# Supplementary Materials

Table S1. Primer Sequence.

| Gene Name | Primer Sequence/(5′→3′) | Annealing Temperature/°C | Product Size/bp |
|---|---|---|---|
| PLIN2 | F: CTGTCTACCAAGCTCTGCTC<br>R: CGATGCTTCTCTTCCACTCC | 80.2 | 120 |
| GAPDH | F: ACCACAGTCCATGCCATCAC<br>R: TCCACCACCCTGTTGCTTA | 84.9 | 124 |

**Table S2.** BiFC results with different PLIN2 and CGI-58 vector in 3T3-L1 cell lines.

| Vectors Name | Efficiency |
|---|---|
| PLIN2-VN173+CGI-58-VC155 | ++ |
| PLIN2-VN173+PLIN2-VC155 | ++ |
| CGI-58-VN173+CGI-58-VC155 | + |
| CGI-58-VN173+PLIN2-VC155 | + |

**Table S3.** GST-pulldown vector of PLIN2 and CGI-58 primers.

| Gene Name | Primer Sequence/(5′→3′) |
|---|---|
| GST-PLIN2 | F: gatctggttccgcgtggatccGCATCTGTTGCAGTTGAACCAC<br>R: tcagtcagtcacgatgaattcTCAAGAGGAGCTGTCATCTGGC |
| HIS-CGI-58 | F: atcaaaggagatataccatggCGGCAGAGGAGGATGGGG<br>R: atggtgatggtggtgctcgagGTCCACAGTGTCACAGATCTCC |

**Table S4.** BiFC vector of PLIN2 and CGI-58 primers.

| Gene Name | Primer Sequence/(5′→3′) |
|---|---|
| VN-173-PLIN2 | F: caagcttgcggccgcgaattcAGCATCTGTTGCAGTTGAACCA<br>R: ggtggcgatggatcttctagaAGAGGAGCTGTCATCTGGCTGG |
| VN-173-CGI-58 | F: caagcttgcggccgcgaattcAGCGGCAGAGGAGGATGG<br>R: ggtggcgatggatcttctagaGTCCACAGTGTCACAGATCTCCTTC |
| VC-155-PLIN2 | F: tggccatggaggcccgaattcAGGCATCTGTTGCAGTTGAACC |
| | R: acgccggacgggtacctcgagAAGAGGAGCTGTCATCTGGCTG |
| VC-155-CGI-58 | F: tggccatggaggcccgaattcAGGCGGCAGAGGAGGATG |
| | R: acgccggacgggtacctcgagAGTCCACAGTGTCACAGATCTCCTT |

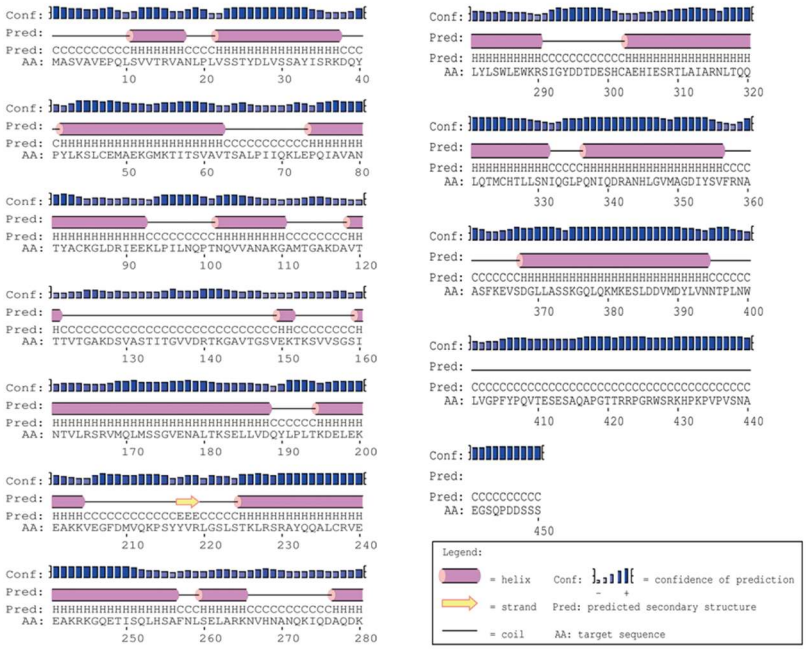


**Figure S1.** visualization of PLIN2 secondary structure of helix, strand and coil. It can be indicated PLIN2 contains helix mainly after prediction.

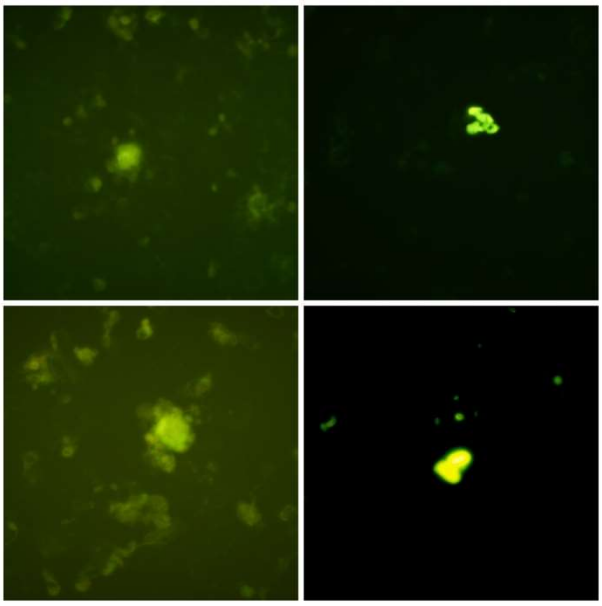

**Figure S2.** visualization of PLIN2 with CGI-58 interaction groups in bovine adipocytes, the fluorescence emissions of the cells were imaged 24h after transfection( a, PLIN2-VC173+CGI-58-VC155, b, PLIN2-VN173+PLIN2-VC155(first line right), c, CGI-58-VN173+CGI-58-VC155, d, CGI-58-VN173+PLIN2-VC155). The strong fluorescence of Venus in cells co-expressing CGI-58-VN173 and PLIN2-VC155, CGI-58-VN173 and CGI-58-VC155 detected by fluorescence microscope demonstrated CGI-58 could interact with PLIN2. The weak fluorescence in other cells were also detected. These results revealed the interacting relationships between PLIN2 and CGI-58 in vivo, including the self-interaction (OLMPUS 200X).

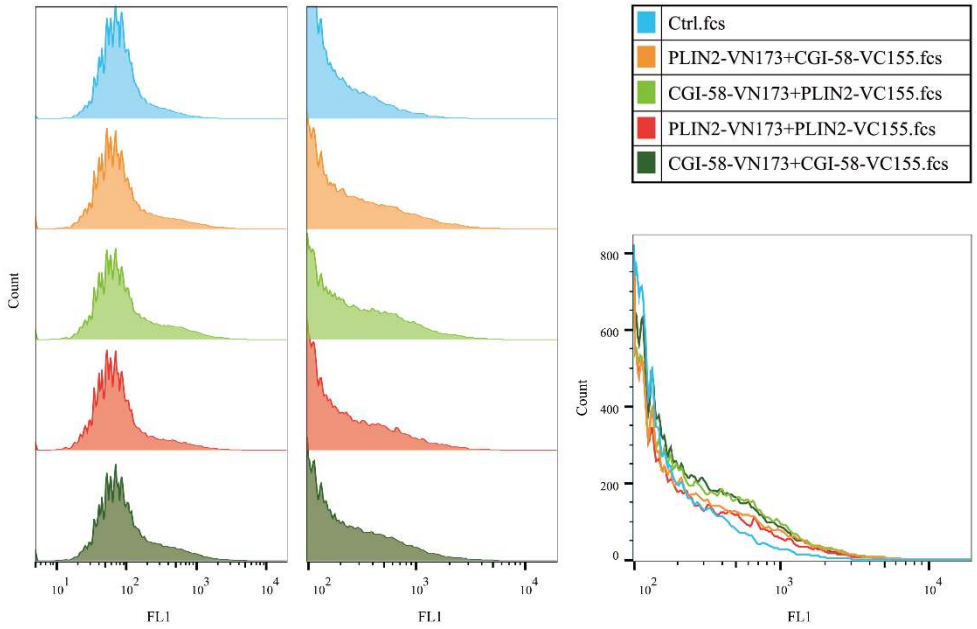


**Figure S3.** Flow cytometry showed all samples harbored the stronger fluorescenceintensity that control cells (3T3-L1 cells), although the number of detected cells containing fluorescence are not abundant (**Left**). A noticed data that the fluorescenceintensity of cells containing CGI-58-VN173 and PLIN2-VC155, CGI-58-VN173 and CGI-58-VC155 were stronger than cells harboring other protein-protein pairs. Cells harboring higher fluorescenceintensity were gated (**Middle**) and then the Counts-Fluorescenceintensity distribution of these cells were analyzed by FlowJo® software (**Right**).