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Abstract

"Biodiversity and Infectious Disease Risk: Genetic Variability of Myxobolus cerebralis"

Abstract:

Myxobolus cerebralis is the parasite known to cause Whirling disease and is native to Eurasia. The parasite deforms the skeletal system of salmonid fish causing the fish to chase it's tail and go around in circles, hence the name Whirling disease. *Myxobolus cerebralis* became a focal point in studies because of its adverse affects on recreational fishing, the trout farming industry and unique salmonid populations such as Yellowstone cutthroat trout. One study reported that there is only one strain of the parasite in the US, suggesting that it was probably introduced only once; however a more recent study comparing the 18S sequence and ITS-1 sequence of *Myxobolus cerebralis* from eight states found that the parasite from West Virginia differed genetically from the other areas. There have not been studies done examining both 18S and ITS-1 on a single isolate from WV. I have obtained spores from the fish hatchery examined in the first study. Using these spores, I am testing the hypothesis that the West Virginia parasite is different from samples from other locations. This would support evidence of multiple strains of *Myxobolus cerebralis* in the US. For the genetic analysis, DNA was extracted from the spores and the 18S and ITS-1 regions were amplified through PCR. An agarose gel confirmed the fragments were the correct size. These fragments are being cloned and will be sequenced.The DNA sequence data will be compared to published GenBank sequences. I expect my results to show the 18S sequence of the WV samples to be similar to the WV 18S sequences in GenBank. Also, the WV samples should be different from other samples in the US.