

Sleeping sickness essay sample

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Sleeping sickness is infection with germs carried by certain flies. These germs are *Trypanosoma brucei rhodesiense* and *Trypanosoma brucei gambiense*. The more severe form of the illness is caused by *T. rhodesiense*. This results in swelling of the brain. Tsetse flies carry the infection. When an infected fly bites you, the infection spreads through your blood. And some of the risk factors include living in parts of Africa where the disease is found and being bitten by tsetse flies. The disease is very rare in the United States, and is only found in travelers who have visited or lived in Africa. Symptoms are being anxiety, drowsiness during the day, fever, weakness, sweating... After knowing all this about the disease (sleeping sickness) is when we will understand the impact of genomic Education. How we can use this genomic knowledge towards development of new tools for diagnosis, treatment and prevention of sleeping sickness.

If one has a genomic education and know about the entire gene and their sequences. And they will be able to understand how the availability of the genome sequences of trypanosomatid parasites has set high hopes for the discovery of new drug targets using a reverse pharmacology approach. Reverse pharmacology contrasts with traditional drug discovery by starting with the genome as the source of all potential targets and then eliminating through a series of screens those that are unlikely to provide an effective target for drug design. Central to assessment of a protein as a drug target is that it is “druggable” and that its presence is essential for the organism viability. Once this is established, however, there are two fundamentally different methods by which genome targets are identified and developed

from the genome. Some targets are identified as homologous proteins to existing drug targets in other organisms.

This approach allows for “ piggy-backing” of drug development. Piggy-backing is especially effective for targets of anti-cancer drugs, where a conserved enzyme is essential to parasite survival. Once identified, the task is to highlight variation between the structure of the parasite enzyme and the human enzyme that can serve as the basis for drug specificity and modify inhibitors using medicinal chemistry to tailor them for antiparasitic activity without toxicity to the host. Generally study shows that Genomic Education demonstrated that genome sequences are useful in the identification of genes involved in drug resistance and therefore will be helpful in aiding to develop new strategies for the development of drugs for treatment of trypanosomatid infections.

References

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