
OPEN PEER REVIEW REPORT 1

Open peer review 1: Shen Lin, Temple University Health System, Shriners, USA.

Comments to the authors:

This study investigated the changes in DNA repair gene MGMT during development of embryos, comparing wild type with ATRA-induced SBA in rat embryos. Loss of MGMT is associated with Neural Tube Defects. The authors found that MGMT is reduced in both wild type and ATRA animals in E11 to E14. The authors suggest that the downregulation of MGMT in both models is independent of ATRA. Further decrease of MGMT in SBA treatment rats suggests an association with progression of neural tube defects rather than initiation. However there is no significant statistical difference. Furthermore, there were no significant differences in MGMT promoter methylation between SBA and control embryos. Therefore DNA methylation alone cannot explain the decrease in MGMT.

The paper is fine and well written. The authors could consider investigating other post-translational modifications that could affect MGMT expression in the developing embryo, such as acetylation and glutamylation.