

*Supporting Information*

## Overcoming multidrug resistance through co-delivery of ROS-generating Nano-machinery in cancer therapeutics†

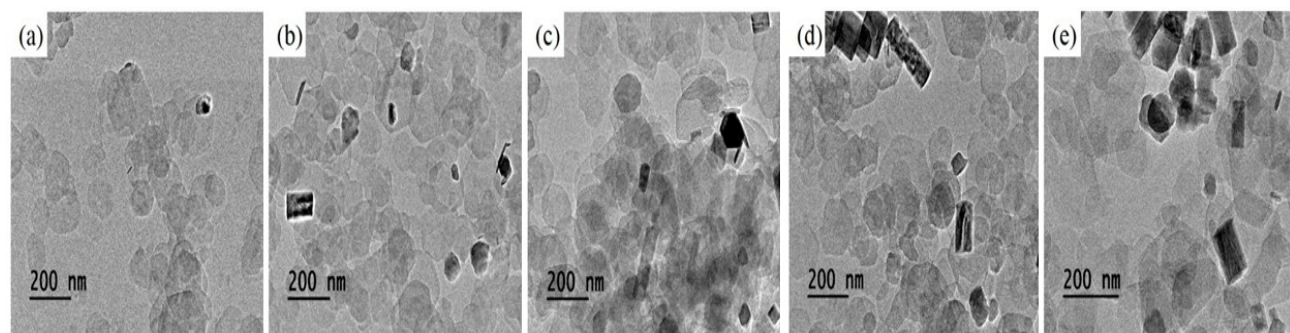
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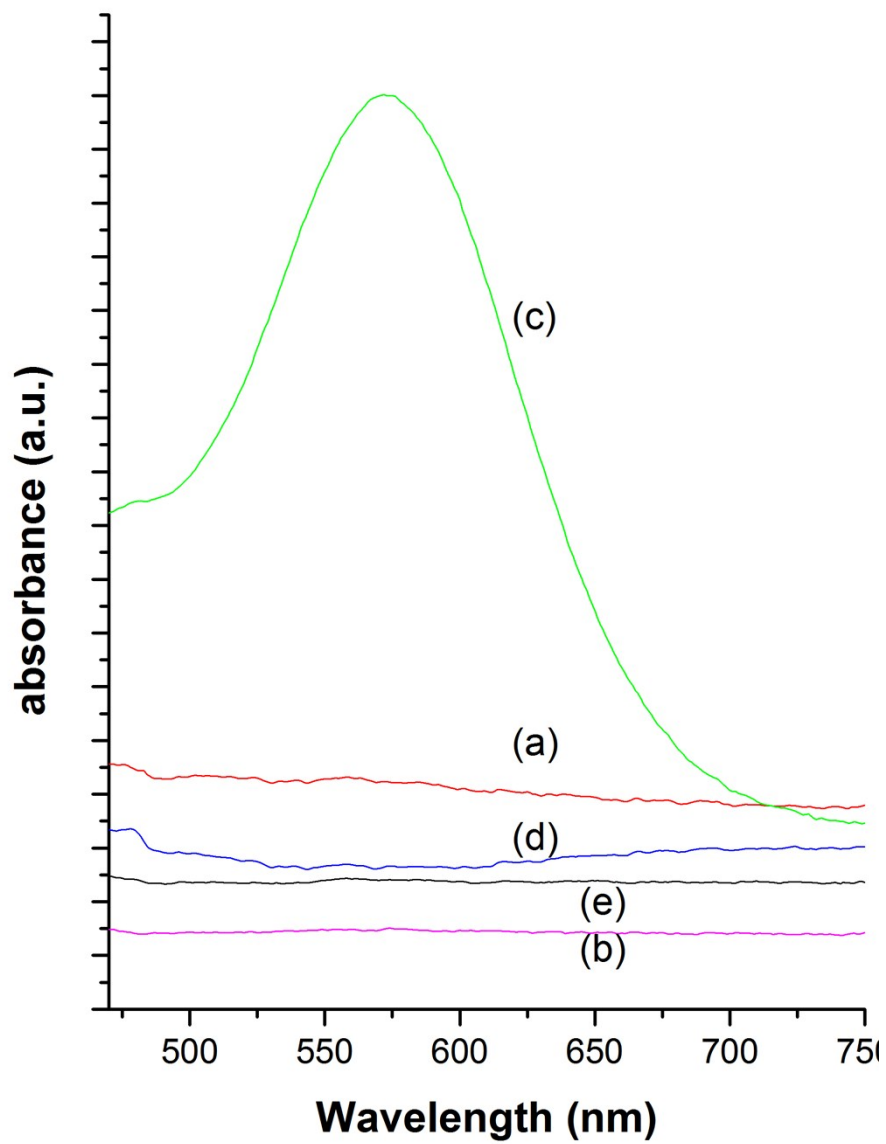
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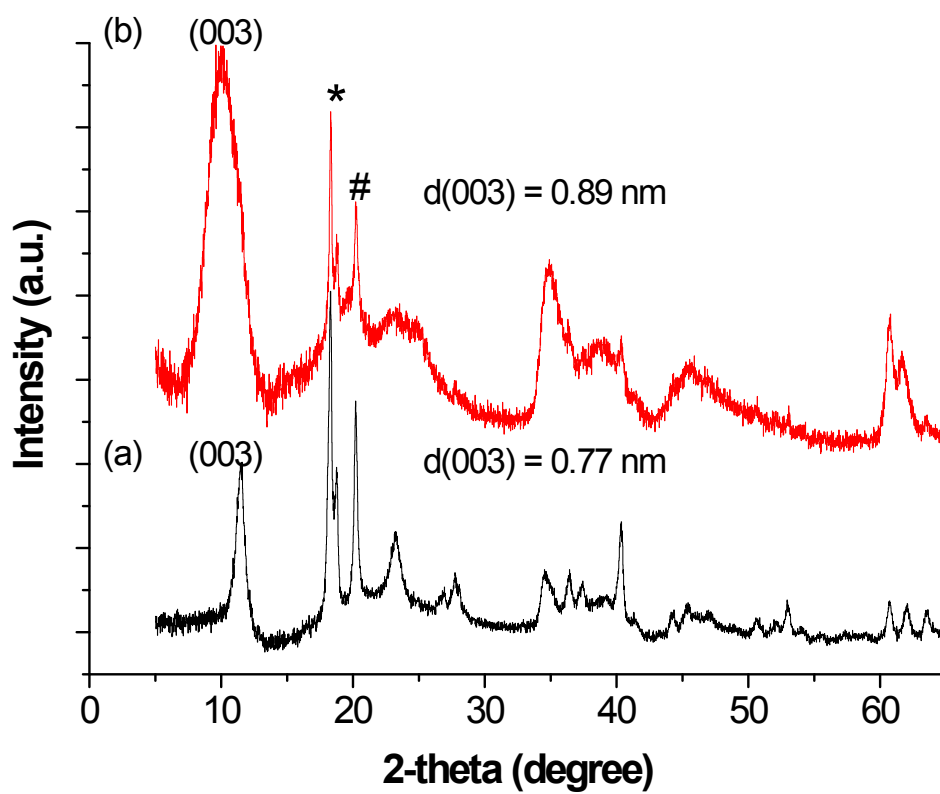
§These authors contributed equally.



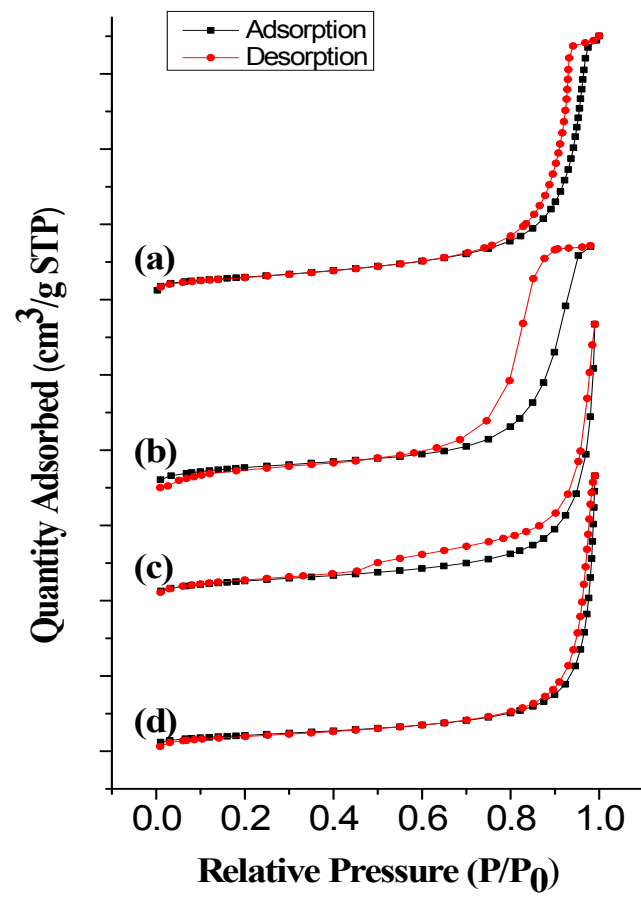
**Fig. S1** Transmission electron microscopic images of various LDH and its successive nanoconjugates, (a) LDH, (b) LDH-NH<sub>2</sub>, (c) AA-LDH, (d) Cu-LDH, and (e) Dox-LDH.



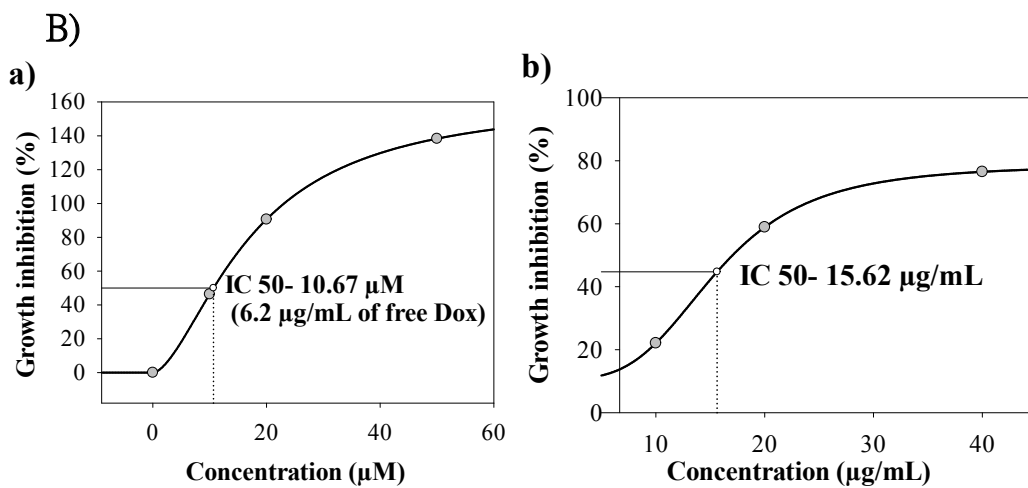
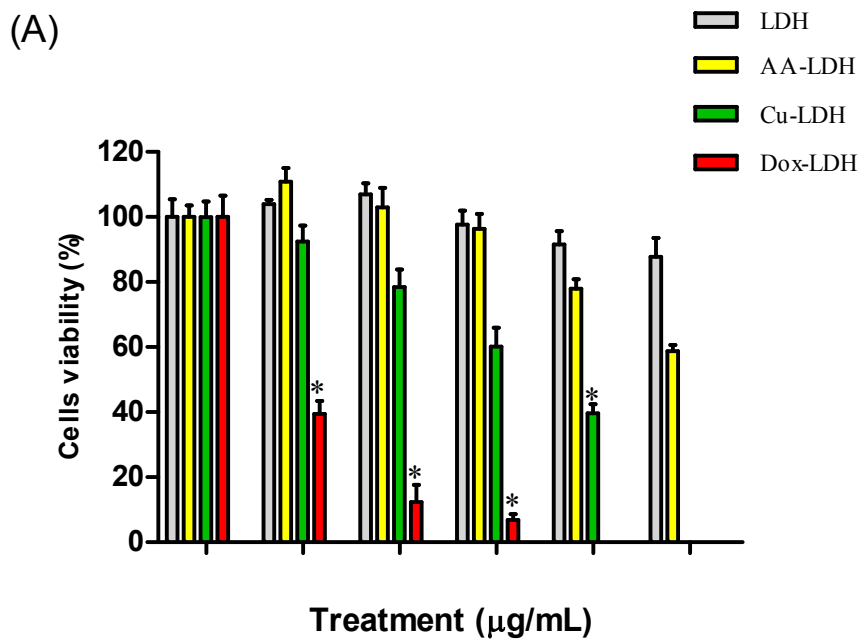
**Fig. S2** Ninhydrin assay (a) Ninhydrin, (b) LDH, (c) LDH-NH<sub>2</sub>, (d) Cu-LDH and (e) Dox-LDH.



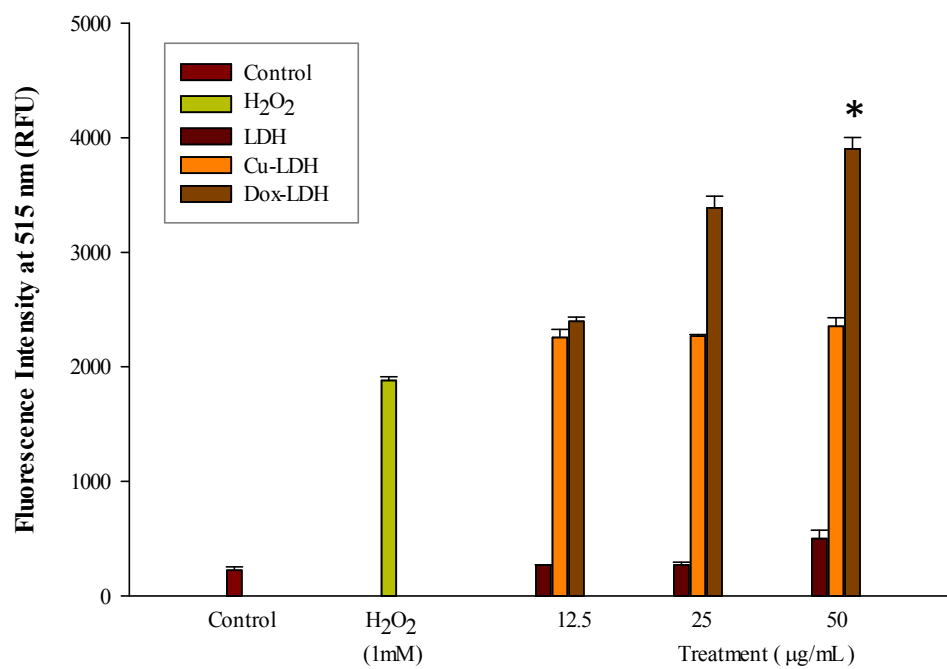
**Fig. S3** PXRD patterns of (a) LDH and (b) AA-LDH. \* and # represents brucite and gibbsite formation, respectively.



**Fig. S4** Nitrogen adsorption–desorption isotherm patterns of various LDH samples, (a) LDH, (b) LDH-NH<sub>2</sub>, (c) AA-LDH and (d) Cu-LDH.



**Fig. S5** (A) SRB assay of LDH, AA-LDH, Cu-LDH and Dox-LDH in HT-29 cells ( $*p < 0.001$ , as compared with control), (B) IC<sub>50</sub> plots of (a) free doxorubicin and (b) Dox-LDH treated in HT-29 cells.



**Fig. S6** Determination of ROS generation using DCFH-DA in control, hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) (1 mM), Pristine LDH, Cu-LDH and Dox-LDH in HT-29 cell line (\**p* < 0.001, as compared with control).