



Fig. S6. Identification of short-chain fatty acids (SCFAs) in *P. acnes* culture supernatant samples. In order to prove that SCFAs are secreted by the different *P. acnes* strains, antibiotic/antimycotic (AB/AM)-free keratinocyte serum-free medium (KC-SFM) culture medium was inoculated with live *P. acnes* bacterium alone using different starting concentrations ( $3 \times 10^7$  and  $9 \times 10^7$  cfu/ml). After 72 h, released SCFAs were measured in the culture supernatants by MS. While the level of acetic acid (AA) was relatively stable in the samples, the propionic acid (PA) and butyric acid (BA) levels exhibited strain- and dose dependent differences; higher amounts detected in the high-dose ( $1 \times 10^9$  cfu/ml) *P. acnes* 889 and ATCC 11828-treated cultures.