SF3B1 mutation is found in approximately 20% of Uveal Melanoma (UM), an aggressive ocular cancer with a higher metastasis rate than cancers from other vital organs in the human body. A recurrent hotspot mutation at amino acid residue 625 has been identified to cause aberrant splicing during pre-mRNA processing, which ultimately results in downregulation of wild type protein production. The goal of this study is to identify key target genes in cancer-related pathways that are affected by SF3B1 to unveil the mechanism in which SF3B1 mutation drives metastasis in UM. Any possible discrepancies between mutant and wildtype on both RNA and protein levels will be examined. Site-directed mutagenesis will be performed at codon 625, and transcriptome sequencing will then be performed to detect alternative gene expression in cells expressing mutant SF3B1 proteins. Finally, amino acid sequences in all cellular proteins will be analyzed by mass spectrometry to identify abnormal excisions and incisions. SF3B1 mutant cells are expected to display lowered wild type transcript and protein levels, in addition to expression of aberrant transcripts and proteins, in several genes previously known to be affected by mutant sf3b1 activity. Data generated in this study serves as a valuable starting point for developing both novel and specific UM treatments targeting SF3B1 hotspot mutants. Additionally, the normal function of genes affected by mutant sf3b1 activity could be further examined to understand their precise roles in carcinogenesis.

Themes:

Check (highlight) the most applicable theme according to the abstract.

| Innovation and Technology | Health and Wellness | Culture and Society | Sustainability and Conservation |

Comments:

This is a well-written abstract. My only suggestion is for you to avoid the use of jargon as your abstract should speak to a generalist audience (nonspecialist in your field). If you have to use jargon, make sure that it is defined.

Commented [Office34]: Define this term. Remember that you are presenting this abstract to a generalist audience.