

## Supplementary Material

### **A highly soluble, non-phototoxic, non-fluorescent blebbistatin derivative**

**Boglárka H. Várkuti<sup>1,+</sup>, Miklós Képiró<sup>1,+</sup>, István Ádám Horváth<sup>1</sup>, László Végner<sup>1</sup>, Szilvia Ráti<sup>1</sup>, Áron Zsigmond<sup>2</sup>, György Hegyi<sup>1</sup>, Zsolt Lenkei<sup>3</sup>, Máté Varga<sup>2</sup> and András Málnási-Csizmadia<sup>1,4,5,\*</sup>**

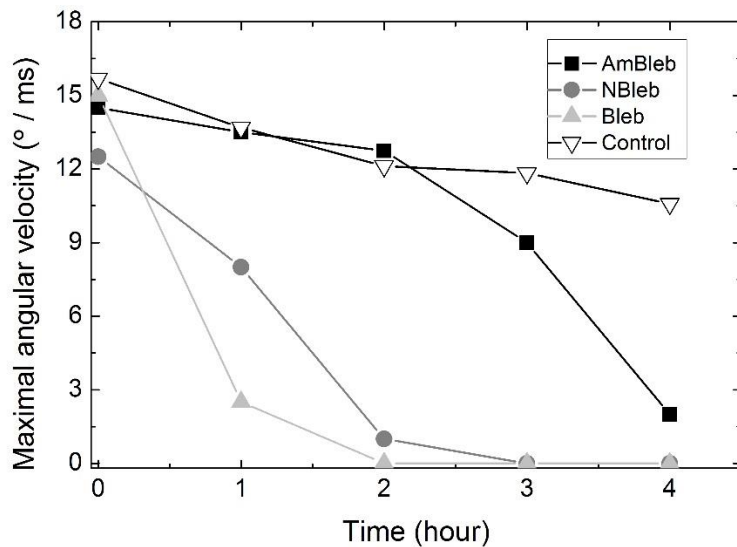
<sup>1</sup>Department of Biochemistry, Institute of Biology, Eötvös Loránd University, H-1117 Budapest, Hungary

<sup>2</sup>Department of Genetics, Institute of Biology, Eötvös Loránd University, H-1117 Budapest, Hungary

<sup>3</sup>Brain Plasticity Unit, ESPCI-Paris-Tech, CNRS UMR8249, Paris, France

<sup>4</sup>MTA-ELTE Molecular Biophysics Research Group, Department of Biochemistry, Eötvös Loránd University, H-1117 Budapest, Hungary

<sup>5</sup>Optopharma Ltd., H-1015 Budapest, Hungary



**Supplementary Figure 1. Maximal angular velocity of the head during C-start escape of zebrafish in the absence and presence of blebbistatin (Bleb), para-nitroblebbistatin (NBleb) and para-aminoblebbistatin (AmBleb).** Medians (n=30) of the parameter maximal angular velocity of C-start are presented in the function of time in the absence (Control) and in the presence of 2  $\mu$ M concentration of the inhibitors. Half-inhibition values are 0.6, 1.3 and 3.2 hours for Bleb, NBleb and AmBleb, respectively.

## Video Legends

**Video 1. Fast escape response of fish in the absence or presence of blebbistatin (Bleb), para-nitroblebbistatin (NBleb) and para-aminoblebbistatin (AmBleb).** Representative videos of the fast escape of single zebrafish embryos in drops due to a single tap on the experimental surface, after 1 hour of incubation in the absence (Control) or presence of 20  $\mu$ M inhibitor concentrations. The strength of the tap was standardized by a custom-made tapping device. The fast escape response (maximal angular velocity of the fish) was monitored at 500 fps for 2 s.

**Video 2. The effect of blebbistatin, para-nitroblebbistatin and para-aminoblebbistatin on the heart muscle of zebrafish embryos.** Representative videos of the heart beating of the same zebrafish embryos before and after incubating the animals in the presence of 20  $\mu$ M for 1 hour (Bleb, NBleb) or for 3 hours (AmBleb). Videos were taken at 15 fps for 110 s.