



### Supplementary Figure 1. Upregulation of GDA in melasma.

Representative immunofluorescence staining with anti-GDA antibody in lesional skin samples (L) compared to that in non-lesional skin samples (N) from five patients with melasma. Nuclei were counter-stained with Hoechst 33258. Intensities of immunofluorescence staining were measured using a Wright Cell Imaging Facility ImageJ software. \* $P < 0.05$  vs. non-lesional skin samples.