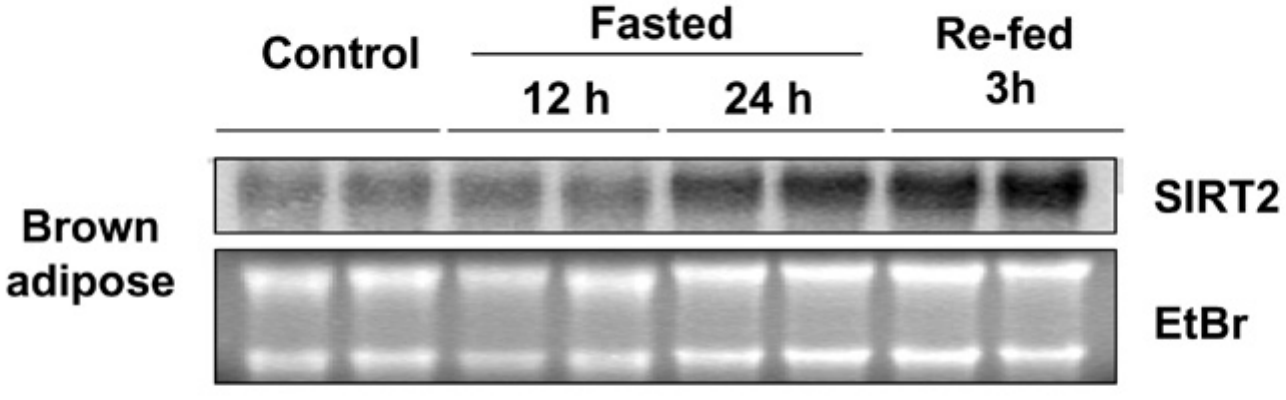
Supplemental Figure 1. Regulation of SIRT2 expression in brown adipose tissue by fasting. Sixteen weeks old C57BL/6 male mice were deprived of food at the onset of dark cycle (6:00pm). Twenty-four hours later, mice were re-fed for three hours. Total RNA were extracted from brown adipose, and examined by Northern blot analysis for SIRT2 expression.

Supplemental Figure 2. Adipocyte differentiation of 3T3-L1 cells with SIRT2 knock down or over expression. A. 3T3-L1 Cells with SIRT2 shRNA knock-down were differentiated as described by Jing et al (Jing *et al.*, 2007). B. 3T3-L1 cells with retroviral expression of SIRT2 or SIRT2-N168A mutant were differentiated as described by Jing et al (Jing *et al.*, 2007), with or without treatment of1μm rosiglitazone.

Supplemental Figure 3. Sub-cellular distribution of FOXO1 and PPARγ. HEK293T cells were transfected with FOXO1, PPARγ and SIRT2 or SIRT2-N168A (SIRT2NA). Twenty-four hours after transfection, cells were treated with TSA (1μM) for 2 hours. After the cells were fractionated into cytoplasmic and nuclear fractions, sub-cellular distributions of FOXO1, PPARγ and SIRT2 were detected by Western blotting. GAPDH and Lamin A/C were examined as markers for sub-cellular fractionation efficiency.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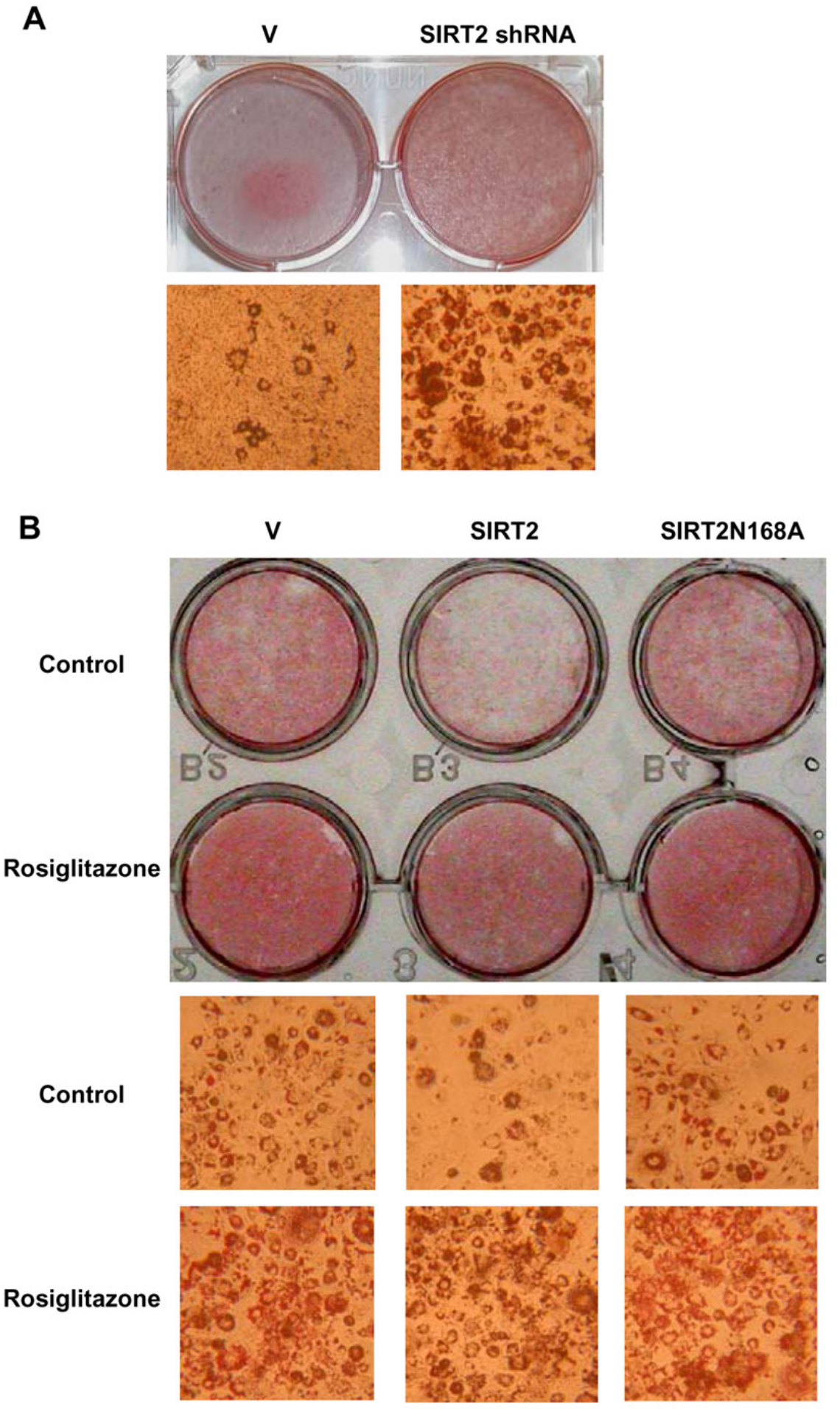
12 h
24 h
Re-fed
3h
Brown adipose
SIRT2
EtBr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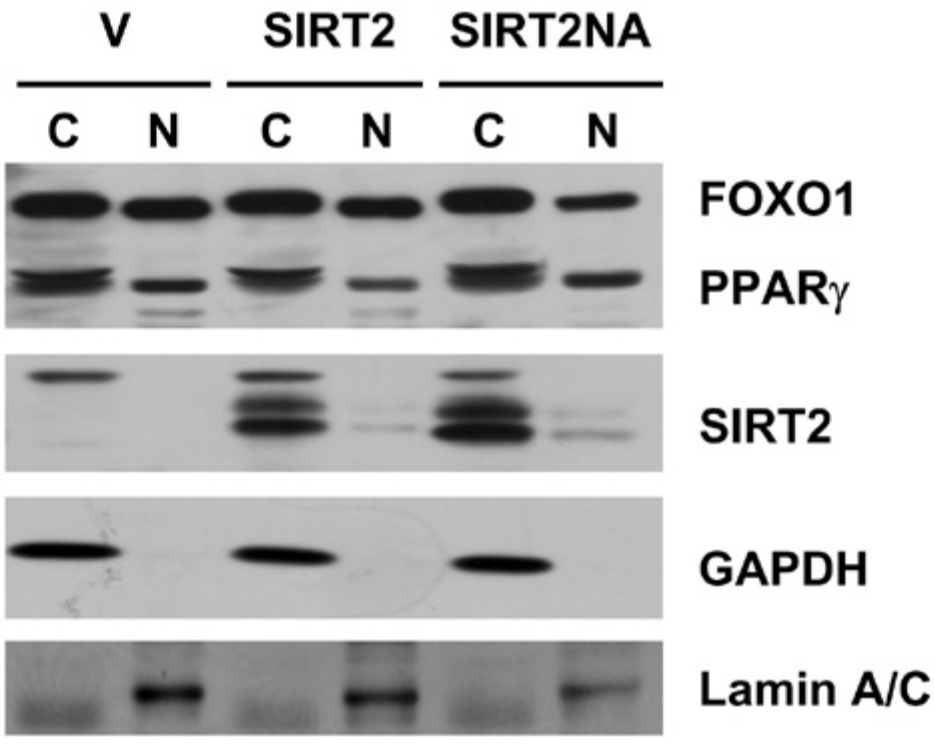
V
SIRT2 shRNA
B
V
SIRT2
SIRT2N168A
Control
Rosiglitazone
Control
Rosiglitazone


V
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SIRT2NA
C
N
C
N
C
N
FOXO1
PPARγ
SIRT2
GAPDH
Lamin A/C