

**Functional analysis of rare polymorphisms in the Aryl hydrocarbon receptor (AHR) protein.**

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The aryl hydrocarbon receptor (AHR) is a ligand-mediated transcription factor that binds a number of environmental toxins and mediates their effects within the cell. Particular polymorphisms within the gene of this protein have been found to increase susceptibility towards pituitary adenoma formation in the presence of environmental toxins such as dioxin. The aim of this project is to introduce two particular polymorphisms into the coding sequence of the AHR using site-directed mutagenesis and expression the wild-type and mutant AHR within bacteria to elicit protein production. The proteins will then be extracted and purified in order to facilitate analysis and comparison of wild-type and mutant proteins.