Stage III and IV colorectal cancer (CRC) are associated with poor prognosis and survival compared to earlier disease stages. Long non-coding RNAs (lncRNAs) have a role in regulating epithelial-to-mesenchymal transition (EMT) and tumor progression. lncRNAs have several mechanisms of action, one being a decoy for microRNA.

ZFAS1 is a lncRNA that is upregulated in CRC and has been shown to interact with the miR-200 family. The miR-200 family represses EMT, and is associated with more favorable prognosis.

We hypothesized that ZFAS1 knockdown would lead to an increase in the expression of the miR-200 family. The miR-200 family represses EMT, and is associated with more favorable prognosis.

Additionally, we studied if transfection with miR-200 family mimics would lead to decreased expression of ZFAS1.

Conclusions

As hypothesized, knockdown of ZFAS1 leads to an increase in the expression of the miR-200 family in both cell lines. Similarly, transfection with miR-200 family mimics leads to decreased expression of ZFAS1, as hypothesized. These findings suggest that ZFAS1 has a direct relationship with the miR-200 family. ZFAS1 may facilitate tumor progression by inhibiting expression of the miRNA-200 family, therefore blocking the inhibition of EMT. ZFAS1 must be further investigated as a potential target in the treatment of CRC.

Acknowledgements

Research supported by a grant from the National Cancer Institute Grant R25-CA134283 and the John Williamson and Barbara Thruston Atwood Price Trust.