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Results of the present project:

Fig.1 Both As+3 and MMA+3, but not As+5, DMA+3, MMA+5, DMA+5, induce apoptosis in embryonic fibroblasts.

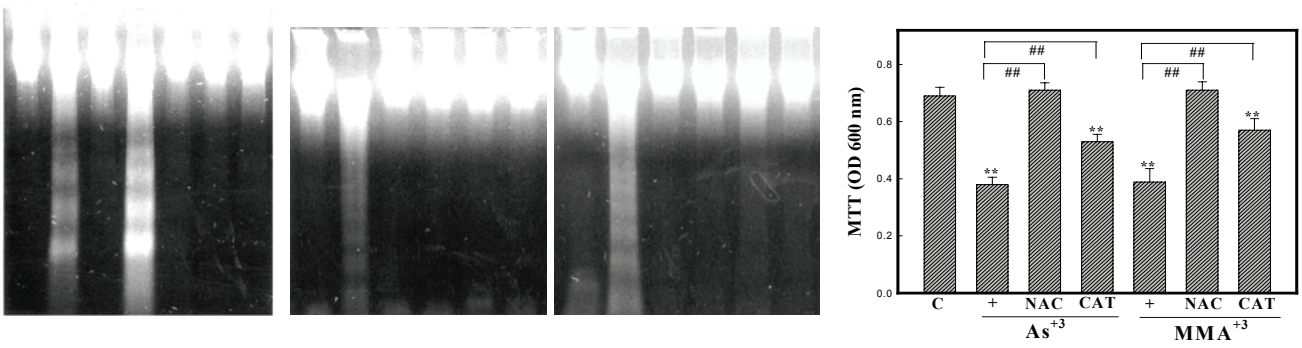


Fig. 2 Both As+3 and MMA+3, but not As+5, DMA+3, MMA+5, DMA+5, induce HO-1 protein expression and HSP90 protein procession with reducing telomerase activity in embryonic fibroblasts.

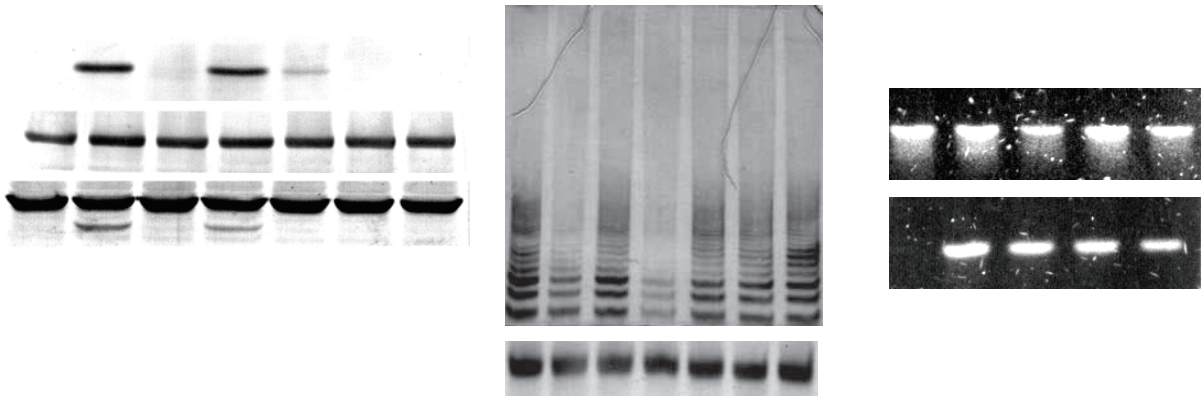


Fig. 3. NAC and catalase prevention of As+3 and MMA+3-induced HO-1 and HSP90 protein procession with attenuation of telomerase reduction.

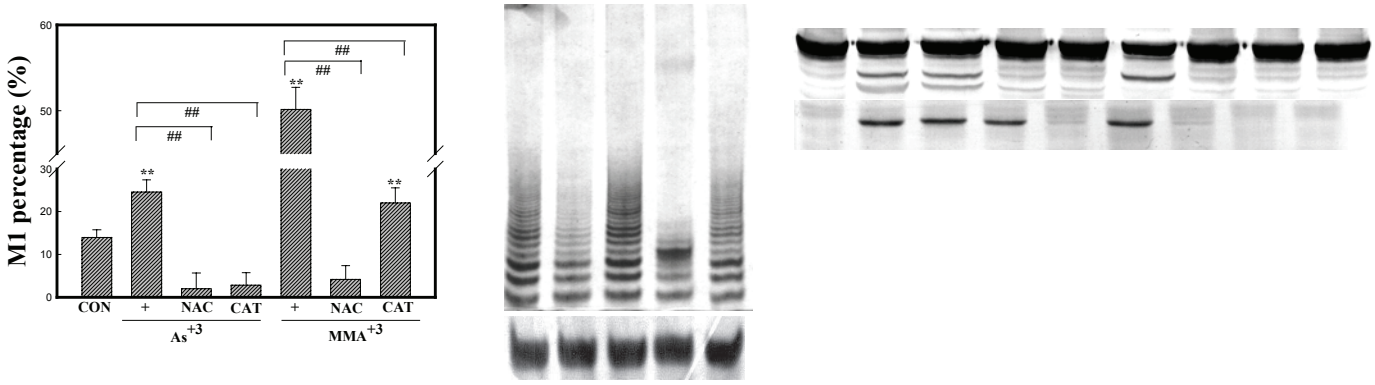


Fig. 4 NAC prevention of As+3 and MMA+3-induced mitochondrial dysfunction in embryonic fibroblast.

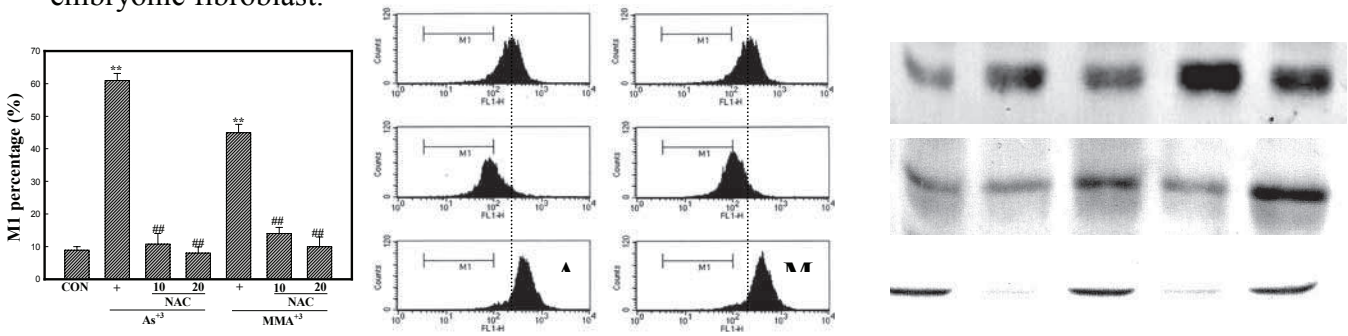


Fig. 5 DPI prevention of As+3 and MMA+3-induced cytotoxicity via blocking telomerse activation.

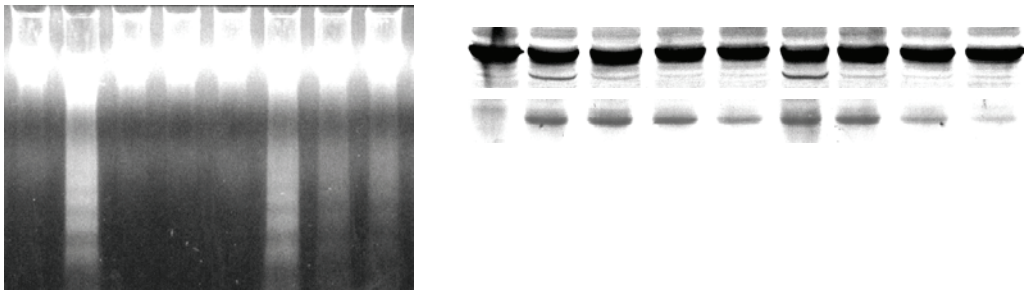


Fig. 6 Inhibition of HSP90 activity potentiates As+3 and MMA+3-inhibited telomerase activity by TRAP assay.

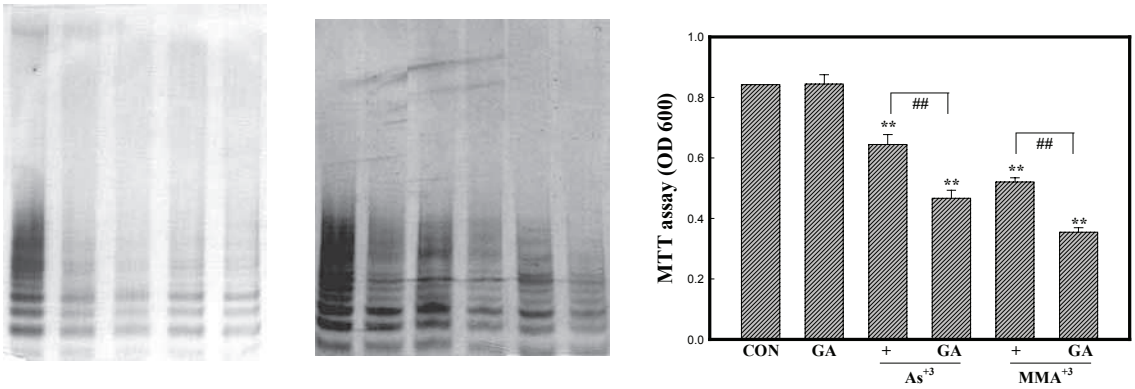
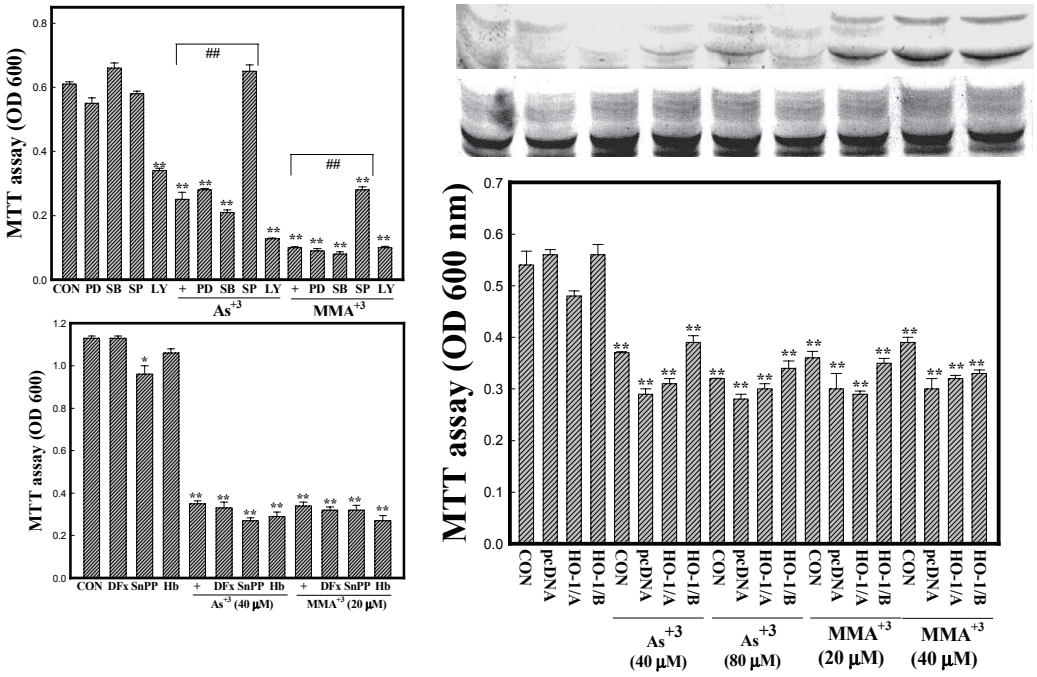


Fig. 7. Activation of JNKs involves in As+3 and MMA+3-induced cell death in embryonic fibroblasts.



In conclusion

We provide first evidences to indicated that different biological effects of arsenics in embryonic fibroblasts. Induction of HO-1 gene expression at both mRNA and protein level and HSP90 protein procession was identified in As+3 and MMA-3-treated cells. Data of pharmacological study showed that activation of JNKs via inducing protein phosphorylation and HSP90 but not HO-1 protein might be involved in the action of As+3 and MMA+3. In conclusion, As+3 and MMA+3 are active in inducing cell death via blocking telomerase activity, and expression of HO-1 and HSP90 protein procession is detected.