Example Abstract Format:

CROSS-SPECIES EXOM SEQUENCING FOR SNP DISCOVERY IN GROWTH RELATED GENES IN DUSKY KOB (*ARGYROSOMUS JAPONICUS)*

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Marine resources such as dusky kob, (*Argyrosomus japonicus*) are particularly vulnerable to overfishing as this finfish species has been targeted by commercial, recreational and subsistence fisheries, which has led to the steady decline in the natural populations. A shift towards aquaculture as a sustainable alternative supply to the market has been initiated. It is important to understand the various genetic determinants influencing complex traits, particularly growth rate, as this will facilitate improvement in production through selective breeding *via* the application of marker assisted selection. Transcriptome sequencing could create an ascertainment bias, due to differential gene expression. On the contrary, exome sequencing might be a flexible gene-targeted sequencing method. This study thus aimed to demonstrate the effectiveness of a cross-species exon capture procedure, for genome-wide, gene-targeted marker discovery in species where no genome references are available. This method successfully sequenced and mapped exon sequences across putative chromosomes of *A. japonicas,* using the coding gene sequences from the model organism, *Danio rerio*. Exon capture and high throughput sequencing identified thousands of SNPs, including hundreds of SNPs in genes associated with growth. Due to the high level of transferability displayed in this study this method can be applied to aid in future genomics research and the acceleration of molecular breeding programmes for dusky kob.

Keywords: Aquaculture; Candidate Genes; Marker Assisted Selection; Molecular Breeding