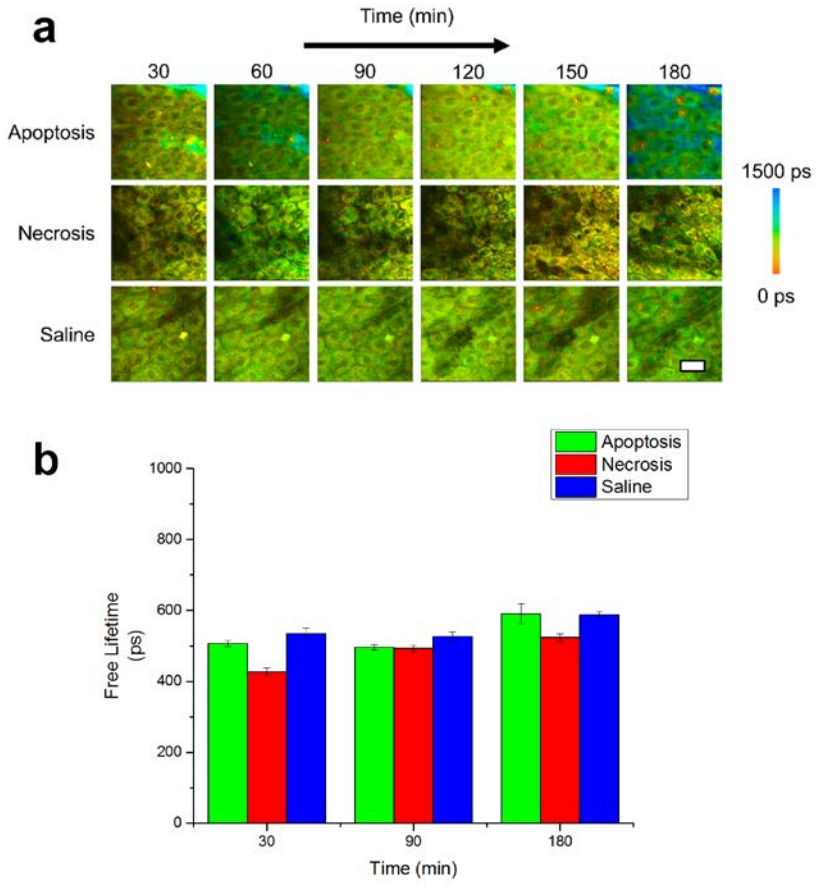

Figure S1. NADH free lifetime dynamics of *in vivo* murine keratinocytes. (a) Images of the free lifetime (τ_1) tracked from 30-180 minutes following treatment for the induction of apoptosis or necrosis in epidermal keratinocytes. Saline-treated mice were used as a control. (b) Statistical analysis of free lifetime in cells across entire experimental population. At each time point, N = 34 cells analyzed for the apoptosis group, N = 14 cells analyzed for the saline group and N = 23 cells analyzed for the necrosis group. Scale bar is 25 μm. All error bars represent SEM.

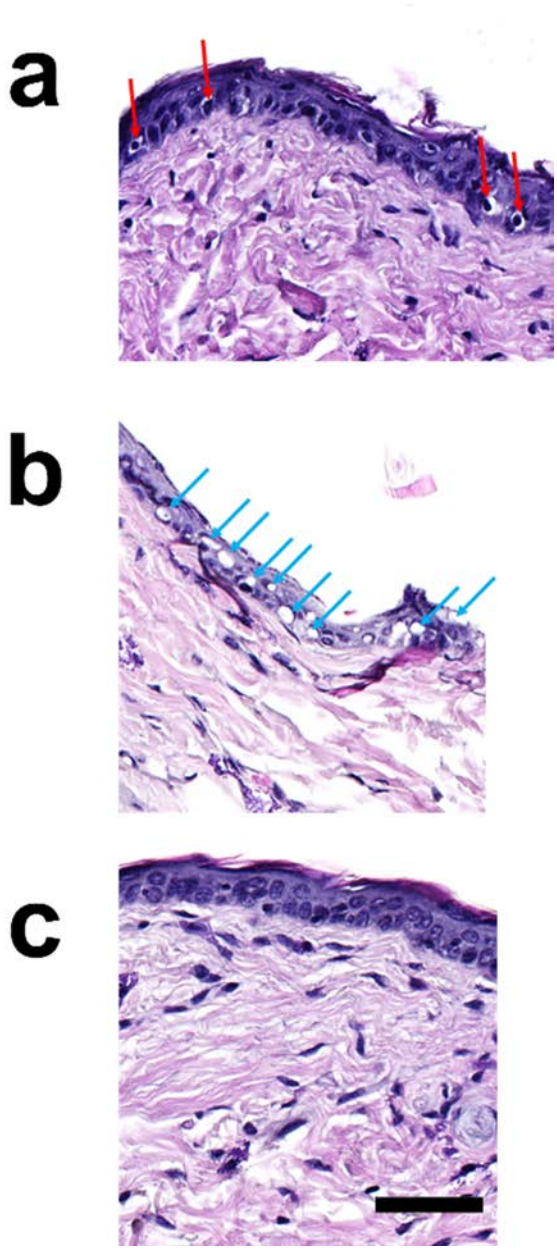

Figure S2. Histological confirmation of cell death induction in treated animals. (a) Apoptosis induction may be identified through the observation of condensed, picnotic nuclei (red arrows). (b) Necrosis induction is associated with the complete loss of nuclei in the keratinocytes (blue arrows). (c) Saline-treated epidermal keratinocytes show normal appearance and morphology. All samples were stained using H&E and imaged under identical conditions. Scale bar is 25 μm.

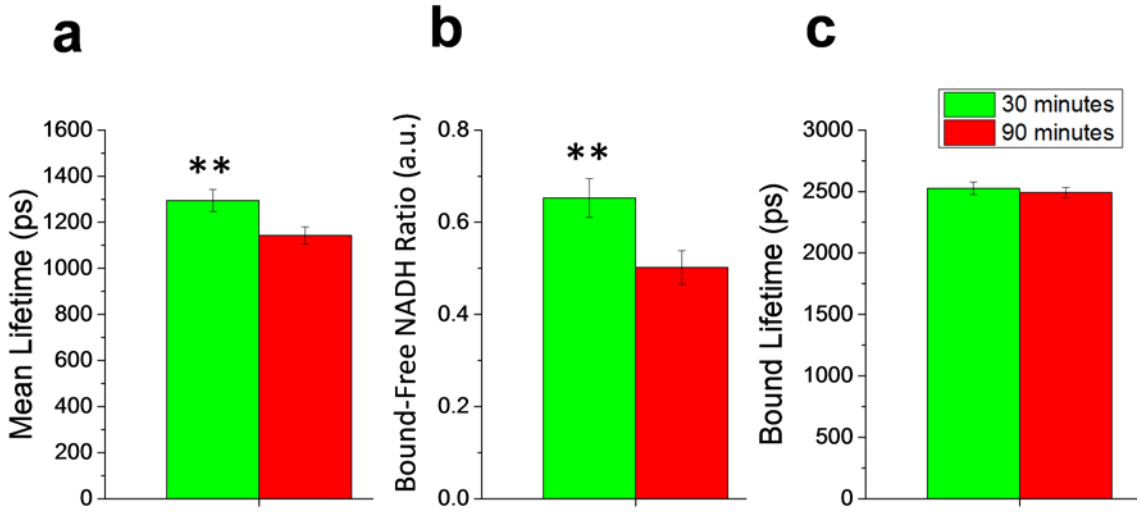

Figure S3. Comparison of metabolic dynamics of apoptosis-treated group from Figures 1-3 at 30 and 90 minutes. Comparison between the (a) mean lifetime, (b) bound-to-free NADH ratio, and (c) bound lifetime in cells across the experimental population shows a significant decrease of both the mean lifetime and bound-to-free NADH ratio from 30 to 90 minutes. At each time point, N = 34 cells analyzed for the apoptosis group. Statistical testing was performed using the Student's t-test. ** $p < 0.01$ compared to 90 minutes. All error bars represent SEM.