueous workup.