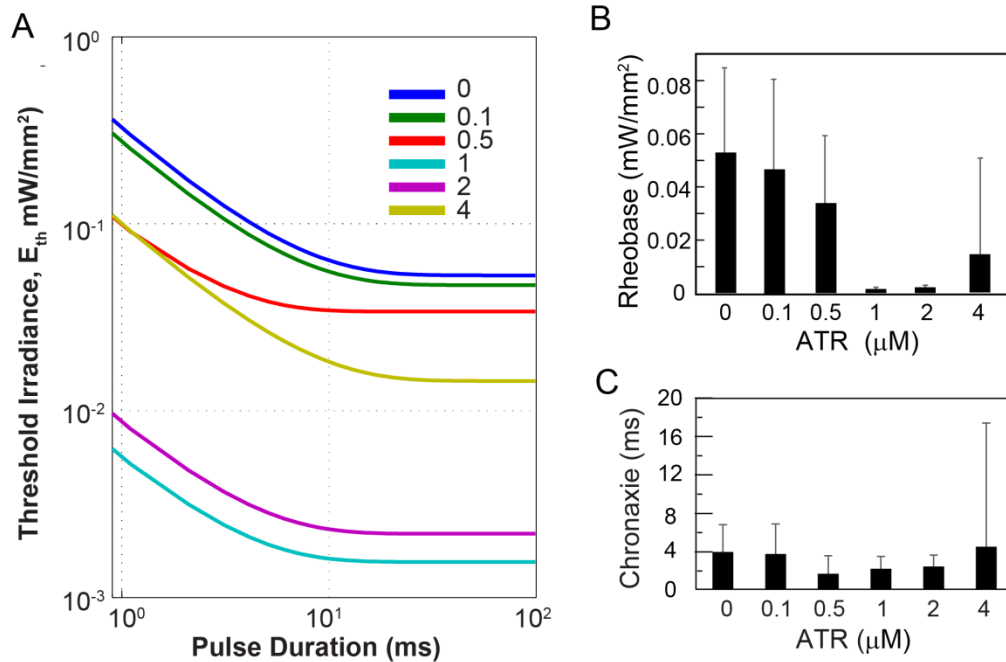


# Cardiac Optogenetics: Enhancement by All-Trans-Retinal

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## Supplemental Information for Yu et al.



**Supplemental Figure S1. Parameter fits to the strength-duration data in Fig 3.** (A) Using the Matlab curve fitting tool box, fitting to the model  $\frac{Rheobase}{1 - e^{-\frac{-x \log(2)}{chronaxie}}}$  was completed within  $4 \times 10^6$  iterations and termination tolerance =  $10^{11}$ . (B) Fitted rheobase with 95% confidence intervals (CI). The CIs of 1 and 2  $\mu$ M groups do not have any overlap with that of other concentrations. (C) Fitted chronaxie with 95% confidence intervals.

**Supplemental Table S1. Outcome of statistical analysis of data from Fig 3 – significant differences indicated.** The two factors are pulse duration and ATR concentration. (\*) denotes a significant difference, detected in pair-wise comparisons after Tukey-Kramer post hoc correction and by non-overlapping confidence intervals with  $\alpha$  level set at 5%. Since all pulse duration comparisons share the same pattern of significance (except 1 ms), comparisons among ATR concentration are listed in the table. The 1ms group did not achieve significant difference from the 0.5  $\mu$ M condition.

	0	0.1	0.5	1	2	4
0				*	*	*
0.1				*	*	
0.5				*	*	
1	*	*	*			*
2	*	*	*			*
4	*			*	*	