

MASTS Small Grants Scheme - Layman's summary

The flight costs were paid with funds awarded from a MASTS Small Grant for the participation in the 12th Congress of the International Society of Developmental and Comparative Immunology (ISDCI), July 9 to July 13, 2012 Fukuoka, Japan. The congress covered areas of immunology across different species and my personal attendance involved the presentation of a poster. The main topic of my PhD research project is to investigate putative fish dendritic cells with Rainbow trout as a research model. Dendritic cells are bone marrow derived leukocytes that recognize infectious agents which may lead to the induction of the adaptive immune system and thus act as a bridge between innate and adaptive immunity of vertebrates. The most extensive research concerning dendritic cells has been carried out for human and mouse dendritic cells and they have been described in several animal species such as horse, cat, bovine, sheep, pig, non-human primates, dog and chicken. To date, it is not clear whether dendritic cells exist in non-mammalian vertebrates and even though emerging evidence suggests they do, their exact function still needs to be further evaluated. During my project, already known human DNA sequences that are associated with particular genes (so-called genetic cell markers), have been used to identify similar genes present in fish in order to investigate the expression profiles of the markers in Rainbow trout. My participation in the congress gave me a good opportunity to identify new dendritic cell markers and also gave me a chance to gain insight in the most recent research regarding the involvement of immune cells during viral infections. Agents that activate dendritic cells and that can be used as molecular adjuvants are essential components for vaccine effectiveness and for disease control in aquaculture. A number of talks given during the congress addressed topics such as the expression of immune-genes during viral infection in both Atlantic salmon and Rainbow trout. That information will be useful for my upcoming planned experiments in which I will induce putative fish dendritic cells by the use of synthetic compounds that mimic viral RNA. Overall, the congress has broadened my knowledge within immunology and given me important insights of new methods and results related to my research area as well as giving me further opportunity to meet people for future connections.