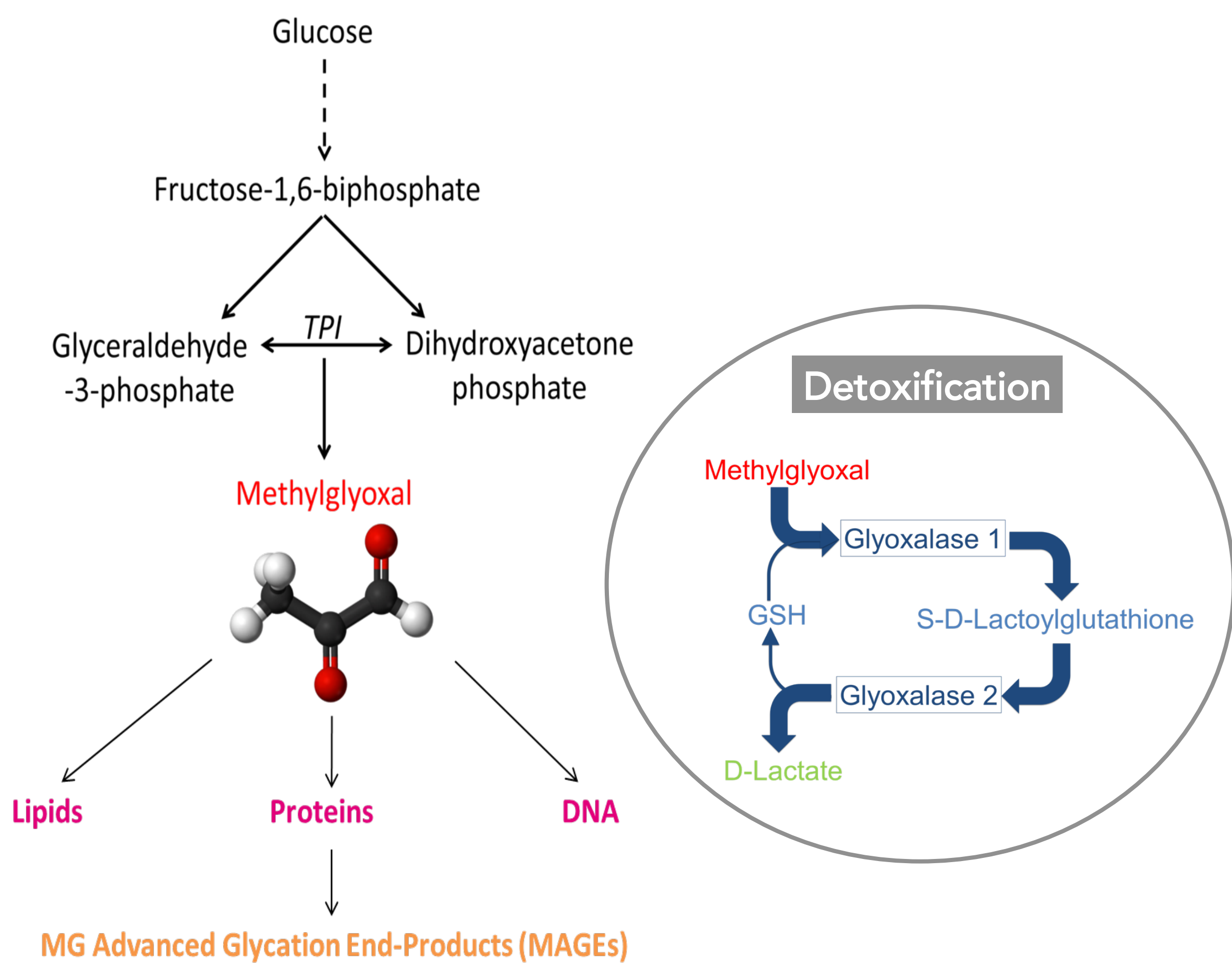
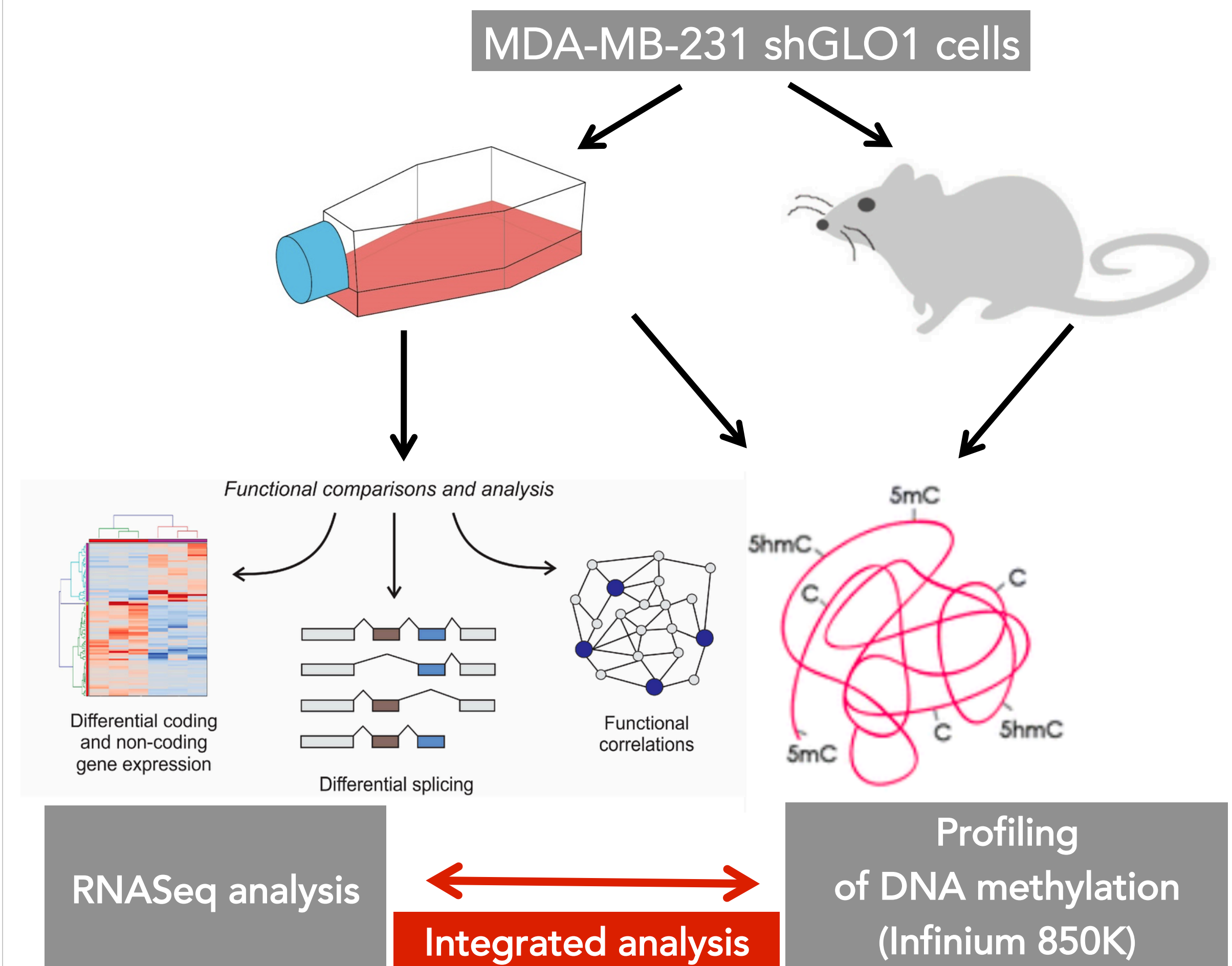


A. Bellahcène¹, G. Dube², M. Bizet², R. Deplus², Y. Boumahd¹, M-J. Nokin¹, J. Bellier¹, T. Wissocq¹, O. Peulen¹, F. Fuks², A. Tiamiou¹
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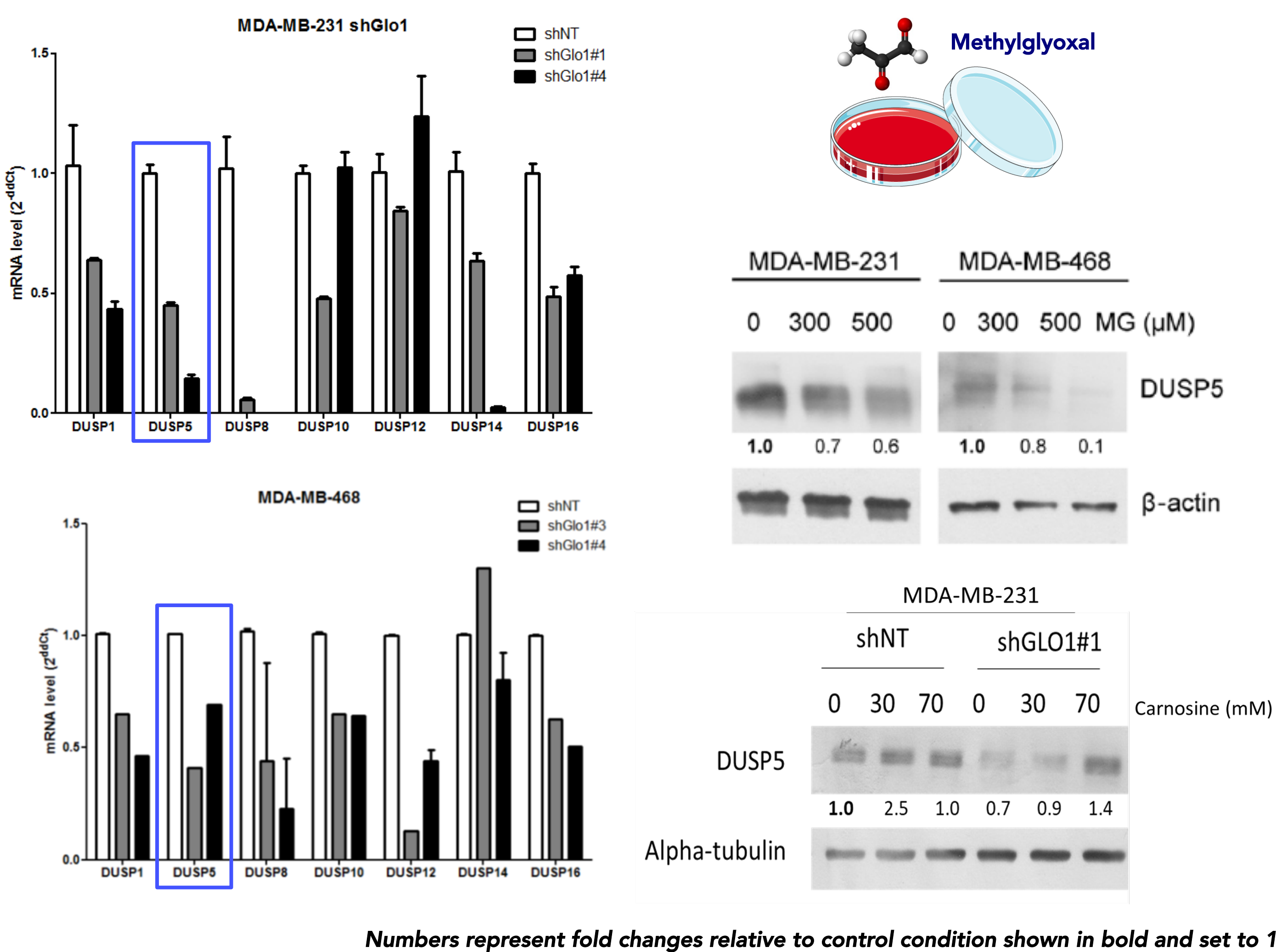
DICARBONYL STRESS: A BALANCE BETWEEN METHYLGLYOXAL PRODUCTION AND DETOXIFICATION



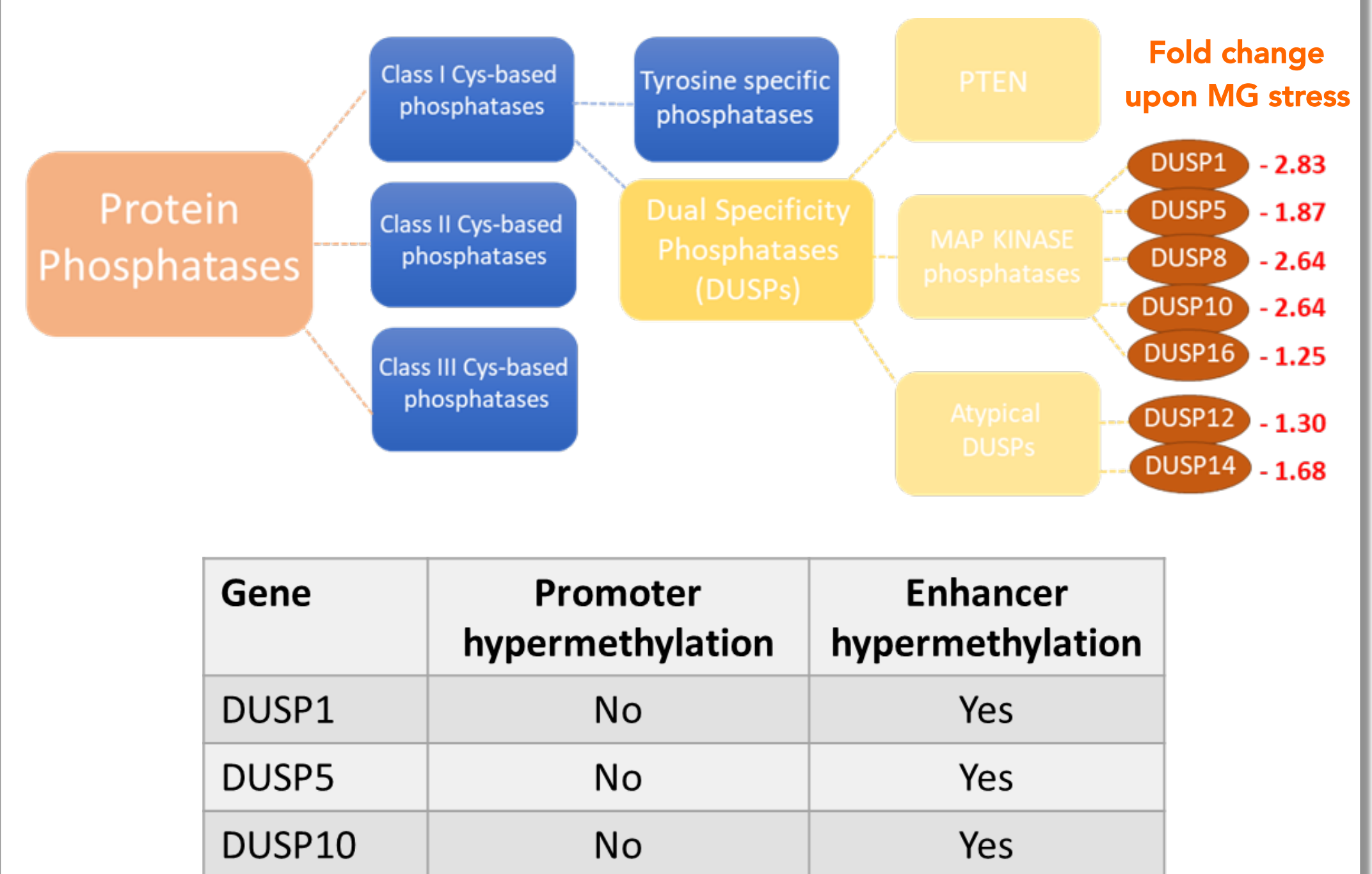
EXPERIMENTAL STRATEGY



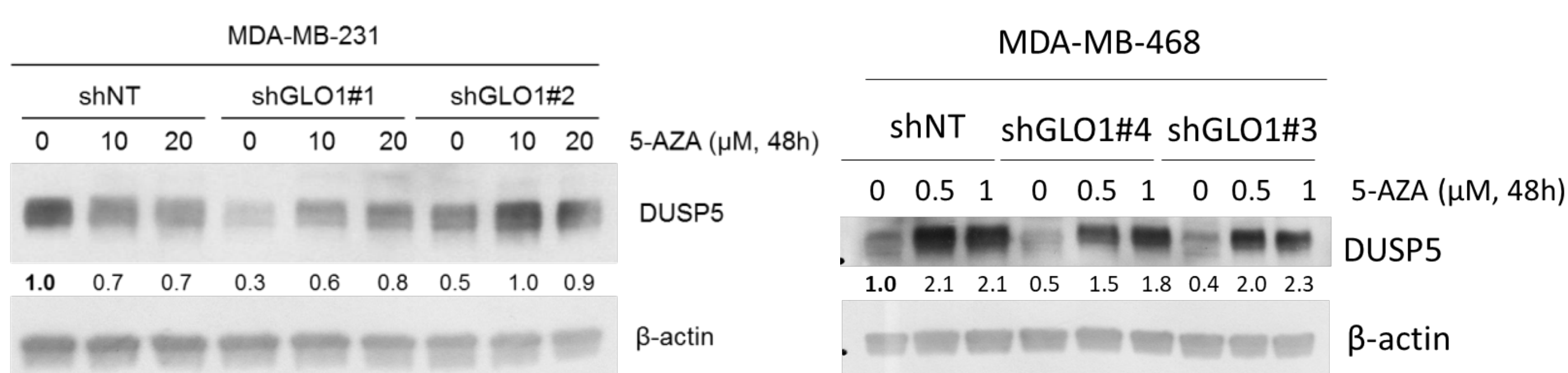
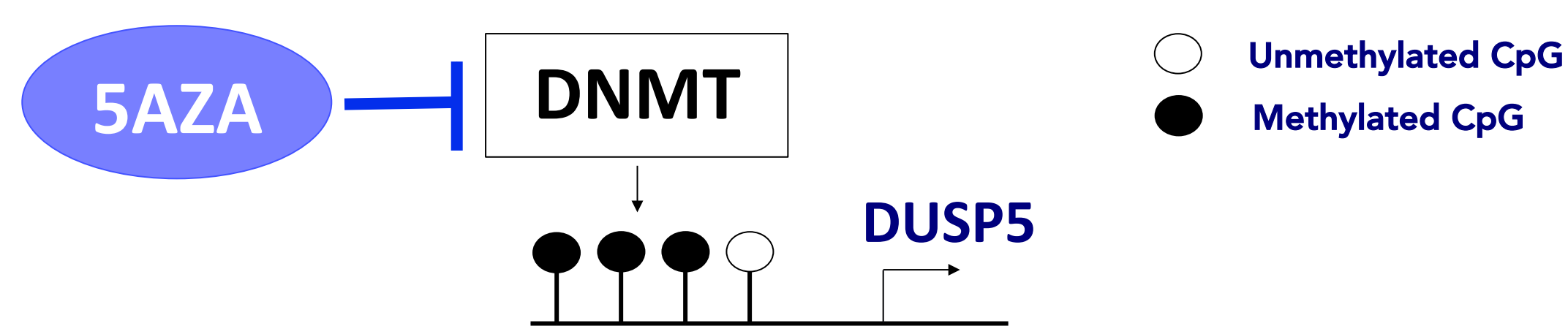
DUSP5 is decreased in GLO1-depleted breast cancer cells



DUSP downregulation is associated with enhancer hypermethylation



DUSP5 is epigenetically regulated under MG stress in breast cancer cell lines



CONCLUSIONS / PERSPECTIVES

1. Dicarbonyl stress induces a sustained **activation of MEK/ERK signaling** associated with a down regulation of **DUSPs** expression in breast cancer cells (Nokin et al, *Breast Cancer Research*, 2019).
2. Dicarbonyl stress induces a **decrease of DUSP5** through epigenetic regulation.
3. **Carnosine**, a potent MG scavenger, is able to re-induce DUSP5 protein expression. Ongoing pre-clinical studies will help demonstrating the potential use of **carnosine as a new regulator of MAPK signaling** in cancer.