

Figure S1. Only ExoPs, but not Ext, which is a collection of random proteins, or AE from potatoes promote HaCaT cell survival. (A) To show that this effect is specific to ExoP, Ext and AE were prepared from potatoes, with the starting amount being equal to the total exosome proteins. When treated with 25 or 50 $\mu\text{g/ml}$, compared with ExoPs, which promote cellular proliferation (range, 15-20% of the untreated cells), Ext does not show any effect on cell proliferation. On the other hand, AE suppressed cell proliferation. (B) These observations were verified when cells were treated with ExoPs, Ext and AE at a broad range of concentrations (25-200 $\mu\text{g/ml}$) over two time points of 24 and 48 h. Data are shown as the mean \pm standard deviation. $^{**}P < 0.01$. ExoPs, potato exosomes; Ext, potato protein extract; AE, alcohol extract; n.s., non-significant.

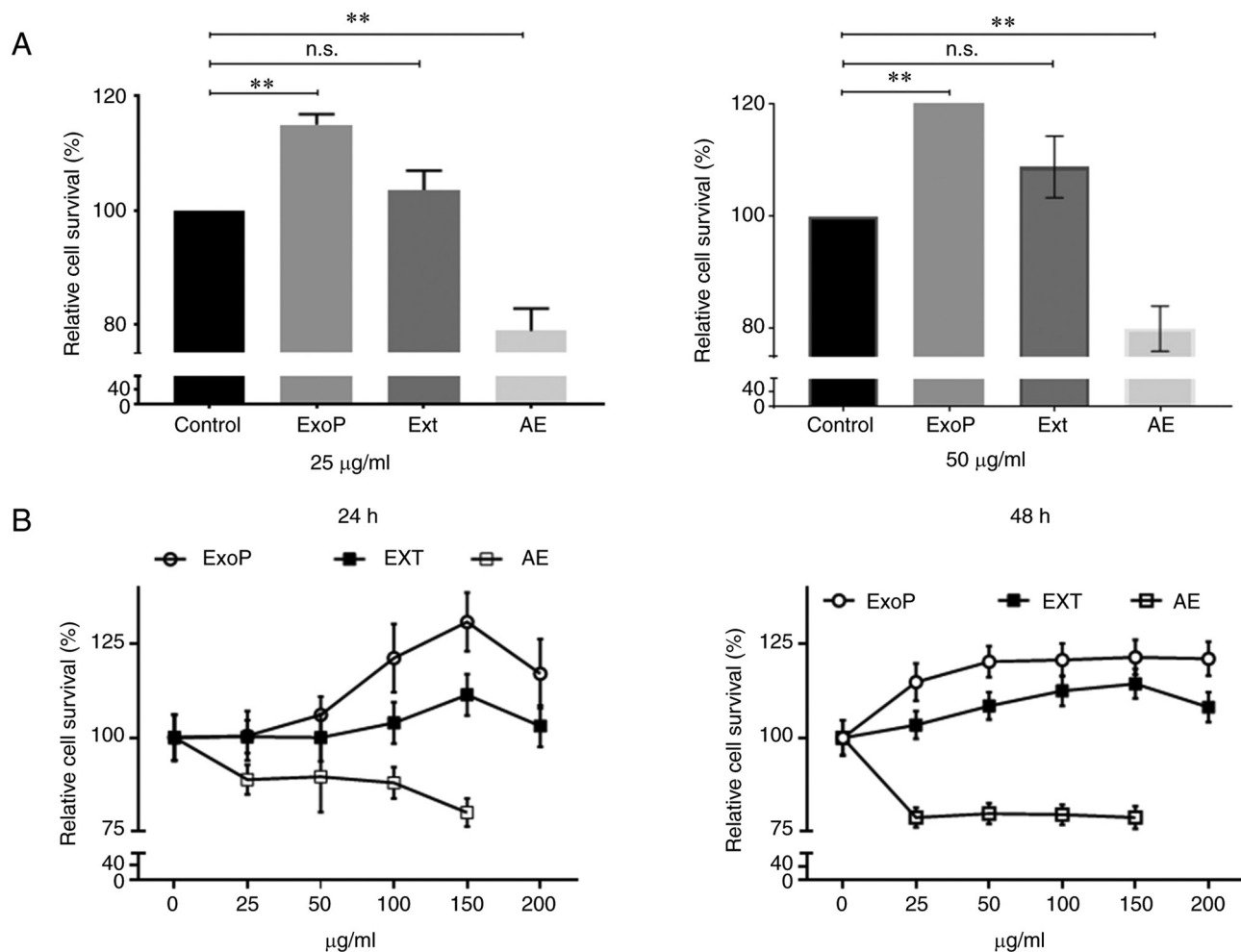


Figure S2. Ext and AE were investigated for their possible activities to minimize or ameliorate to UVB-induced photodamage. (A) Ext (50 $\mu\text{g/ml}$) or AE (equivalent to 50 $\mu\text{g/ml}$) were added prior to UVB irradiation to HaCaT cells. Ext or AE did not show any significant effect against UVB-induced photodamage, confirming that ExoPs are responsible for the cell protective activities against UVB-induced photodamage. (B) Ext or AE, when added to HaCaT cells following UVB irradiation of HaCaT cells, did not show any effect on recovery from photodamage to HaCaT cells. Data are shown as the mean \pm standard deviation. UVB, ultraviolet B; ExoPs, potato exosomes; Ext, potato protein extract; AE, alcohol extract; n.s., non-significant.

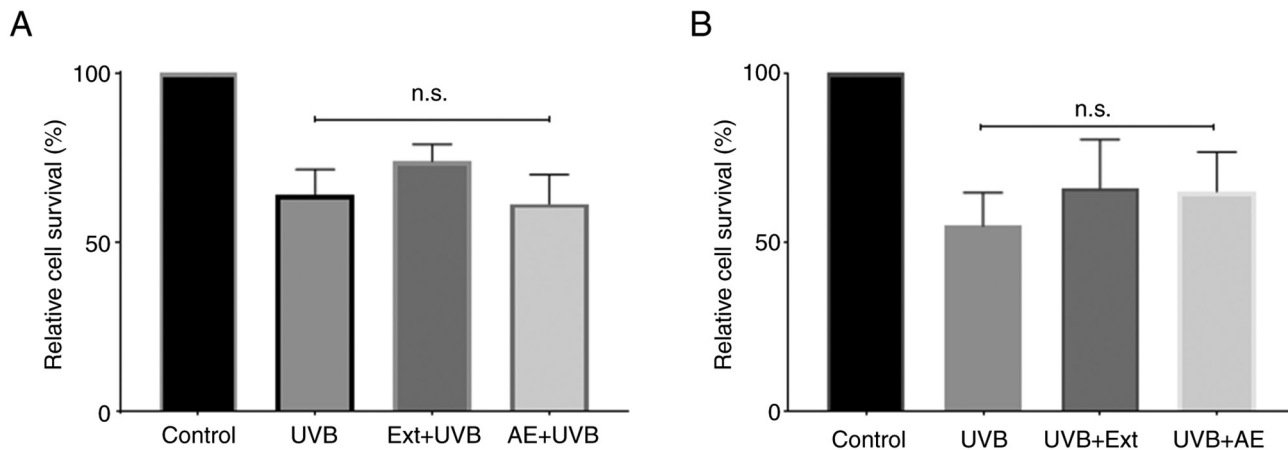


Figure S3. ExoBACs isolated from *Escherichia coli*, do not provide preventive or recovering effects on HaCaT cells against UVB-induced photodamage. ExoBACs (50 $\mu\text{g/ml}$) were used for the treatment of HaCaT cells (A) before and (B) after UVB irradiation. Culture conditions were the same as with potato exosome treatment. Data are shown as the mean \pm standard deviation. UVB, ultraviolet B; ExoBAC, bacterial exosome.

