Supporting Information

Interplay of ubiquitin like modifiers following arsenic trioxide treatment

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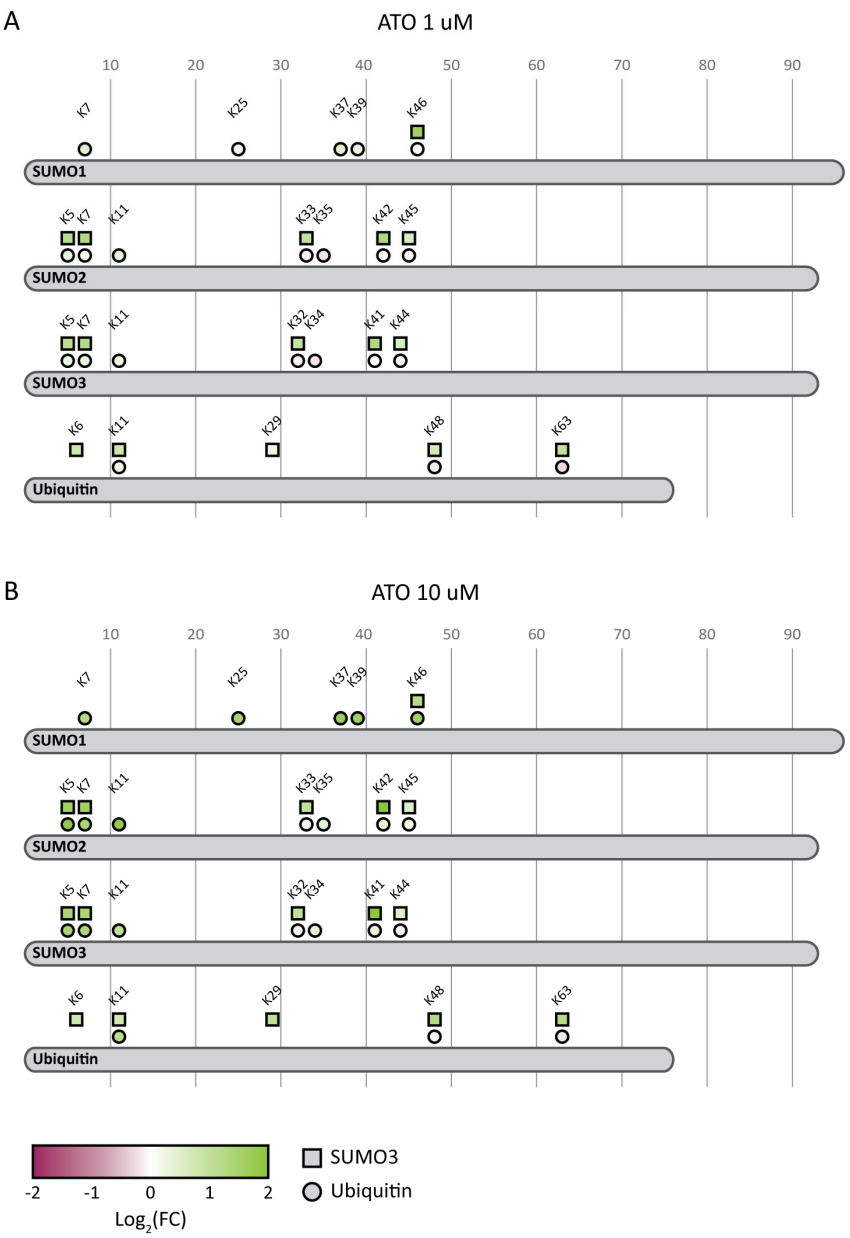
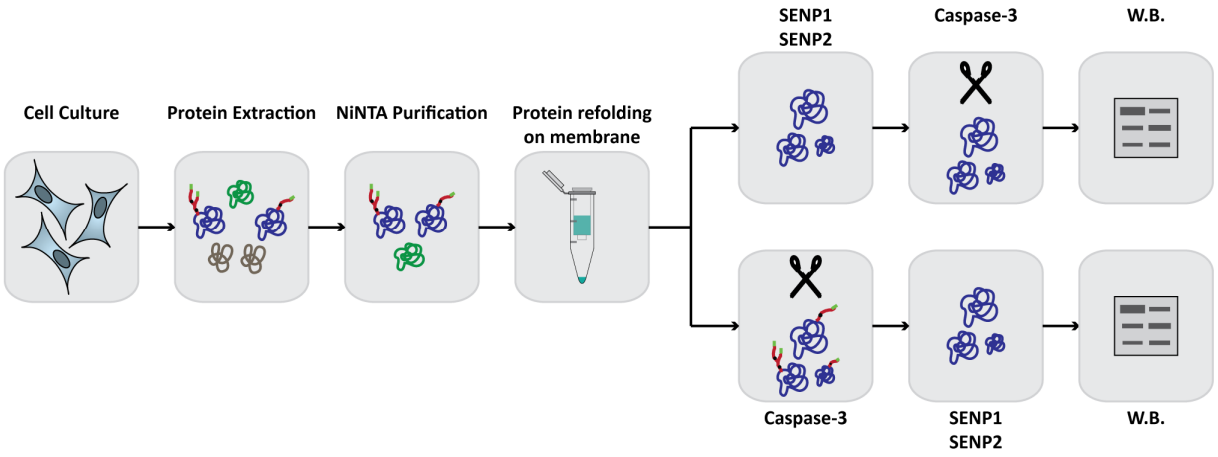


Supplementary Figure S1. Quantitative mapping of the SUMOylation and ubiquitylation site abundances on SUMO and ubiquitin in response to ATO. SUMOylation sites are depicted as squares and ubiquitylation sites as circles. Changes in SUMOylation and ubiquitylation site abundances in response to (a) 1μM or (b) 10 μM ATO are depicted by the shading color of the square or circles, respectively. Sites that are increased in abundance in response to ATO are shaded in green.



Supplementary Figure S2. Workflow for the *in vitro* SENP and caspase assay used to determine the effects of protein SUMOylation on PARP1 mediated caspase cleavage. Proteins are extracted from cells in a denaturing buffer and purified on a NiNTA column to recover the SUMO modified proteins. The proteins are eluted from the resin and applied on a molecular weight cutoff membrane and buffer exchanged into a native buffer to refold the SUMOylated proteins. A portion of the sample is deSUMOylated with a combination of SENP1 and SENP2 prior to *in vitro* caspase cleavage (top workflow). The other portion of the sample is cleaved *in vitro* with the caspase and then deSUMOylated with SENP1 and SENP2 (bottom workflow). The resulting samples are analyzed by W.B. for both PARP1 and cleaved PARP1 to analyze the degree of caspase mediated PARP1 cleavage.

Supplementary Figure S3: Image of the entire membrane used for western blots shown in the manuscript. Reference to specific Figures of the manuscript are indicated beside each panel.

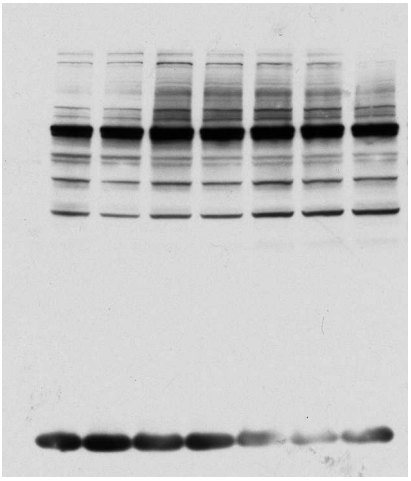


Figure 1A: Entire blot for PML

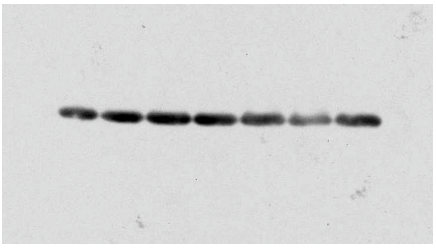


Figure 1A: Entire blot for histone H3

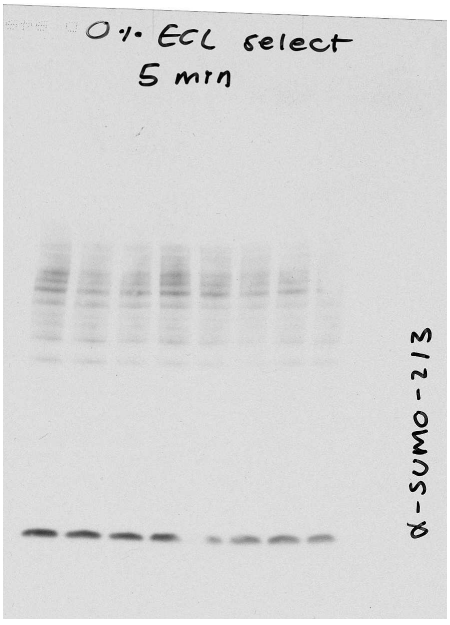


Figure 1B: Entire blot for SUMO2/3. Bands at ~15kDa correspond to free SUMO2/3

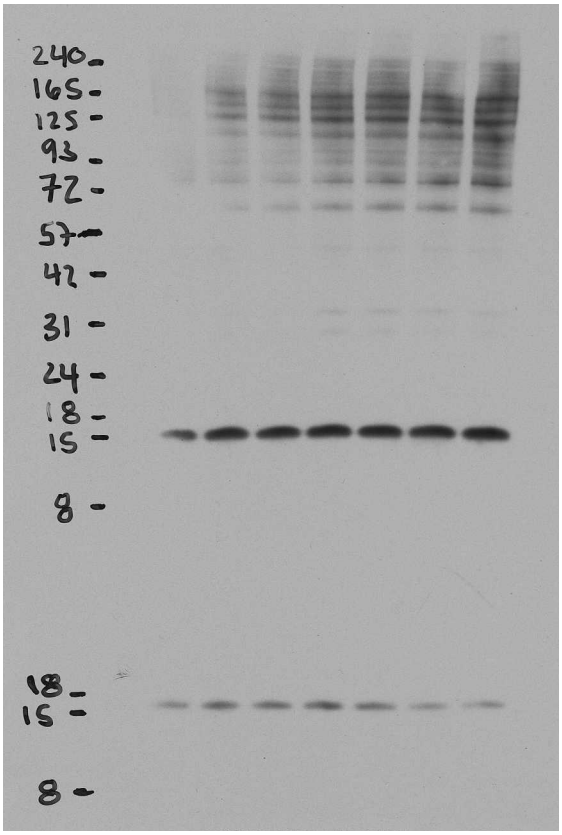


Figure 1C: Entire blot for SUMO2/3 (top, Bands at ~15kDa correspond to free SUMO2/3) and Histone H3 (bottom).

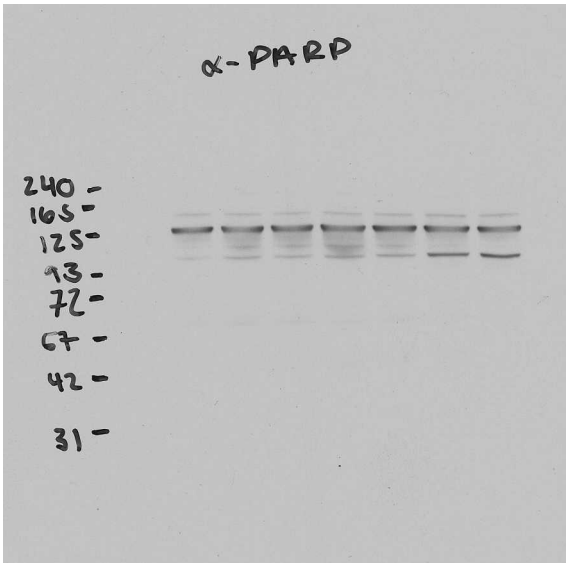


Figure 5A: Entire blot PARP1

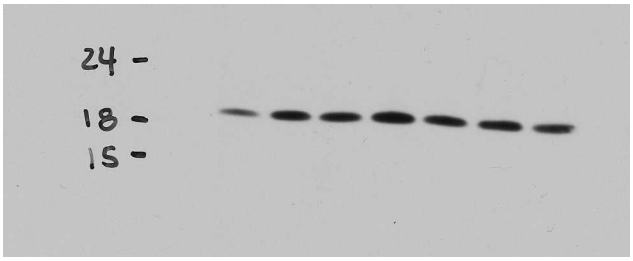


Figure 5A: Blot for histone H3 (PARP)

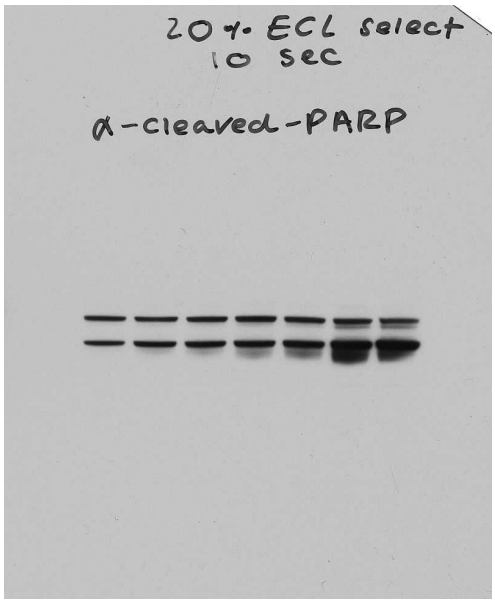


Figure 5A: Blot for cleaved PARP1

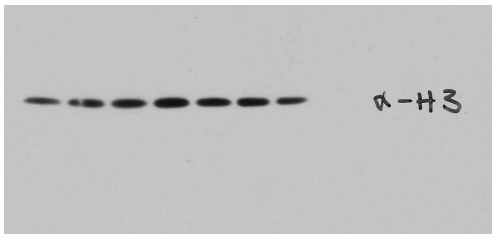


Figure 5A: Blot for Histone H3(cleaved PARP1)

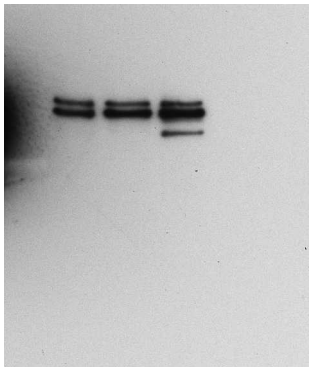


Figure 5B: Blot for PARP1

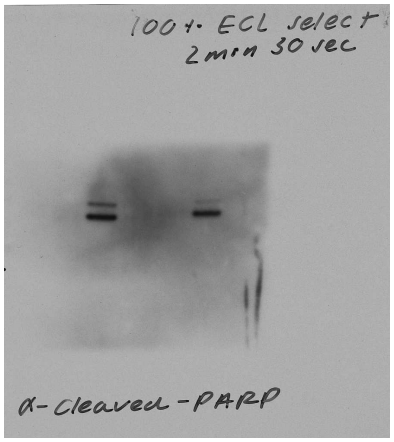


Figure 5B: Blot for cleaved PARP1. Bands in left well are not relevant.

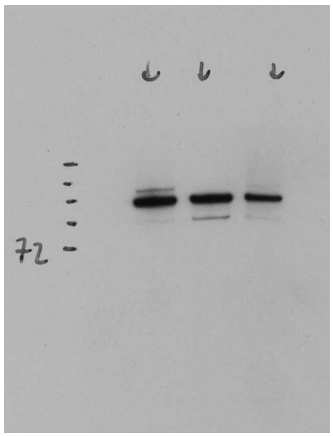


Figure 5C: Blot for PARP1.

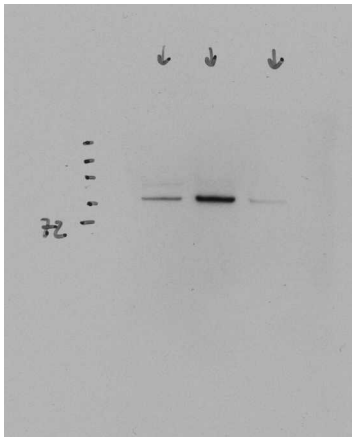


Figure 5C: Blot for cleaved PARP1.