**Development of a Model of Neurologic Disease Using Flatworms**

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**In the spring of 2019 two representatives from our laboratory were invited to the Target ALS Conference in Cambridge. Our expectations were that we would learn of new treatments for ALS and of developments in screening methods for candidate drugs. Along with a distinguished group of scholars attending the conference, I shared the disappointments in that there were no models for treatment, and no exciting therapies. Upon our return I began looking for a laboratory model of neurologic disorders. I now present a screening method for the research community that is cheap, quick, and easily adapted to individual research programs.**

**Planaria were obtained from Carolina Biological Supply. On receipt, the specimens and**

**fluid were decanted into 500 mL beakers, and these were filled with purified water. The**

**specimens were observed for a day to establish their normal structure and streaming**

**activity. Various reagent solutions were assembled. Commercial (3% solution) antiseptic**

**hydrogen peroxide was obtained locally. Adrenochrome Na sulfonate was obtained from**

**ABCAM. The adrenochrome was dissolved in purified water to produce a 3.0 mg/mL**

**solution. Three flatworms were placed in each Petri dish in 7.0 mL H2O. Multiple**

**dishes were used to assess potential therapeutic agents. As a first step 10 uL of hydrogen peroxide solution was added to each dish and the specimens observed. After 30 minutes, 100 uL of adrenochrome solution was added to each dish. After 2 hours the flatworms were observed to have shortened, and to have circular contractures (fig.1). Their eyes began to further separate, and the worms were rendered immobile. This period of immobility can be rectified using select pharmacological agents.**

**Dr. Garnett believes this can be used as a model of neurologic disease and is a suitable early stage screen for testing candidate agents designed to restore normal configuration and behavior. Dr. Garnett is sharing access to this screening technique with the research community to, hopefully, facilitate more rapid development of drug candidates for motor disease.**