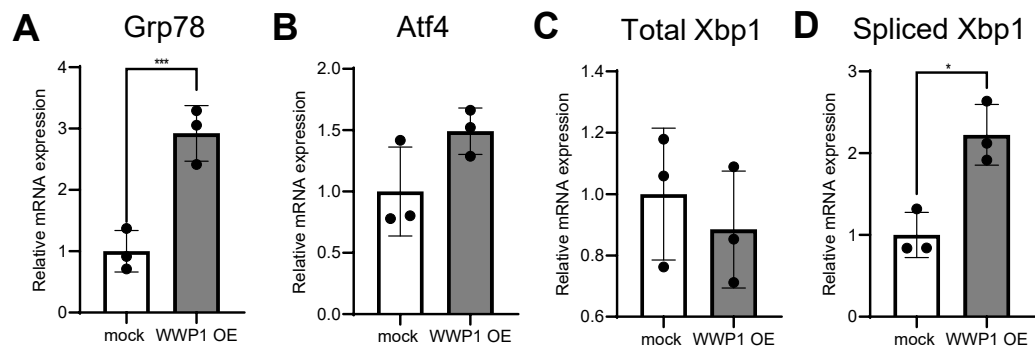
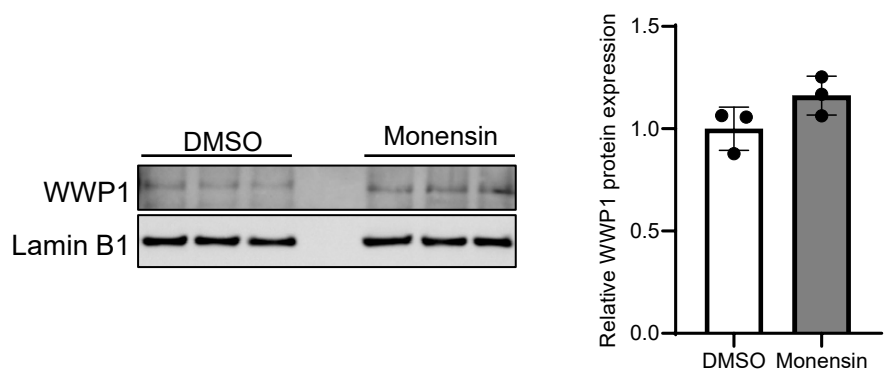


Supplemental Figure 1



Supplemental Figure 1. WWP1 influenced endoplasmic reticulum stress in differentiated 3T3L1 adipocytes. (A-D) The mRNA level of *Grp78*, *Atf4*, *Total Xbp1* and *Spliced Xbp1* in differentiated mock and WWP1 overexpressing (OE) differentiated 3T3L1 adipocytes were analyzed by real-time PCR. *Rps18* was used as a reference control. Differences between each value were analyzed by Student's t-test. (*: $p < 0.05$, ***: $p < 0.001$).

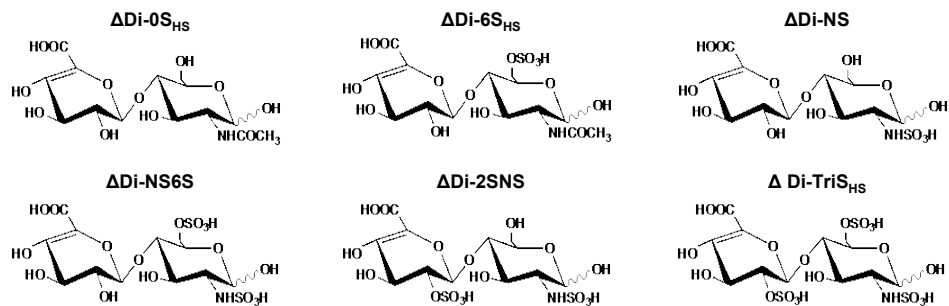
Supplemental Figure 2



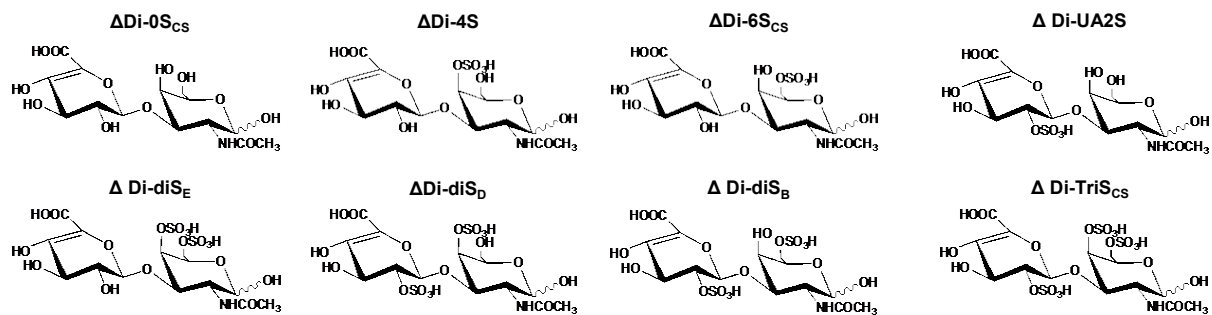
Supplemental Figure 2. Expression level of endogenous WWP1 in differentiated 3T3L1 adipocytes under Golgi stress. (A) The differentiated 3T3L1 adipocytes were treated by DMSO or 10 μ M monensin for 6 hours and analyzed by immunoblotting for anti-WWP1 antibodies. Lamin B1 was used as a loading control. (B) The quantitative data are shown as the mean $\pm$ SD (n = 3). Differences between each value were analyzed by Student's t-test.

Supplemental Figure 3

Unsaturated disaccharide unit of heparan sulfate



Unsaturated disaccharide unit of chondroitin sulfate



Supplemental Figure 3. The structure of unsaturated disaccharides of HS and CS.