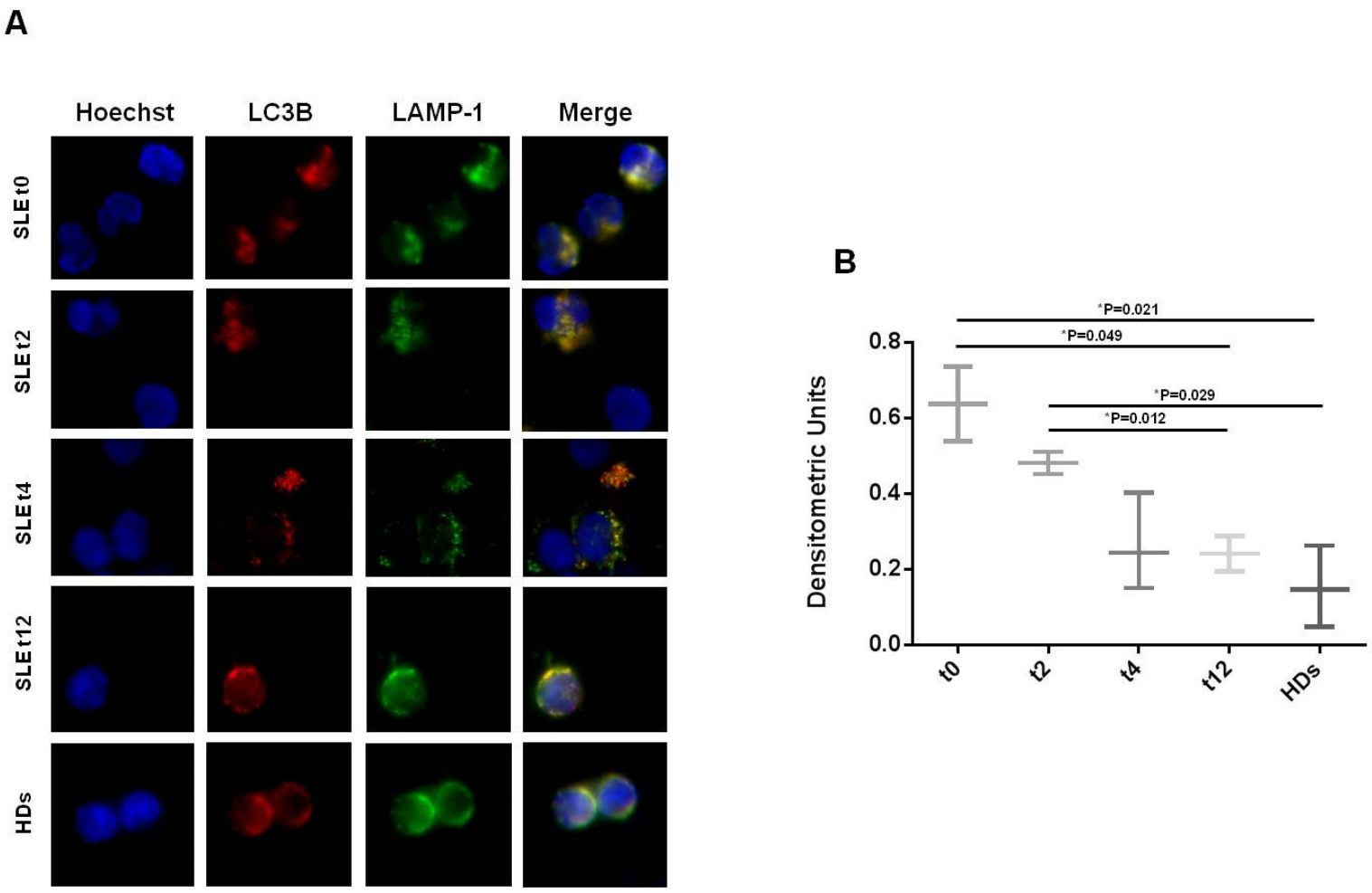
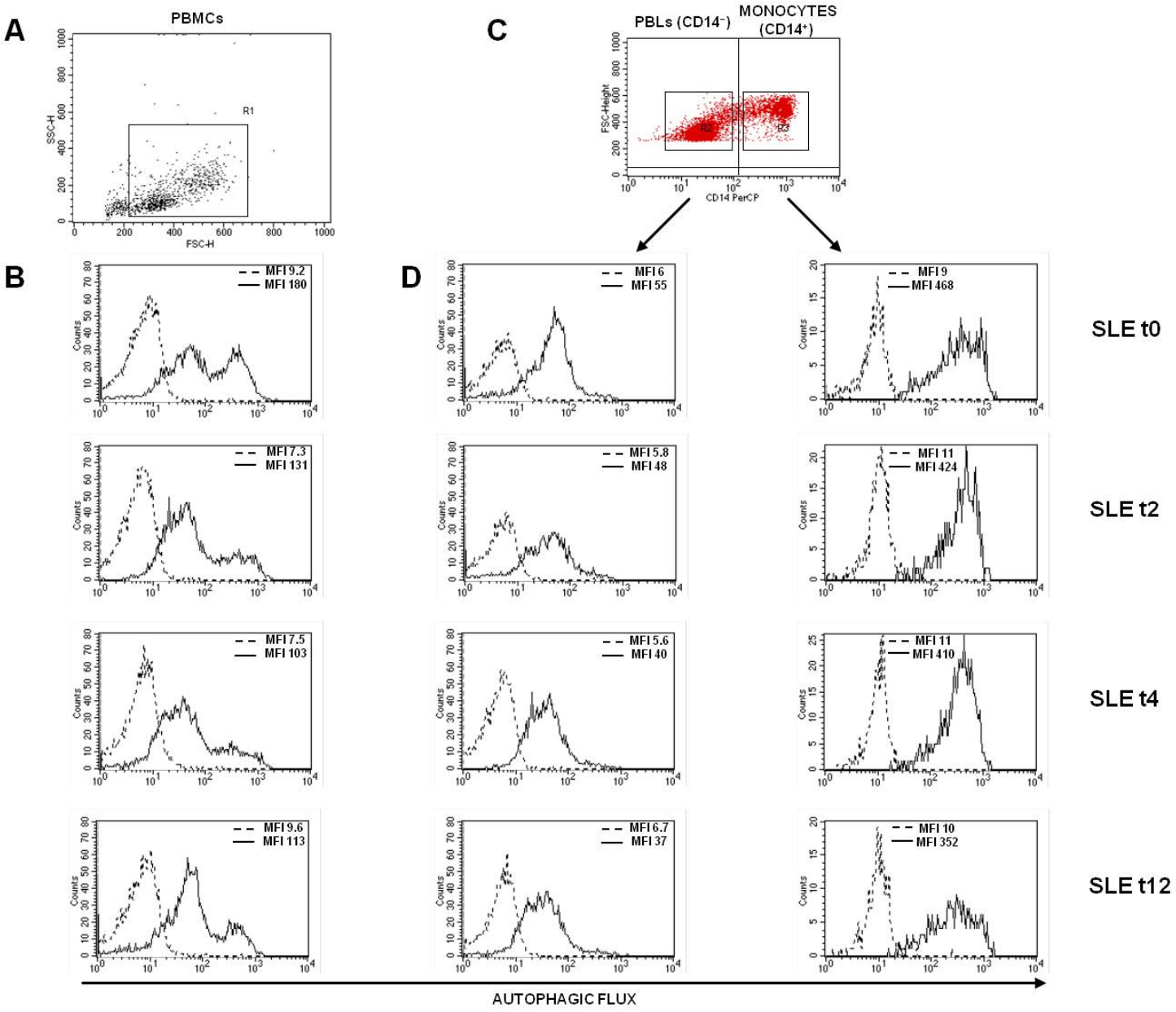


Supplementary Figure S1. Immunofluorescence analysis of LC3B and LAMP-1 localization in PBMCs from SLE patients and HDs. A representative image of LC3B expression as LC3 puncta (red fluorescence) and LAMP-1 expression (green fluorescence) in Triton X-100-permeated cells. PBMCs from SLE patients at (**A**) baseline (t0) and after 2, 4 and 12 weeks (t2, t4 and t12) of belimumab administration and from HDs. Results from a representative experiment are shown. Cells were stained with Hoechst dye to reveal nuclei (blue staining). The yellow spots indicate co-localization (merge) of the two markers in autophagic cells. A diffuse cytoplasm staining with virtually no puncta is visible at t0 and t2, while at t4 and then at t12, a typical punctate staining is observable, more similar to that of the HDs, in which rare yellow spots (autophagic vacuoles) are present. Magnification: 100X. (**B**) Quantification by densitometry evaluation of LC3B and LAMP-1 co-localization (merge yellow spots) from positive cells, as resulted by immunofluorescent staining for each condition in 3 independent experiments. In PBMCs from SLE patients, a reduction at all the timepoints and significant differences with respect to HDs were observed (P=0.049 t0 *vs* t12, P=0.021 t0 *vs* HDs, P=0.012 t2 *vs* t12, P=0.029 t2 *vs* HDs). Results are represented as mean ± standard deviation (SD) of densitometric units.



Supplementary Figure S2. Flow cytometric analysis of autophagic vacuoles accumulation in total PBMCs, PBLs ($CD14^-$ cells) and monocytes ($CD14^+$ cells) from SLE patients being treated with belimumab. (**A**), (**C**) Phenotypic characterization of PBMCs from 26 SLE patients by showing the expression of PBLs ($CD14^-$ cells) and monocytes ($CD14^+$ cells). Flow cytometric images represent PBMCs population (R1 gate) and PBLs ($CD14^-$ cells, R2 gate, left quadrant) and monocytes ($CD14^+$ cells, R3 gate, right quadrant). Results from a representative experiment are shown. (**B**), (**D**) Flow cytometric analysis of cells stained with a selective dye monitoring autophagic flux and anti-CD14 mAbs. Autofluorescence is represented by the black-broken line and autophagic vacuoles accumulation by the black-solid line. Results obtained in a representative experiment are shown as mean fluorescence intensity (MFI).

Table S1. Flow cytometric analysis of autophagic vacuoles accumulation in total PBMCs, PBLs ($CD14^-$ cells) and monocytes ($CD14^+$ cells) from SLE patients being treated with belimumab.

	Autophagic vacuoles accumulation (Mean Intensity Fluorescence) Fold increase	***P* value vs baseline (t0)**
t0	**Median (25°-75° percentile)**	
PBMCs	14.1 (7.3-15.6)	
PBLs ($CD14^-$ cells)	11.3 (7.7-15)	
Monocytes ($CD14^+$ cells)	51 (22-51.5)	
t2	**Median (25°-75° percentile)**	
PBMCs	13.7 (11.8-15.7)	***0.048**
PBLs ($CD14^-$ cells)	8.2 (6.7-9)	0.081
Monocytes ($CD14^+$ cells)	33.5 (15.8-36.7)	***0.018**
t4	**Median (25°-75° percentile)**	
PBMCs	8.4 (8-15)	0.05
PBLs ($CD14^-$ cells)	6.3 (4.5-8.8)	***0.031**
Monocytes ($CD14^+$ cells)	32 (27-37)	***0.019**
t12	**Median (25°-75° percentile)**	
PBMCs	8.3 (5.9-17.7)	***0.044**
PBLs ($CD14^-$ cells)	5.9 (5.9-6.5)	***0.014**
Monocytes ($CD14^+$ cells)	29.3 (25-33)	***0.035**