

Figure S1. Negative-ion ESIMS/MS of the ion $[\text{Fuc}(\text{SO}_3\text{Na}) - \text{Na}]^-$ at m/z 245.00, labeled with ^{18}O

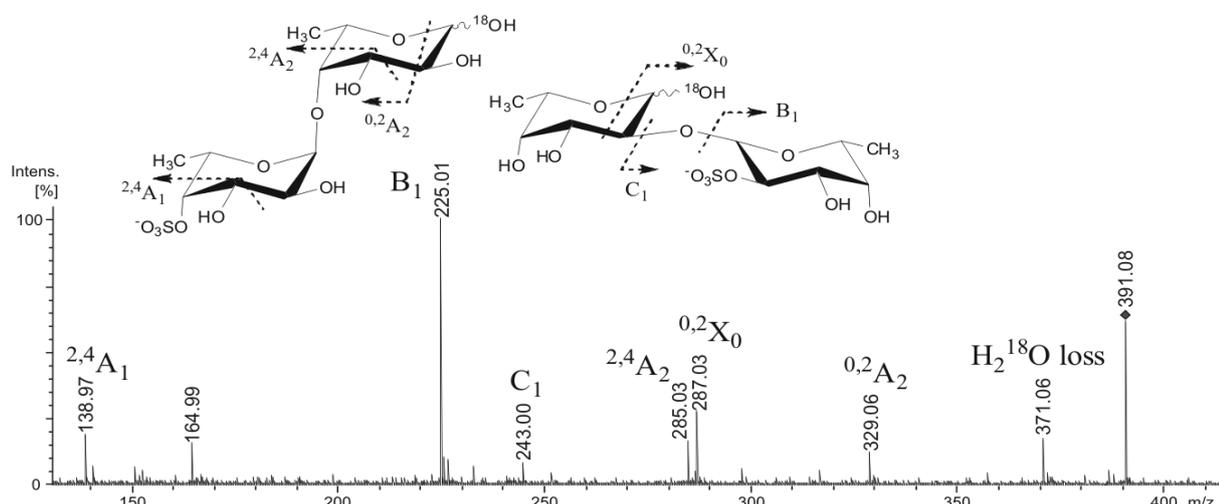


Figure S2. Negative-ion ESIMS/MS of the ion $[\text{Fuc}_2(\text{SO}_3\text{Na}) - \text{Na}]^-$ at m/z 391.08, labeled with ^{18}O

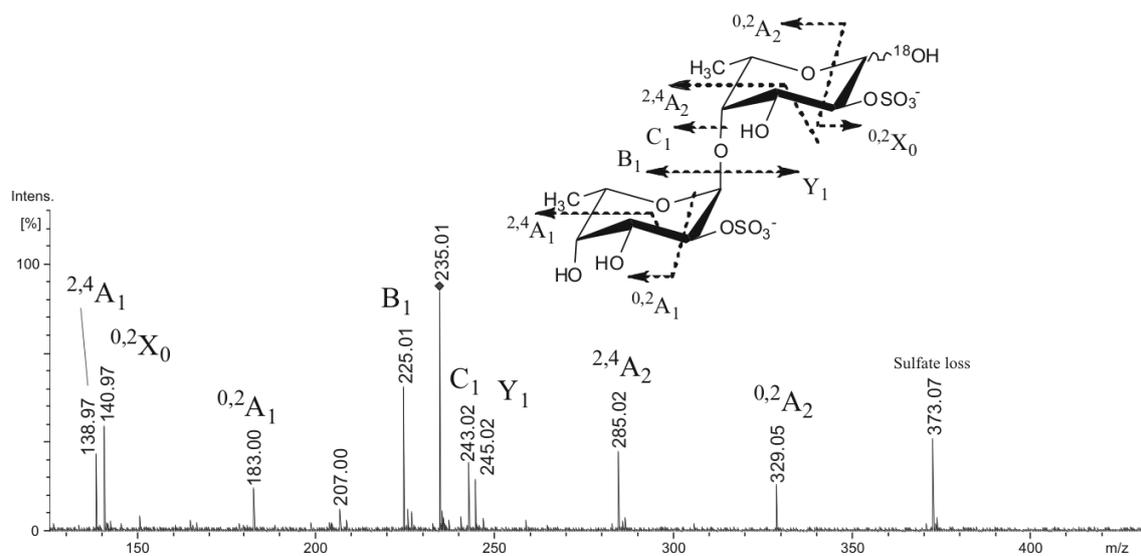


Figure S3. Negative-ion ESIMS/MS of the ion $[\text{Fuc}_2(\text{SO}_3\text{Na})_2 - 2\text{Na}]^{2-}$ at m/z 235.01, labeled with ^{18}O

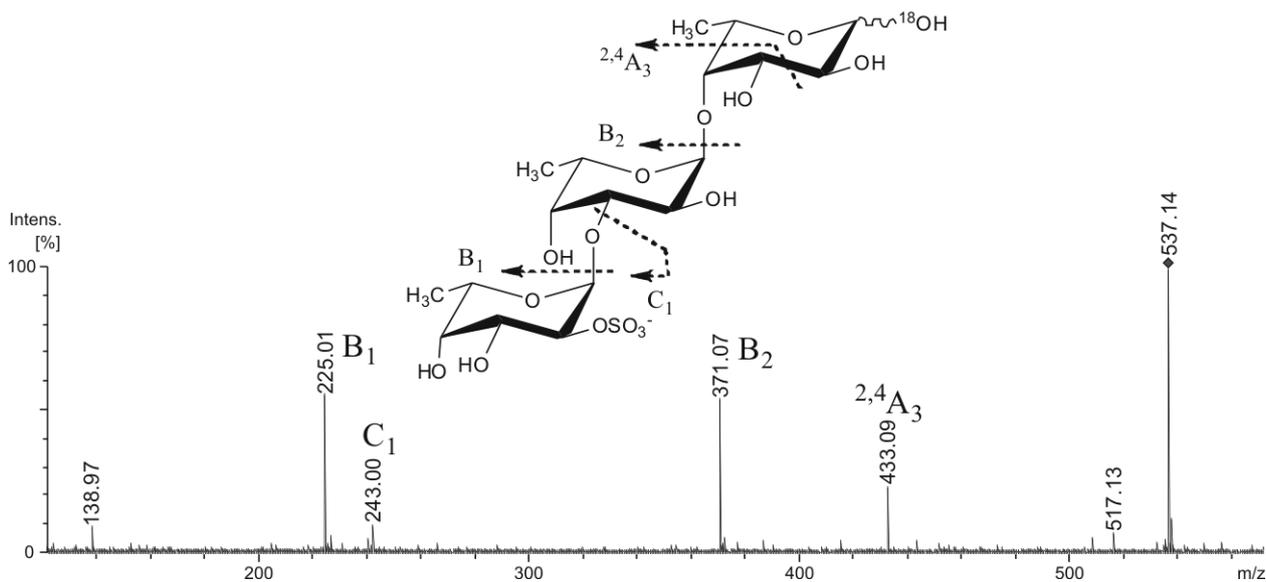


Figure S4. Negative-ion ESIMS/MS of the ion $[\text{Fuc}_3\text{SO}_3\text{Na} - \text{Na}]^-$ at m/z 537.14, labeled with ^{18}O

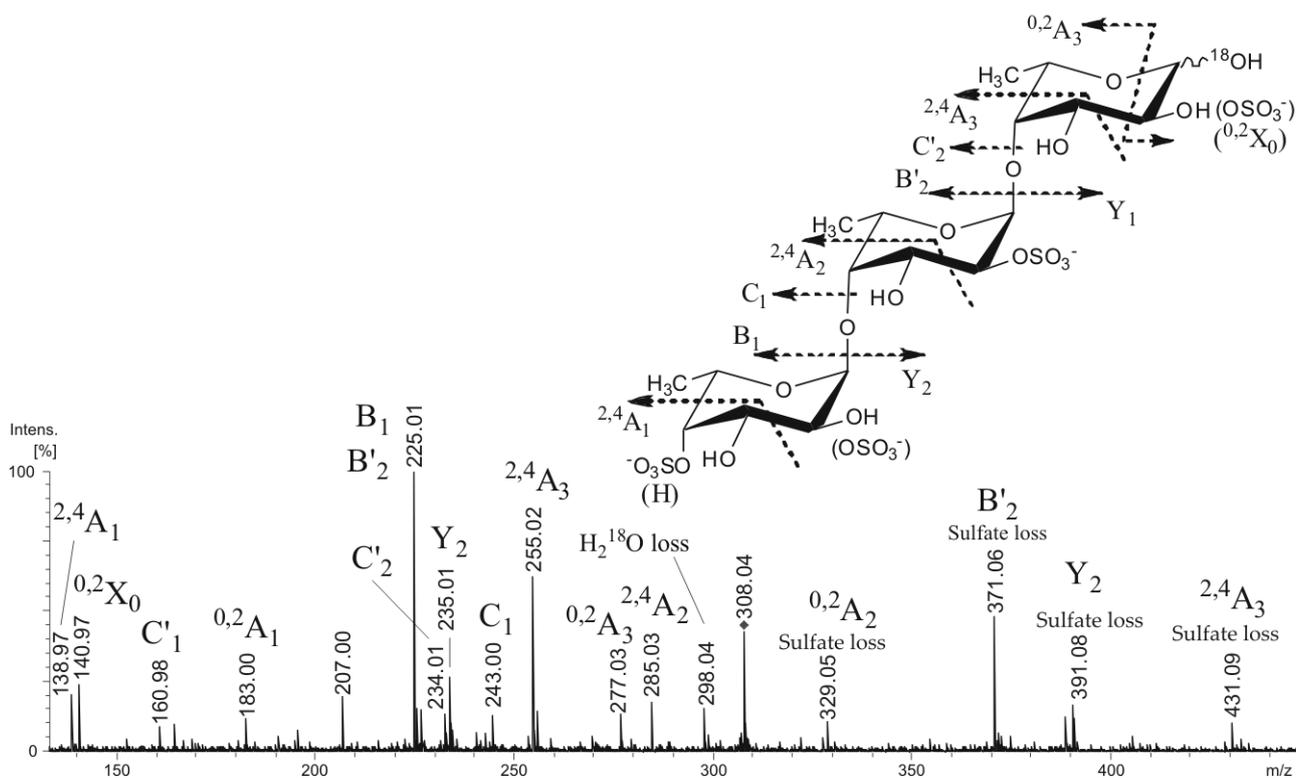


Figure S5. Negative-ion ESIMS/MS of the ion $[\text{Fuc}_3(\text{SO}_3\text{Na})_2 - 2\text{Na}]^{2-}$ at m/z 308.04, labeled with ^{18}O

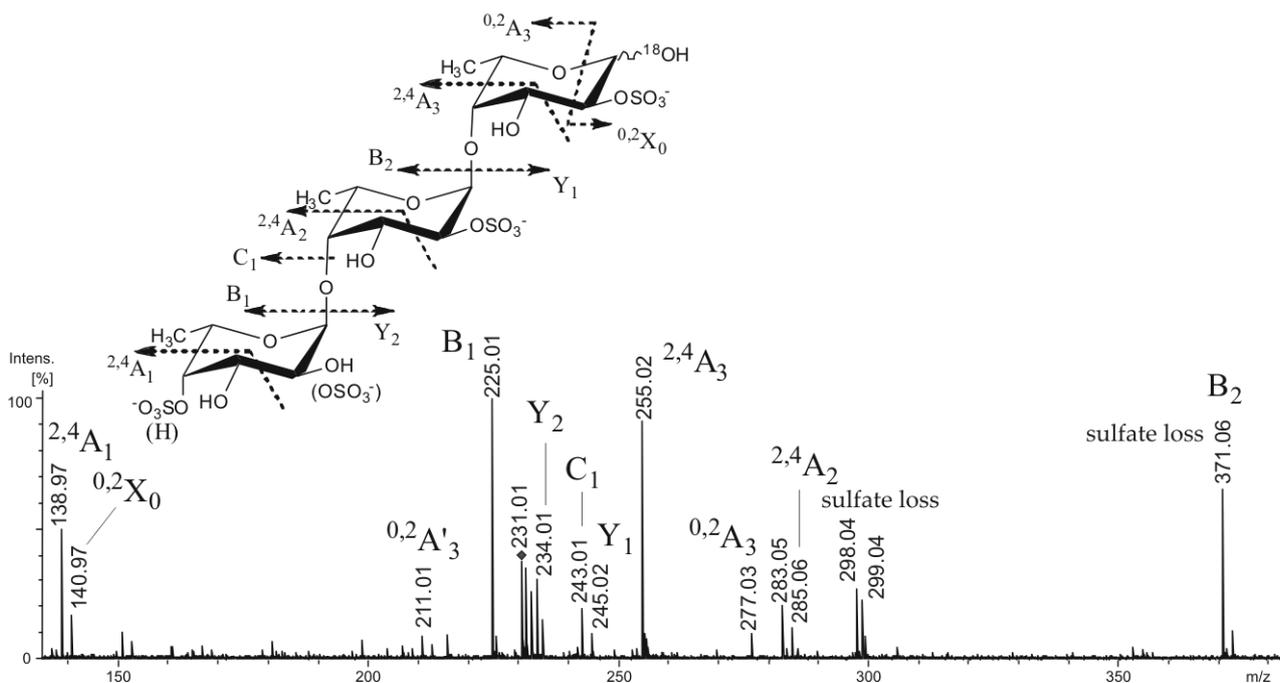


Figure S6. Negative-ion ESIMS/MS of the ion $[\text{Fuc}_3(\text{SO}_3\text{Na})_3 - 3\text{Na}]^{3-}$ at m/z 231.68 (with ^{18}O label)

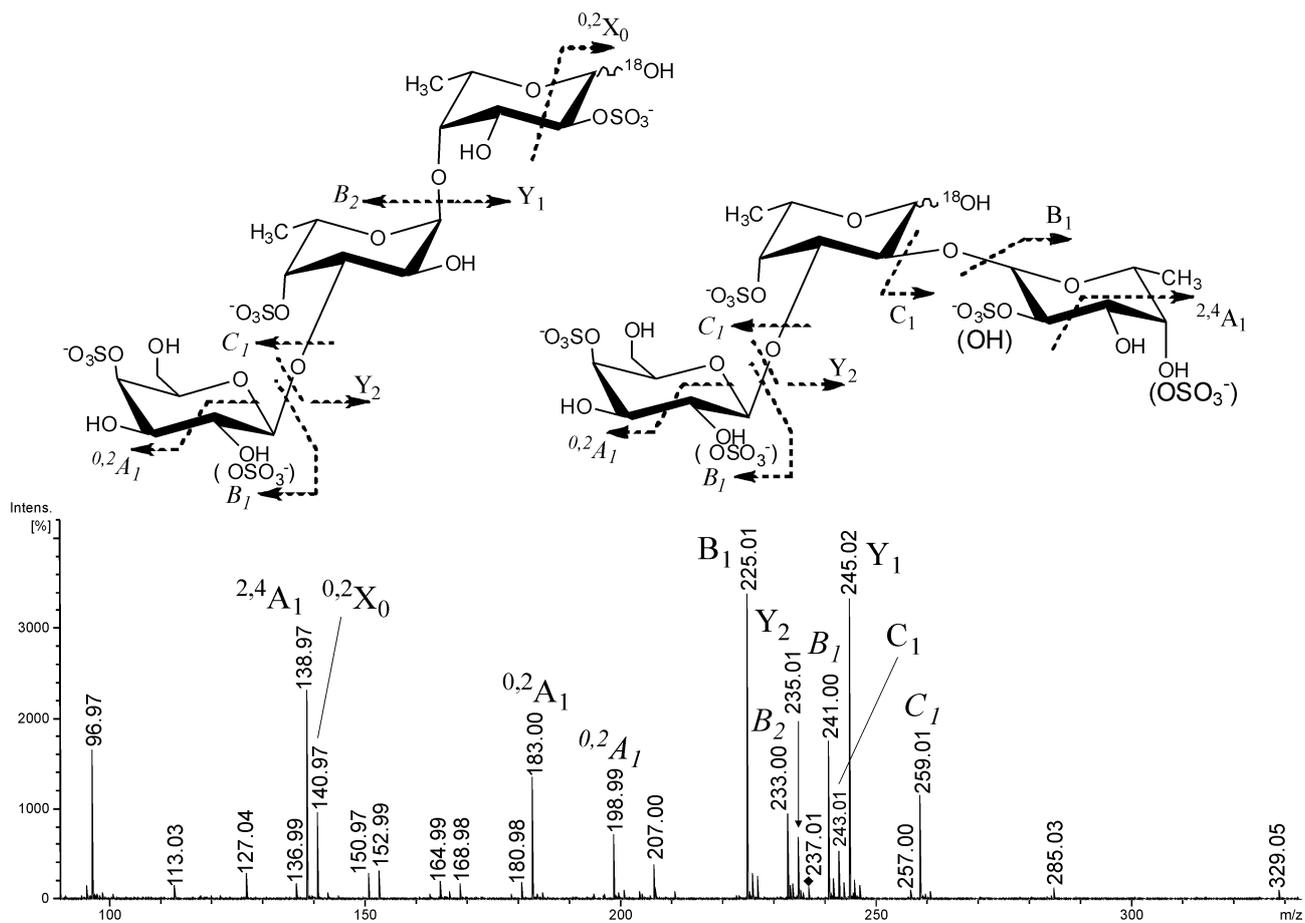


Figure S7. Negative-ion ESIMS/MS of the ion $[\text{Fuc}_2\text{Gal}(\text{SO}_3\text{Na})_3 - 3\text{Na}]^{3-}$ at m/z 237.01, labeled with ^{18}O

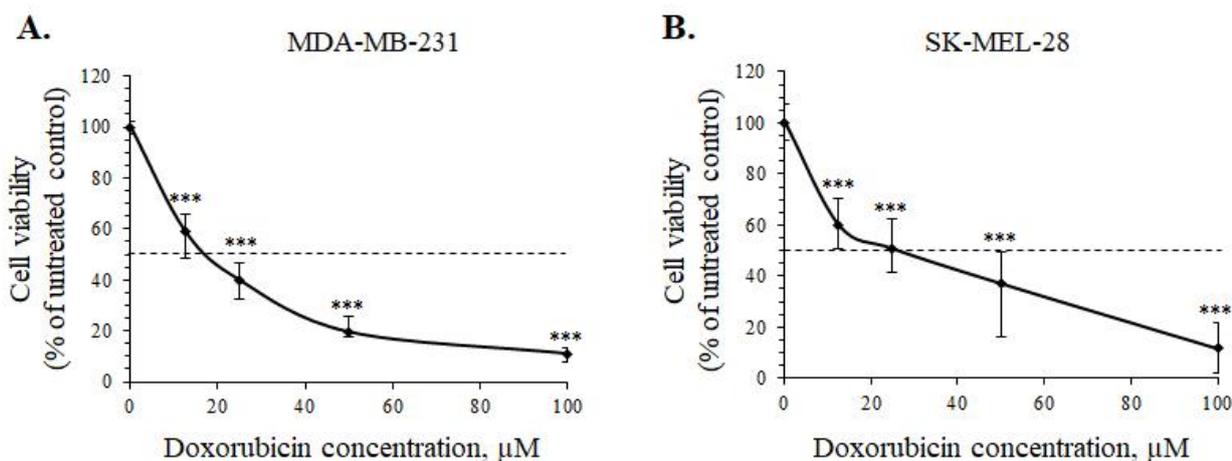


Figure S8. The cytotoxic effects of doxorubicin against breast cancer MDA-MB-231(A) and melanoma SK-MEL-28 (B) cells

MDA-MB-231 and SK-MEL-28 cells were treated by doxorubicin (12.5, 25, 50, 100 μM) and incubated for 24 h. The cell viability was estimated by MTS assay. The data are presented as mean \pm SD for triplicate experiments. A one-way ANOVA indicated the statistical significance compared to control (** $p < 0.001$).