

# Report

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Generated by Multiwell-Analyzer 1.6.2.0

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# 1. Quinidine

<b>Dilution Series</b>	Control, 100 nM, 300 nM, 1 $\mu$ M, 3 $\mu$ M, 10 $\mu$ M, 30 $\mu$ M
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## 1.1. Dose-Response-Curves

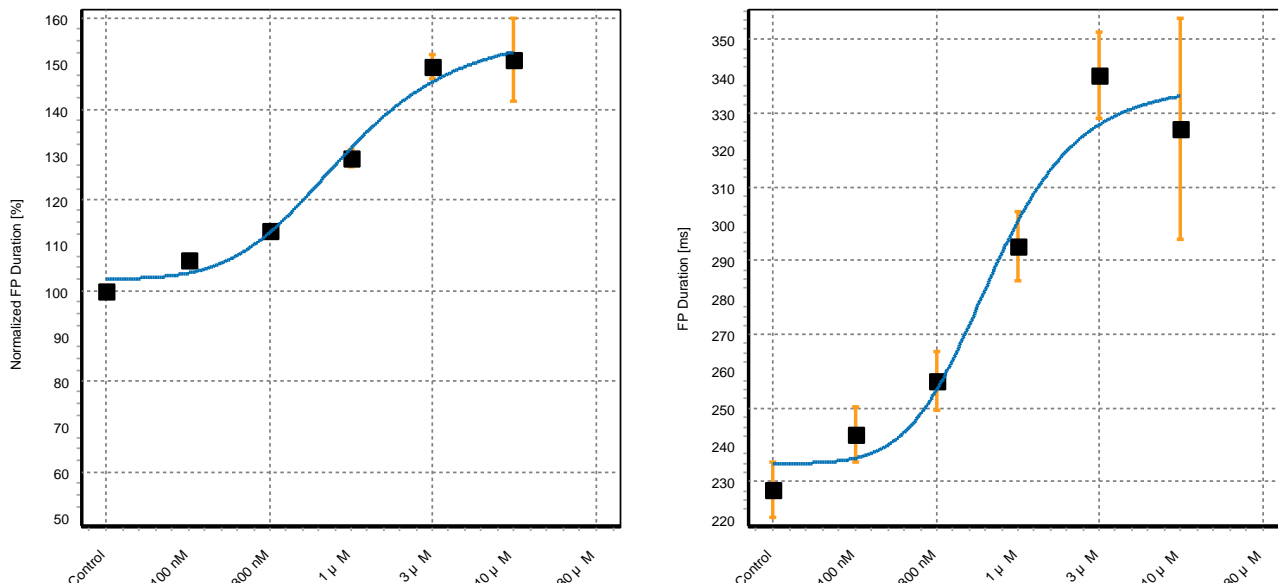


Figure 1.1: Dose-Response-Curves for FP Duration. Left: Normalized values, Right: Raw values

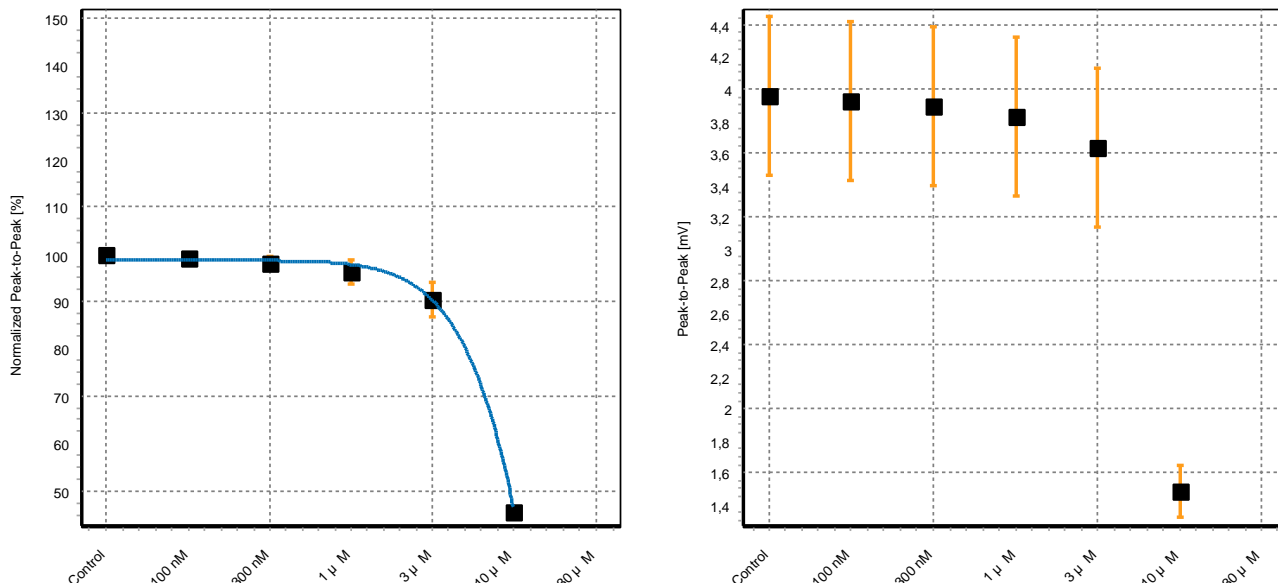


Figure 1.2: Dose-Response-Curves for Na Peak-to-Peak Amplitude. Left: Normalized values, Right: Raw values

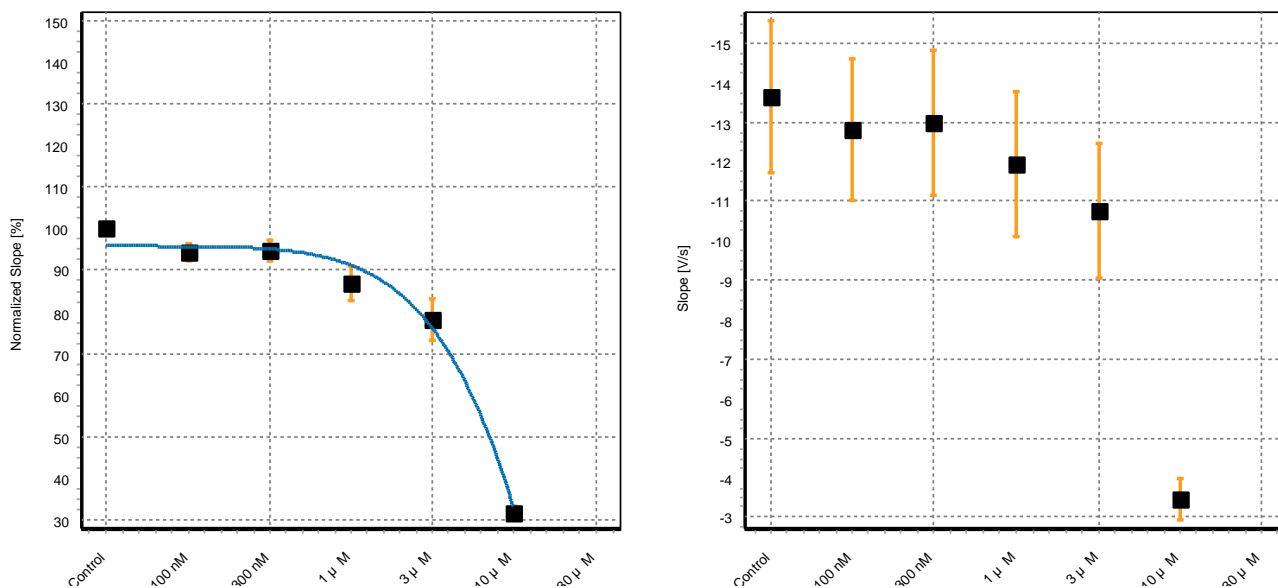


Figure 1.3: Dose-Response-Curves for Na Peak Slope. Left: Normalized values, Right: Raw values

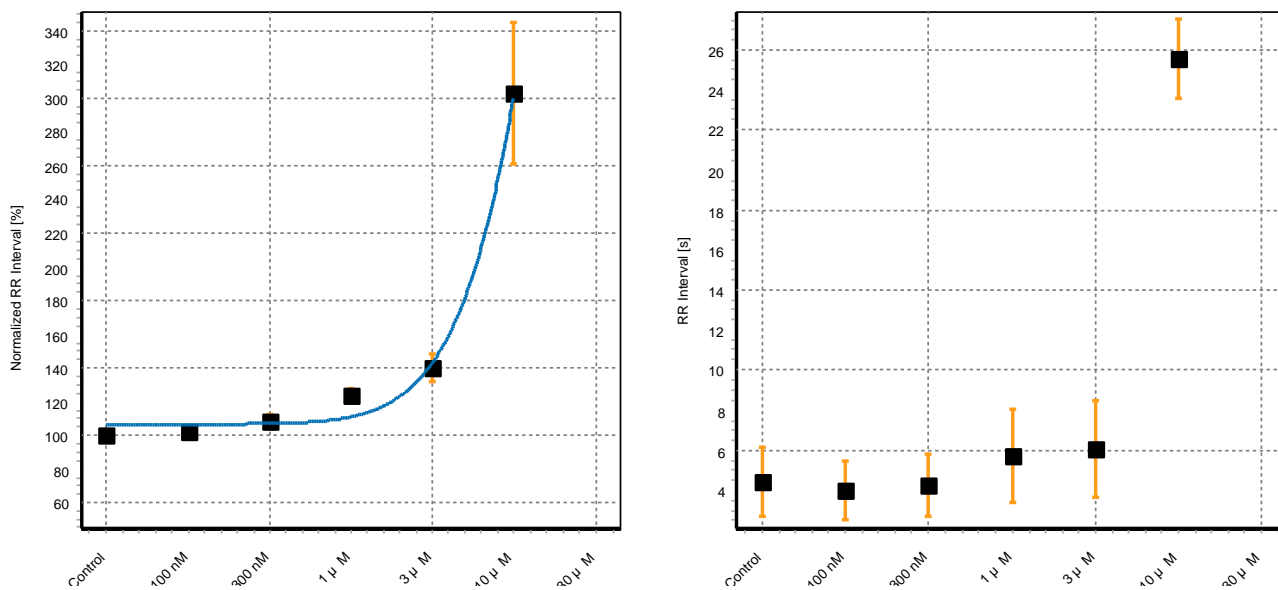


Figure 1.4: Dose-Response-Curves for RR Interval. Left: Normalized values, Right: Raw values

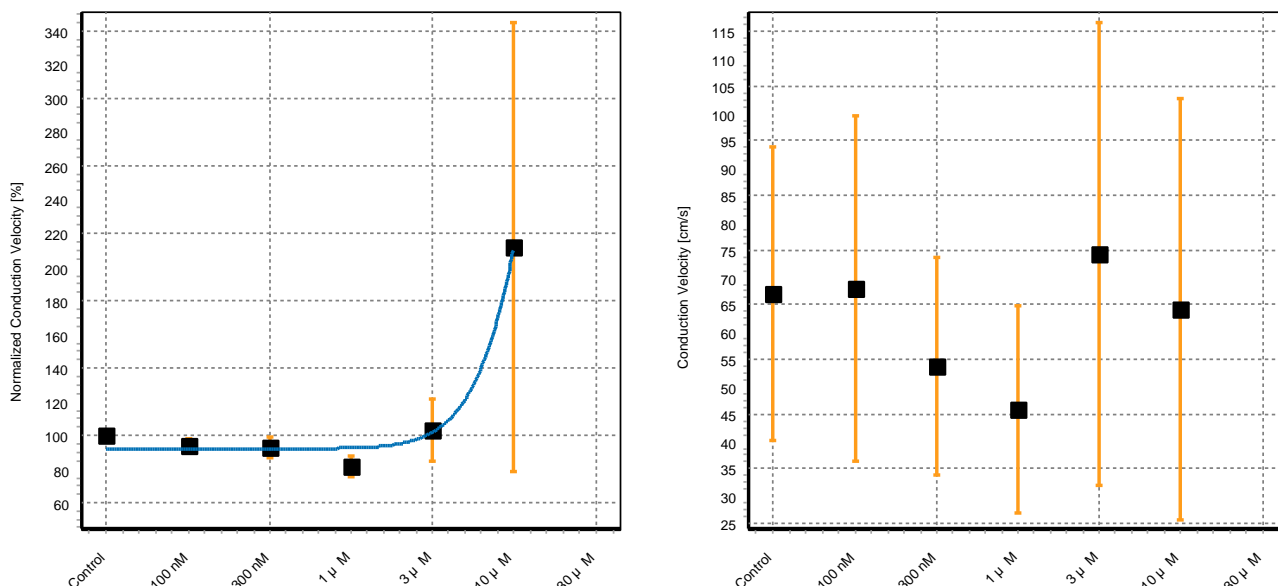


Figure 1.5: Dose-Response-Curves for Conduction Velocity. Left: Normalized values, Right: Raw values

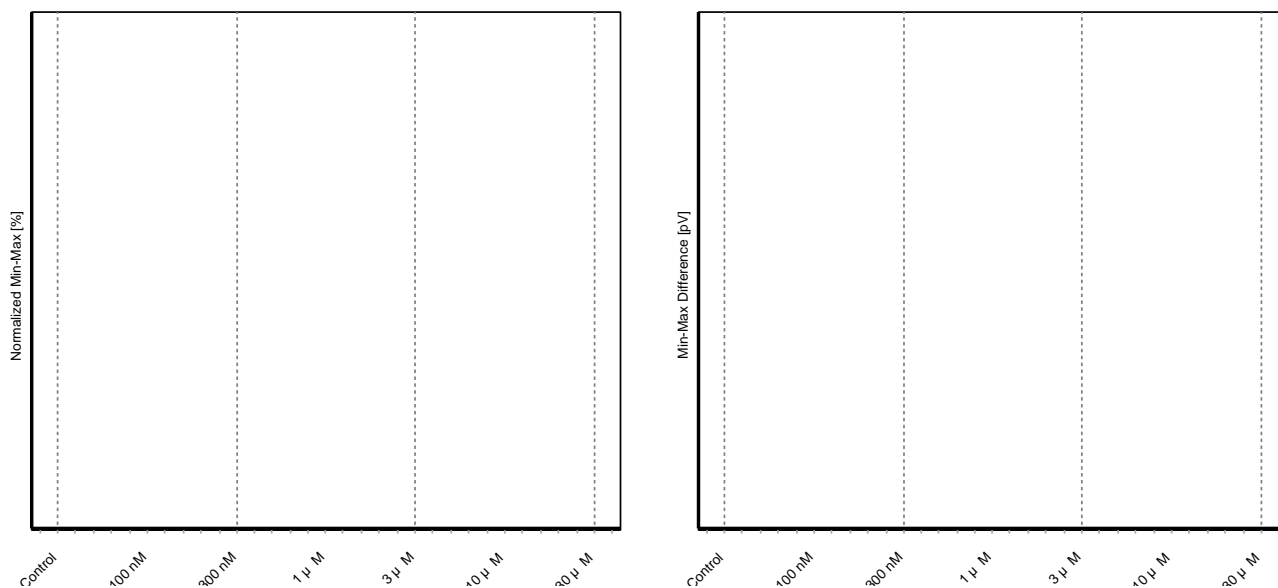


Figure 1.6: Dose-Response-Curves for Max-Min Difference. Left: Normalized values, Right: Raw values

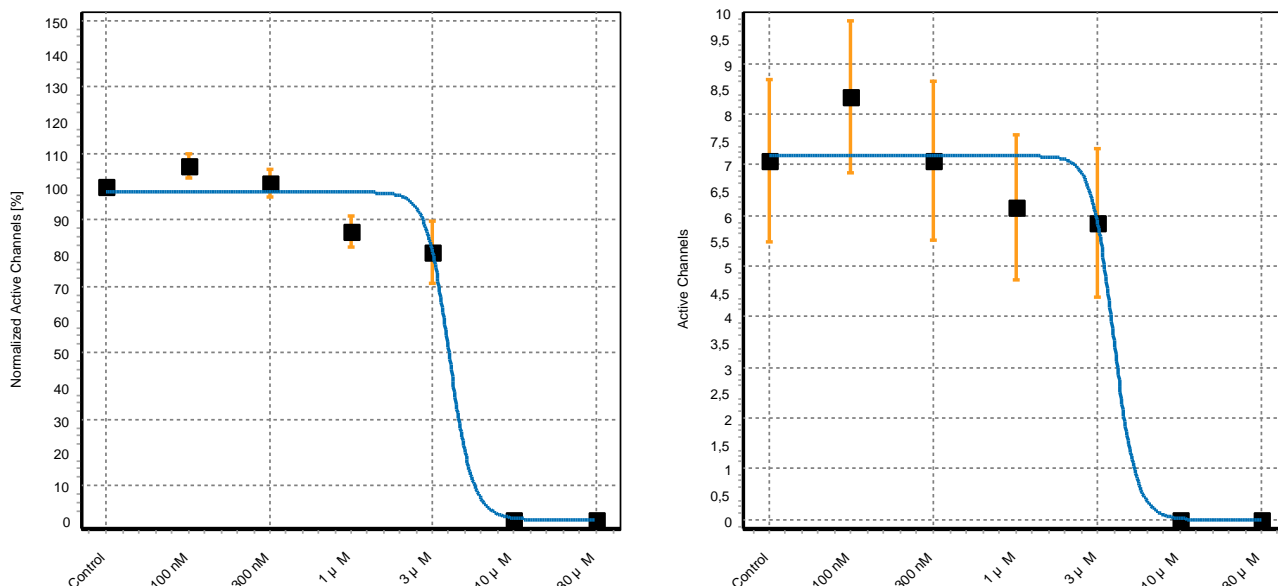


Figure 1.7: Dose-Response-Curves for Active Channels. Left: Normalized values, Right: Raw values

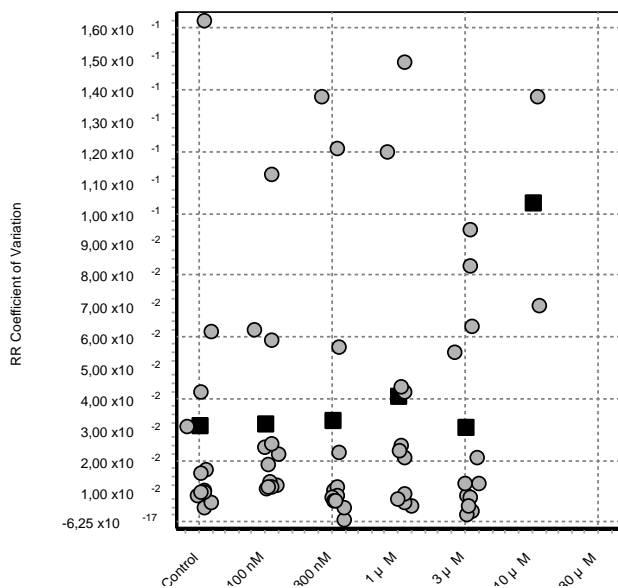


Figure 1.8: Dose-Response-Curve for coefficient of variation of the RR interval. Black squares: Average CV over all wells, Grey Circles: CV of a single well.

## 2. Lab Book

<b>Institution</b>	
<b>Director</b>	
<b>Lab</b>	
<b>Scientist</b>	
<b>Operator</b>	

<b>Study ID</b>	
<b>Study Name</b>	
<b>Experiment ID</b>	
<b>Plate ID</b>	
<b>Cell Line ID</b>	
<b>Cell Line Name</b>	
<b>Cell Culture Age</b>	0h
<b>Dilution Medium</b>	

<b>Notes</b>	
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### 3. Experiment Settings

<b>Sampling Rate</b>	10000 Hz
<b>Low-Pass Filter Type</b>	Bessel
<b>Low-Pass Filter Order</b>	4
<b>Low-Pass Filter Cutoff Frequency</b>	3500 Hz
<b>High-Pass Filter Type</b>	Bessel
<b>High-Pass Filter Order</b>	2
<b>High-Pass Filter Cutoff Frequency</b>	0.1 Hz
<b>Plate Type</b>	24-Well Plate Epoxy (24W700/100F-288)

<b>Test Phase Recording Duration</b>	1 min
<b>Analyze Test Phase</b>	Full
<b>Wash-In Phase Duration</b>	2 min

The image shows a 4x6 grid representing a 24-well plate. The columns are numbered 1 to 6, and the rows are lettered A to D. Wells in columns 1, 2, and 3 are grey with a grey 'X' inside, indicating they are not used. Wells in columns 4, 5, and 6 are orange, indicating they are used. To the right of the grid is a yellow box labeled 'Quinine', indicating the substance being tested.



## 4. Quinidine

<b>ID</b>	Quinidine
<b>Name</b>	
<b>Medium</b>	
<b>Dilution Series</b>	Control, 100 nM, 300 nM, 1 $\mu$ M, 3 $\mu$ M, 10 $\mu$ M, 30 $\mu$ M
<b>Dosing Protocol</b>	Cumulative
<b>Notes</b>	

### 4.1. Well A4

Selected Electrode: 42

<b>Filter</b>	<b>Frequency [Hz]</b>
Notch	50

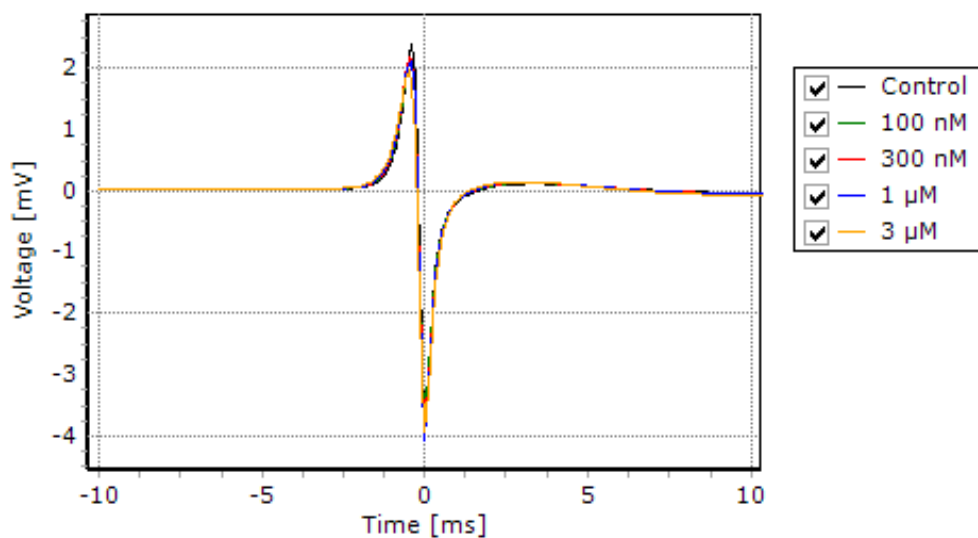


Figure 4.1.1: Overlay of Na peak averages.

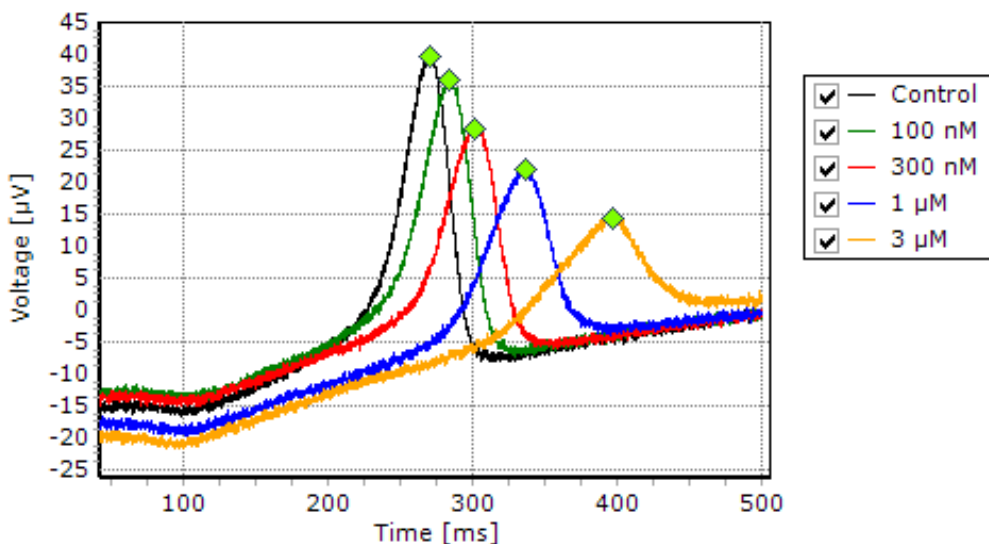


Figure 4.1.2: Overlay of averages for the T detection search interval.

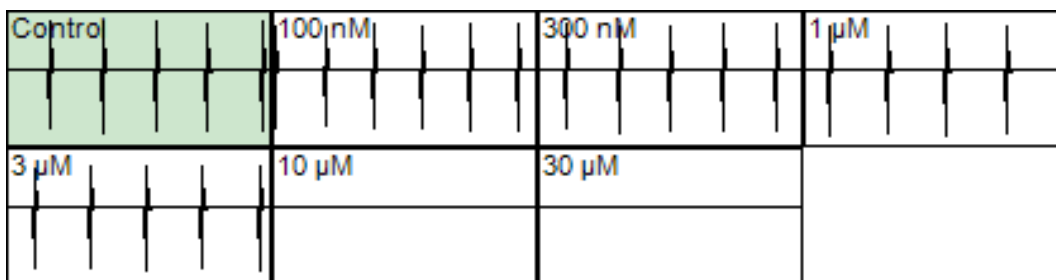


Figure 4.1.3: Overview of the last 10 seconds of raw data for each dose. Voltage range: -4431 µV - 3498 µV.

Dose	Heart Beat Count	Peak-to-Peak [µV]	Slope [V/s]	RR Interval [ms]	FP Duration [ms]	Conduction Velocity [cm/s]	Min-Max Difference [µV]	Active Channels
Control	32	6299.282	-27.845	1876.187	270.5	32.263		12
100 nM	32	6008.722	-25.261	1876.494	284.4	31.221		12
300 nM	31	6195.407	-25.778	1955.707	302.2	29.309		12
1 µM	28	6281.512	-26.413	2165.381	336.8	29.373		12
3 µM	29	5910.452	-21.865	2103.036	396.7	30.48		8
10 µM								0
30 µM								0

## 4.2. Well A5

Selected Electrode: 32

Filter	Frequency [Hz]
Notch	50

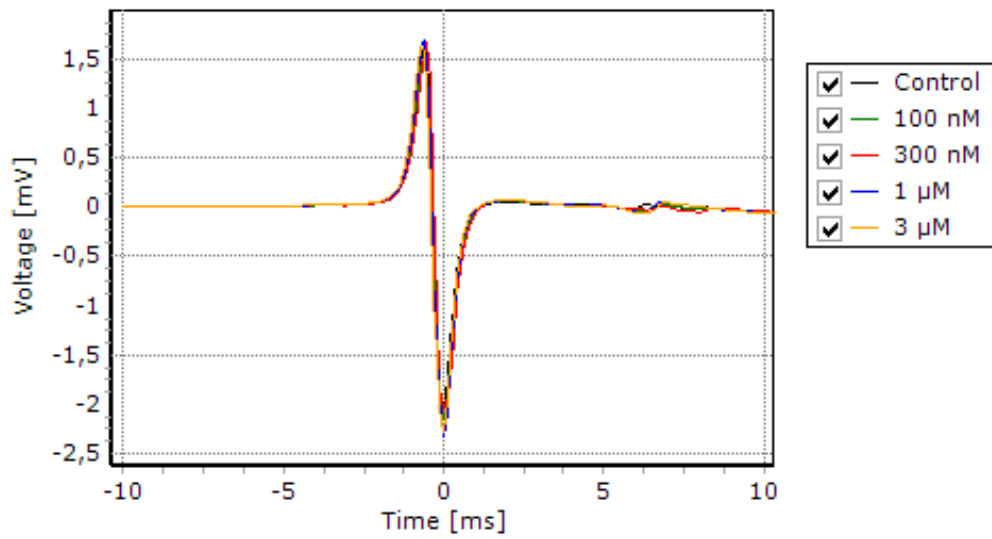


Figure 4.2.1: Overlay of Na peak averages.

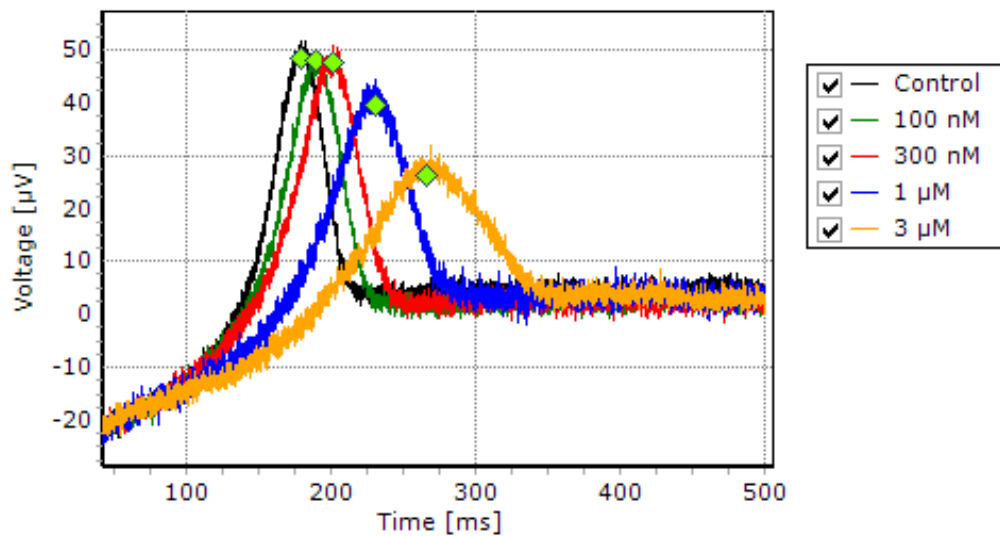
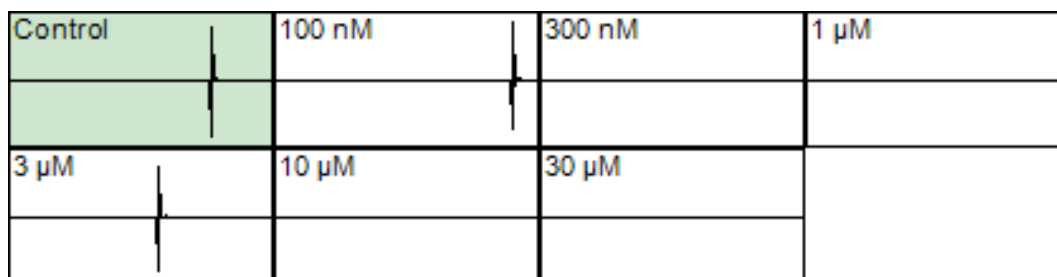


Figure 4.2.2: Overlay of averages for the T detection search interval.



**Figure 4.2.3:** Overview of the last 10 seconds of raw data for each dose.  
Voltage range: -2484  $\mu\text{V}$  - 2561  $\mu\text{V}$ .

Dose	Heart Beat Count	Peak-to-Peak [ $\mu\text{V}$ ]	Slope [V/s]	RR Interval [ms]	FP Duration [ms]	Conduction Velocity [cm/s]	Min-Max Difference [ $\mu\text{V}$ ]	Active Channels
Control	4	3850.493	-14.297	18903.2	179.5	27.902		0
100 nM	4	3829.974	-12.726	16679.067	189	26.139		0
300 nM	3	3794.649	-14.651	18234.3	201.7	25.884		0
1 $\mu\text{M}$	2	4019.992	-12.482	27593.1	230.3	25.733		0
3 $\mu\text{M}$	3	3935.036	-12.053	26995.1	266.5	25.585		0
10 $\mu\text{M}$								0
30 $\mu\text{M}$								0

### 4.3. Well A6

Selected Electrode: 42

Filter	Frequency [Hz]
Notch	50

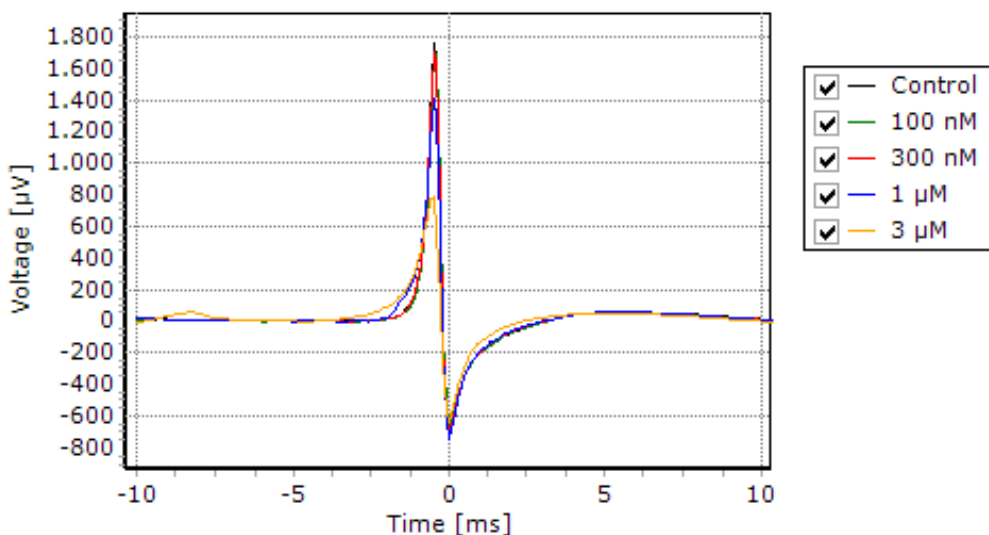


Figure 4.3.1: Overlay of Na peak averages.

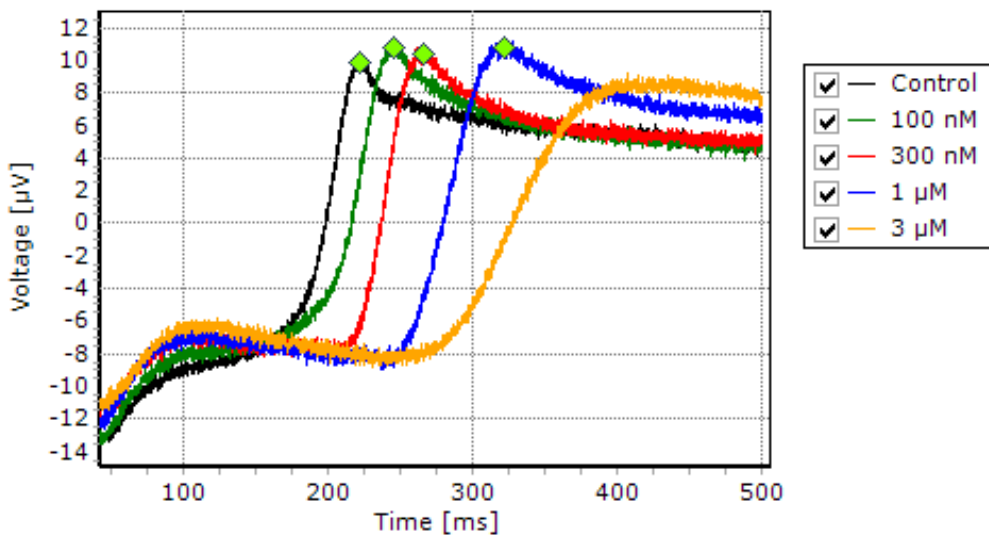


Figure 4.3.2: Overlay of averages for the T detection search interval.

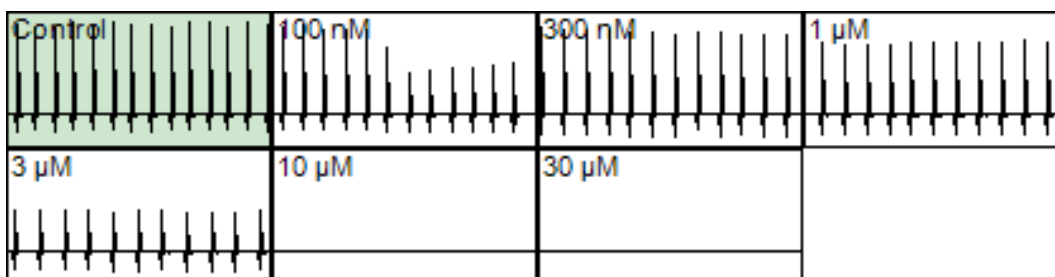


Figure 4.3.3: Overview of the last 10 seconds of raw data for each dose. Voltage range: -787  $\mu$ V - 2409  $\mu$ V.

Dose	Heart Beat Count	Peak-to-Peak [ $\mu\text{V}$ ]	Slope [V/s]	RR Interval [ms]	FP Duration [ms]	Conduction Velocity [cm/s]	Min-Max Difference [ $\mu\text{V}$ ]	Active Channels
Control	83	2508.686	-10.652	724.873	222.6	32.829		12
100 nM	75	2471.139	-10.092	806.455	245.2	20.409		12
300 nM	71	2479.487	-9.935	841.489	265.5	46.931		11
1 $\mu\text{M}$	68	2194.828	-8.184	870.661	322.2	28.307		9
3 $\mu\text{M}$	65	1444.484	-4.399	920.694		91.695		6
10 $\mu\text{M}$								0
30 $\mu\text{M}$								0

## 4.4. Well B4

Selected Electrode: 32

Filter	Frequency [Hz]
Notch	50

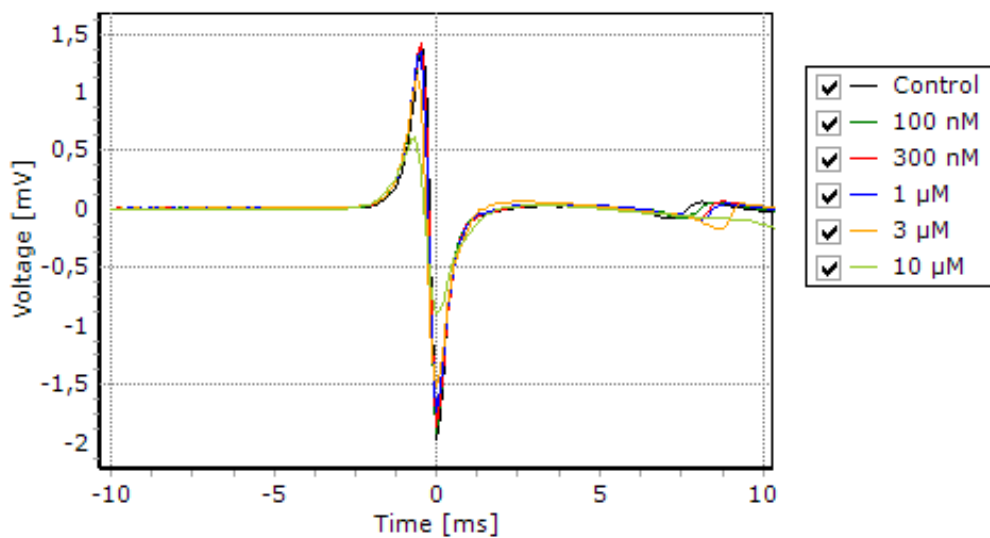


Figure 4.4.1: Overlay of Na peak averages.

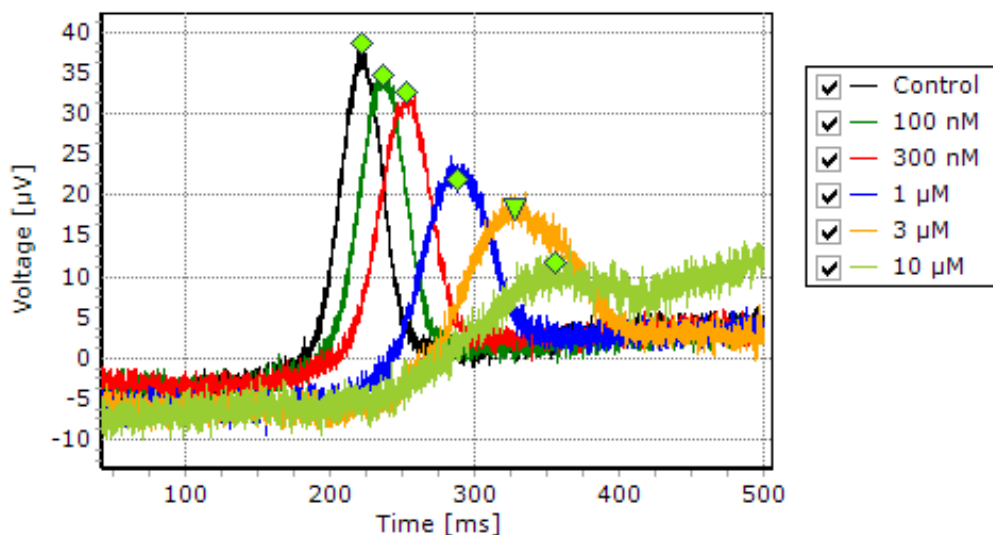


Figure 4.4.2: Overlay of averages for the T detection search interval.

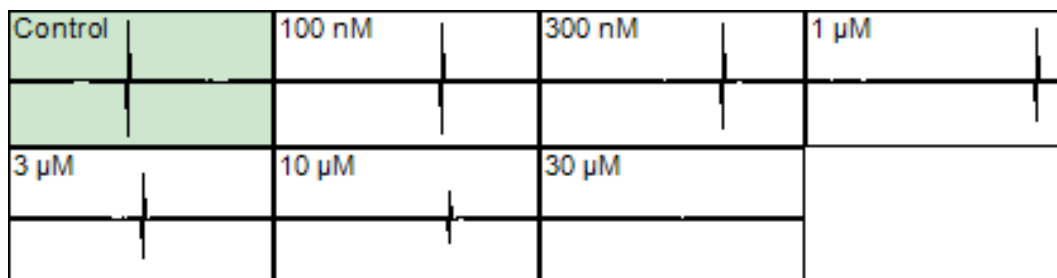


Figure 4.4.3: Overview of the last 10 seconds of raw data for each dose. Voltage range: -2084 µV - 2251 µV.

Dose	Heart Beat Count	Peak-to-Peak [µV]	Slope [V/s]	RR Interval [ms]	FP Duration [ms]	Conduction Velocity [cm/s]	Min-Max Difference [µV]	Active Channels
Control	7	3381.888	-12.203	8656.5	222.2	29.524		0
100 nM	8	3306.532	-11.594	7914.3	236.5	28.292		0
300 nM	8	3284.694	-10.852	7974.043	253.6	27.061		0
1 µM	6	3094.153	-9.735	9924.6	288.7	26.401		0
3 µM	5	2652.545	-7.824	13234.8	328.127	24.644		0
10 µM	3	1500.451	-3.521	23090.1	355.7	141.567		0
30 µM								0

## 4.5. Well B5

Selected Electrode: 31

Filter	Frequency [Hz]
Notch	50

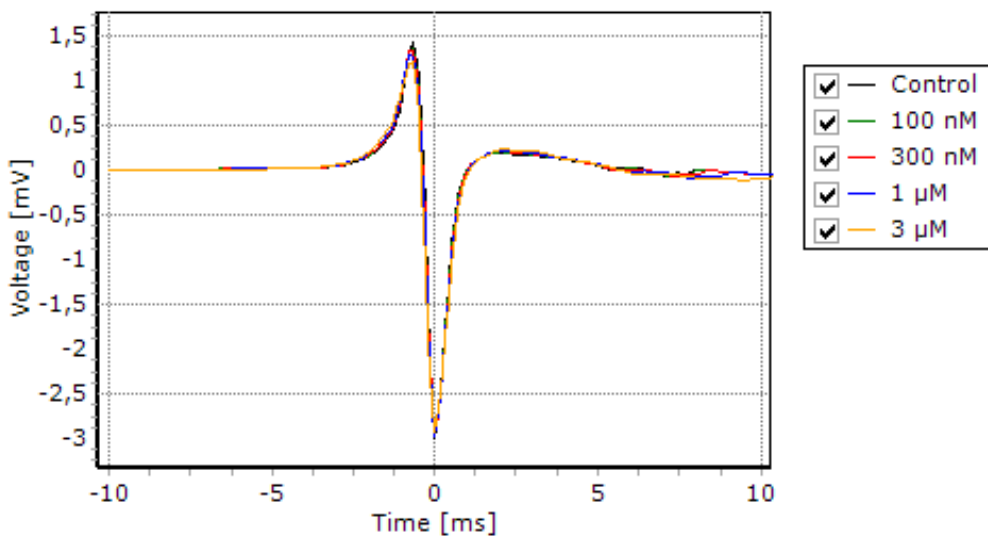


Figure 4.5.1: Overlay of Na peak averages.

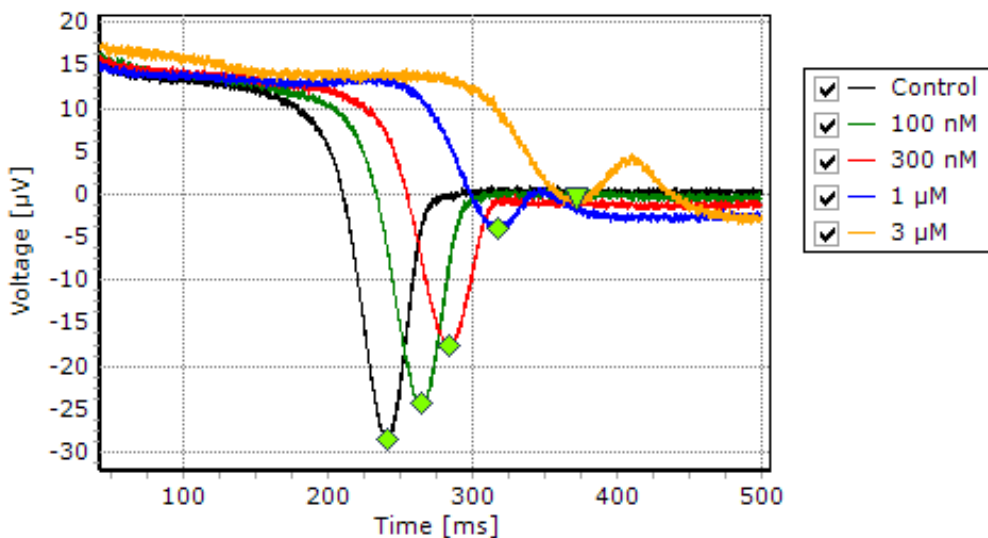
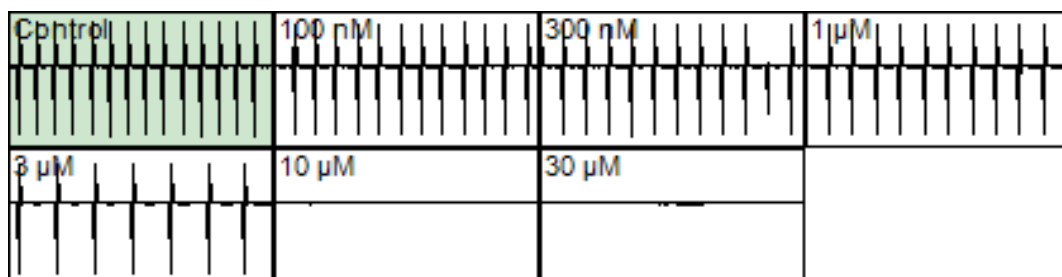


Figure 4.5.2: Overlay of averages for the T detection search interval.





**Figure 4.5.3:** Overview of the last 10 seconds of raw data for each dose.  
Voltage range:  $-3221 \mu\text{V}$  -  $2202 \mu\text{V}$ .

Dose	Heart Beat Count	Peak-to-Peak [ $\mu\text{V}$ ]	Slope [V/s]	RR Interval [ms]	FP Duration [ms]	Conduction Velocity [cm/s]	Min-Max Difference [ $\mu\text{V}$ ]	Active Channels
Control	87	4416.058	-11.662	685.701	240.9	30.777		12
100 nM	75	4355.559	-11.251	798.049	264.5	29.407		12
300 nM	70	4331.845	-11.162	857.497	284.4	29.181		12
1 $\mu\text{M}$	67	4256.609	-10.467	903.192	318.2	25.276		12
3 $\mu\text{M}$	43	4162.189	-9.101	1372.943	371.938	24.007		12
10 $\mu\text{M}$								0
30 $\mu\text{M}$								0

## 4.6. Well B6

Selected Electrode: 13

Filter	Frequency [Hz]
Notch	50

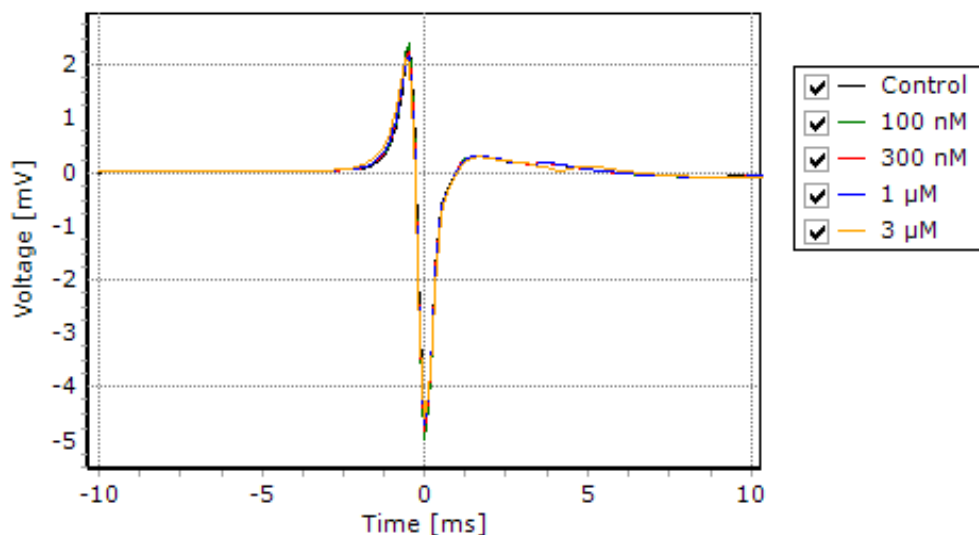


Figure 4.6.1: Overlay of Na peak averages.

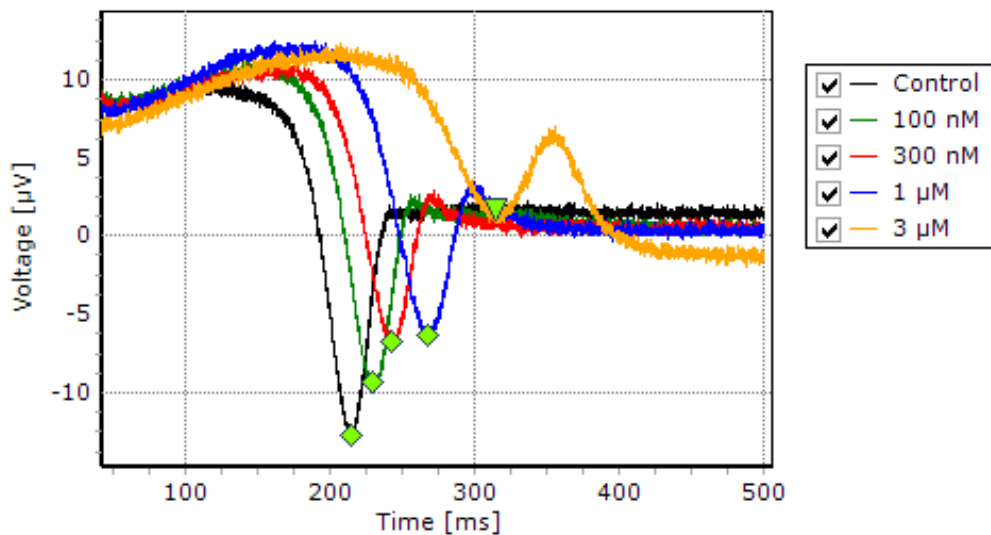


Figure 4.6.2: Overlay of averages for the T detection search interval.

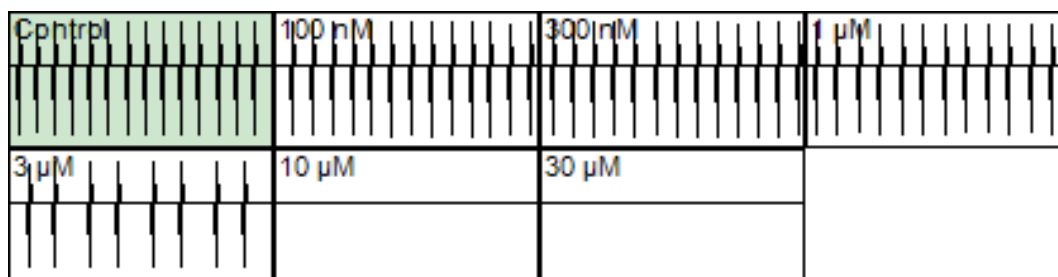


Figure 4.6.3: Overview of the last 10 seconds of raw data for each dose. Voltage range: -5479 μV - 3561 μV.

Dose	Heart Beat Count	Peak-to-Peak [ $\mu\text{V}$ ]	Slope [V/s]	RR Interval [ms]	FP Duration [ms]	Conduction Velocity [cm/s]	Min-Max Difference [ $\mu\text{V}$ ]	Active Channels
Control	89	7134.76	-23.21	674.5	214.6	338.76		9
100 nM	82	7274.475	-22.893	734.98	230.1	403.047		11
300 nM	78	7090.781	-22.236	770.761	243.3	267.375		11
1 $\mu\text{M}$	74	6890.016	-21.076	804.645	268.1	252.609		6
3 $\mu\text{M}$	56	6749.79	-20.018	1070.533	314.647	538.075		9
10 $\mu\text{M}$								0
30 $\mu\text{M}$								0

## 4.7. Well C4

Selected Electrode: 43

Filter	Frequency [Hz]
Notch	50

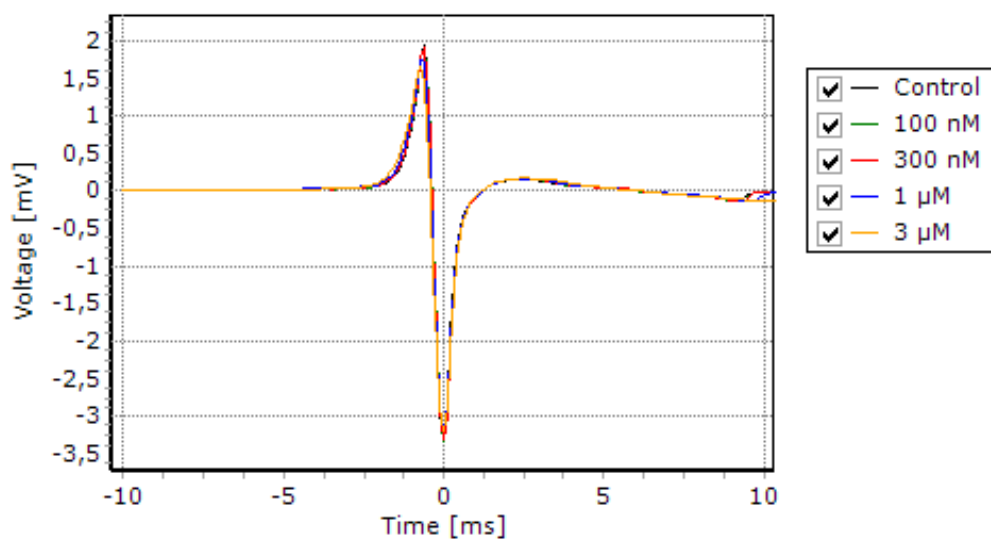


Figure 4.7.1: Overlay of Na peak averages.

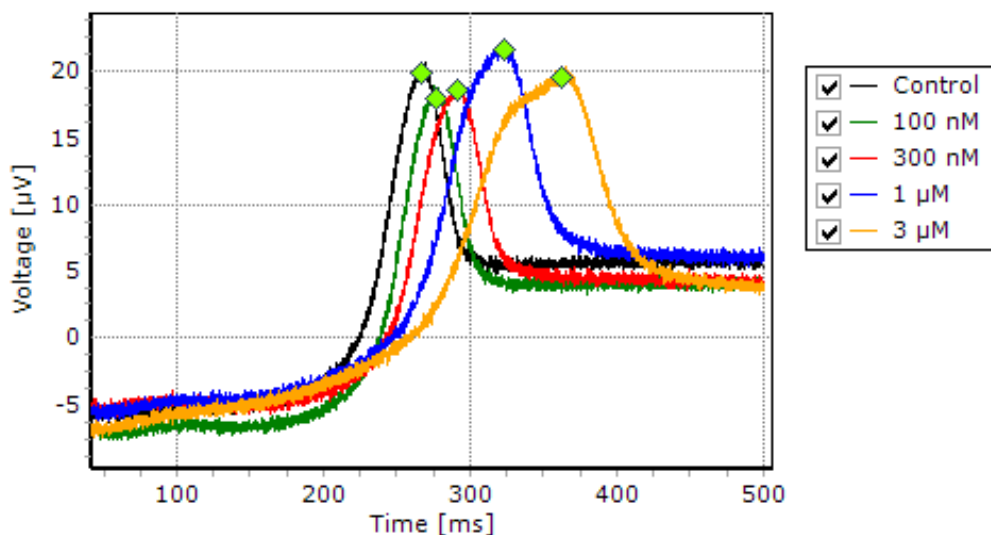


Figure 4.7.2: Overlay of averages for the T detection search interval.

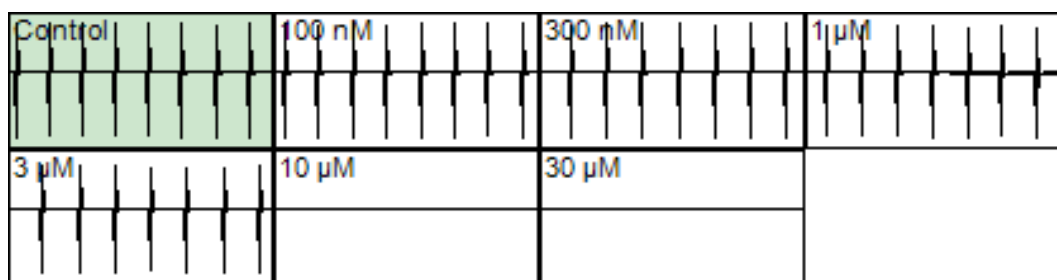


Figure 4.7.3: Overview of the last 10 seconds of raw data for each dose. Voltage range: -3587 µV - 2848 µV.

Dose	Heart Beat Count	Peak-to-Peak [µV]	Slope [V/s]	RR Interval [ms]	FP Duration [ms]	Conduction Velocity [cm/s]	Min-Max Difference [µV]	Active Channels
Control	48	5219.181	-14.134	1238.123	267.6	32.125		12
100 nM	47	5247.037	-13.886	1268.765	277.1	31.664		12
300 nM	44	5217.069	-13.801	1360.147	291.9	31.537		11
1 µM	45	4958.544	-12.445	1332.332	322.9	30.207		11
3 µM	44	4840.687	-10.57	1360.074	363.1	26.74		11
10 µM								0
30 µM								0

## 4.8. Well C5

Selected Electrode: 43

Filter	Frequency [Hz]
Notch	50

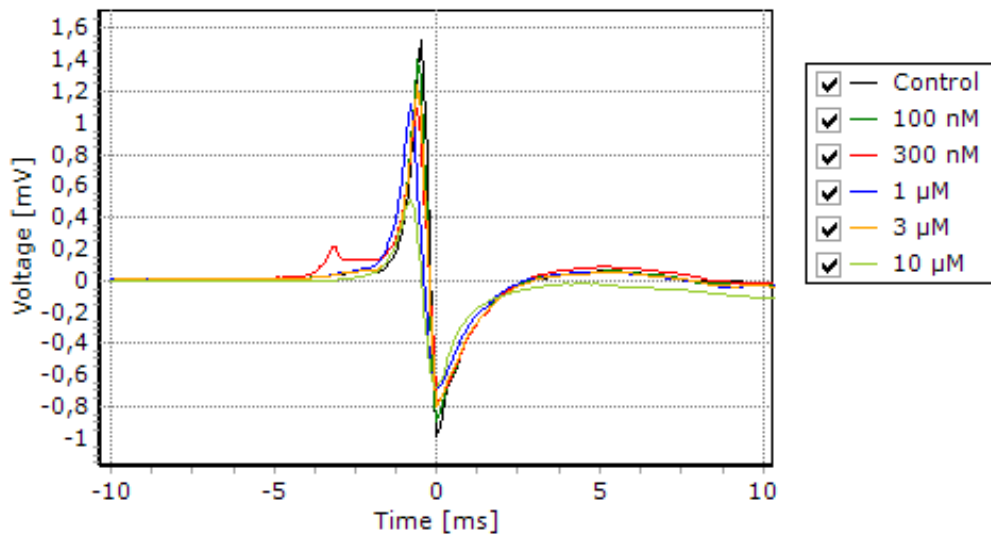


Figure 4.8.1: Overlay of Na peak averages.

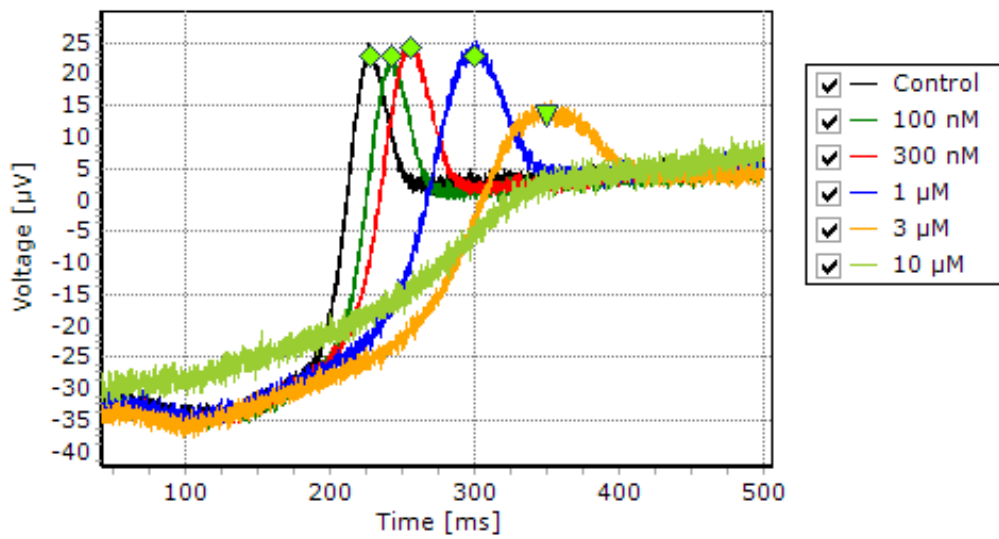
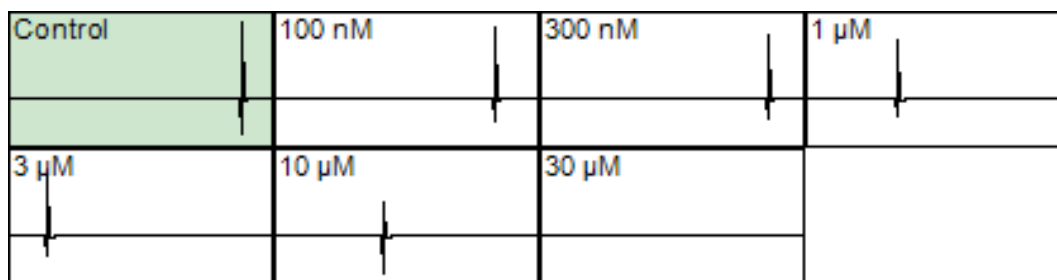


Figure 4.8.2: Overlay of averages for the T detection search interval.



**Figure 4.8.3:** Overview of the last 10 seconds of raw data for each dose.  
Voltage range: -1140  $\mu\text{V}$  - 2061  $\mu\text{V}$ .

Dose	Heart Beat Count	Peak-to-Peak [ $\mu\text{V}$ ]	Slope [V/s]	RR Interval [ms]	FP Duration [ms]	Conduction Velocity [cm/s]	Min-Max Difference [ $\mu\text{V}$ ]	Active Channels
Control	6	2505.524	-8.02	11505.82	228.1	32.455		0
100 nM	6	2295.032	-6.331	9851.9	242.3	30.738		0
300 nM	7	2054.243	-5.794	9512.383	255.6	31.098		0
1 $\mu\text{M}$	5	1862.601	-4.252	12711.5	300.5	29.315		0
3 $\mu\text{M}$	4	2034.612	-5.093	13178.1	349.471	29.377		0
10 $\mu\text{M}$	2	1194.881	-2.514	29352.3		27.486		0
30 $\mu\text{M}$								0

## 4.9. Well C6

Selected Electrode: 43

Filter	Frequency [Hz]
Notch	50

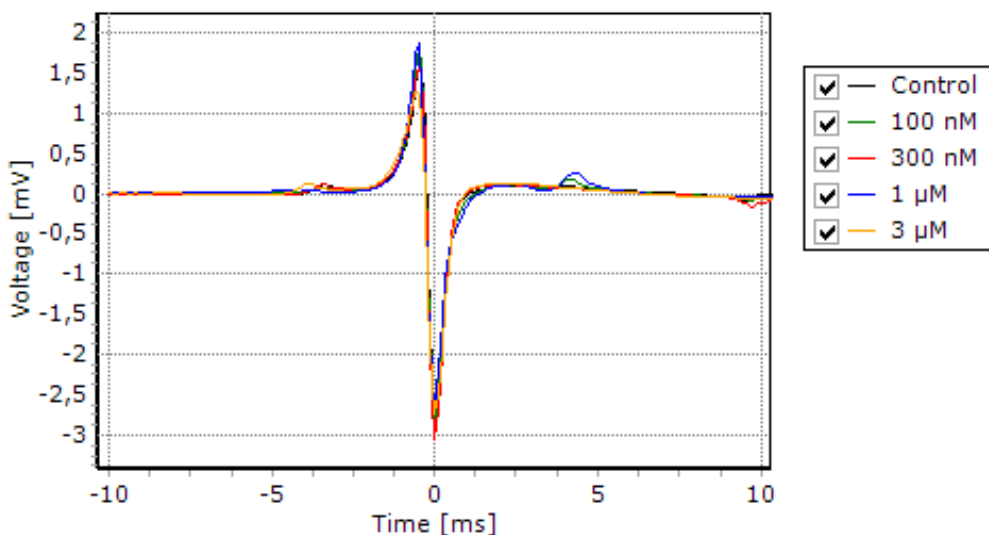


Figure 4.9.1: Overlay of Na peak averages.

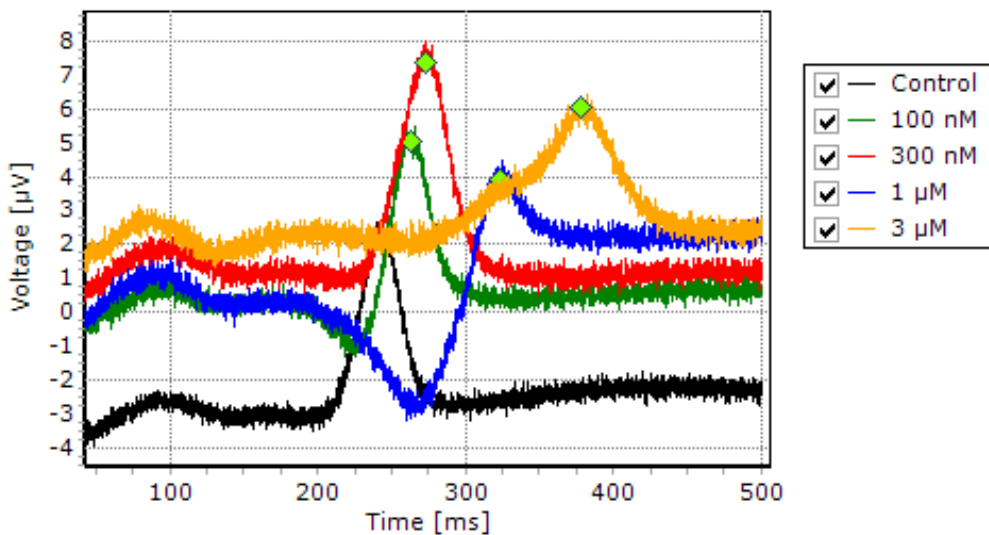


Figure 4.9.2: Overlay of averages for the T detection search interval.

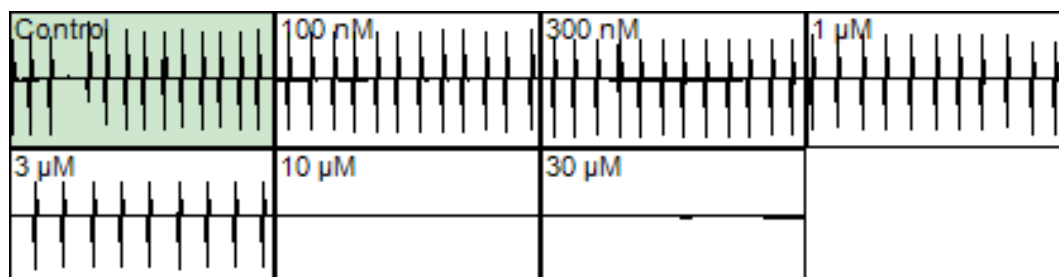


Figure 4.9.3: Overview of the last 10 seconds of raw data for each dose. Voltage range: -3342  $\mu$ V - 3323  $\mu$ V.

Dose	Heart Beat Count	Peak-to-Peak [ $\mu\text{V}$ ]	Slope [V/s]	RR Interval [ms]	FP Duration [ms]	Conduction Velocity [cm/s]	Min-Max Difference [ $\mu\text{V}$ ]	Active Channels
Control	85	4561.014	-17.692	704.45	242.8	31.664		10
100 nM	76	4723.924	-16.112	792.792	262.8	30.117		11
300 nM	74	4637.502	-17.925	814.759	273.4	29.867		11
1 $\mu\text{M}$	65	4566.866	-13.349	915.486	323.6	28.699		10
3 $\mu\text{M}$	57	4046.73	-13.775	1055.482	377.9	26.391		11
10 $\mu\text{M}$								0
30 $\mu\text{M}$								0

## 4.10. Well D4

Selected Electrode: 42

Filter	Frequency [Hz]
Notch	50

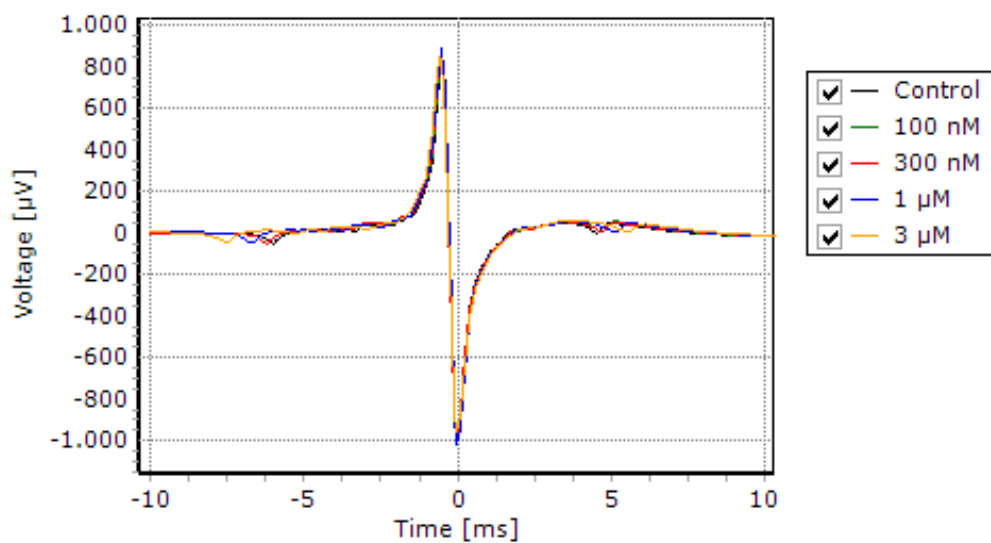


Figure 4.10.1: Overlay of Na peak averages.



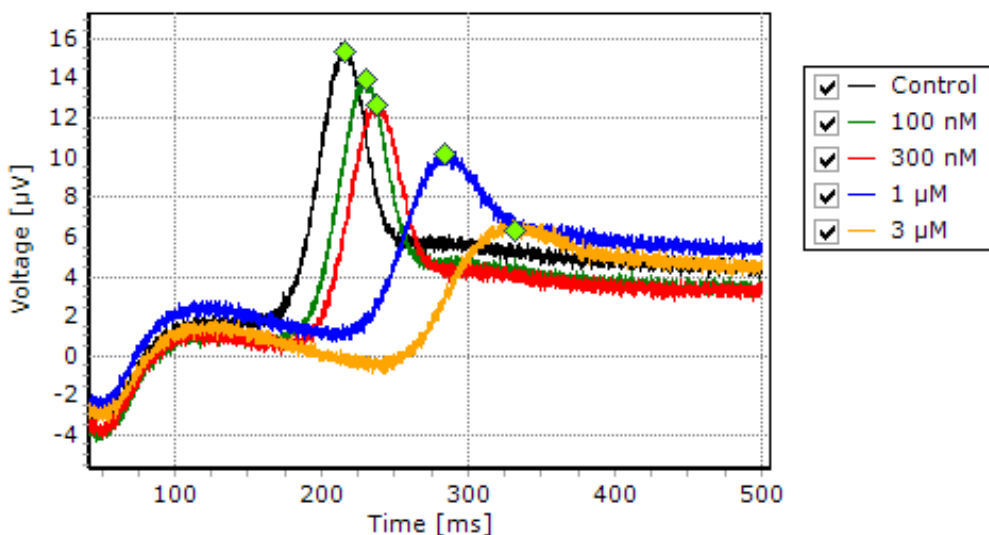


Figure 4.10.2: Overlay of averages for the T detection search interval.

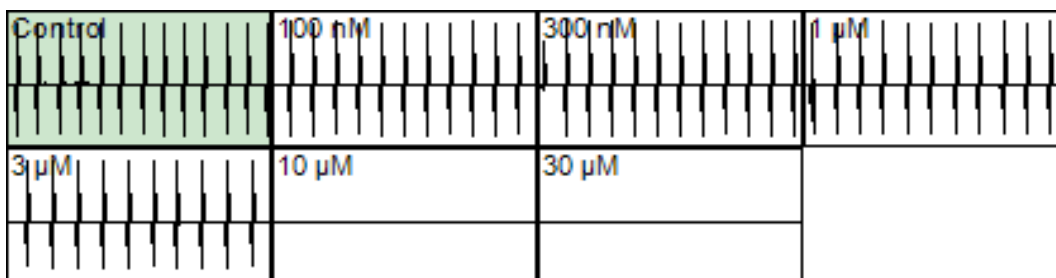


Figure 4.10.3: Overview of the last 10 seconds of raw data for each dose. Voltage range: -1049 µV - 1272 µV.

Dose	Heart Beat Count	Peak-to-Peak [µV]	Slope [V/s]	RR Interval [ms]	FP Duration [ms]	Conduction Velocity [cm/s]	Min-Max Difference [µV]	Active Channels
Control	77	1883.517	-5.58	778.129	215.9	28.074		12
100 nM	70	1888.89	-5.608	853.23	230.6	27.43		12
300 nM	69	1892.836	-5.742	865.151	238.4	27.266		11
1 µM	68	1905.828	-5.701	882.067	285.1	25.591		9
3 µM	64	1831.053	-5.108	936.094	332.5	23.908		11
10 µM								0
30 µM								0

## 4.11. Well D5

Selected Electrode: 34

Filter	Frequency [Hz]
Notch	50

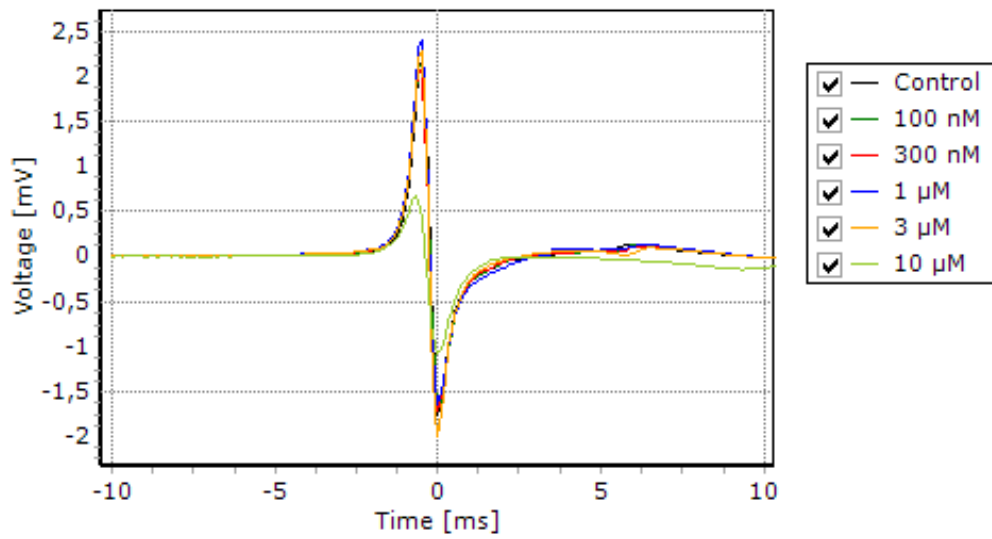


Figure 4.11.1: Overlay of Na peak averages.

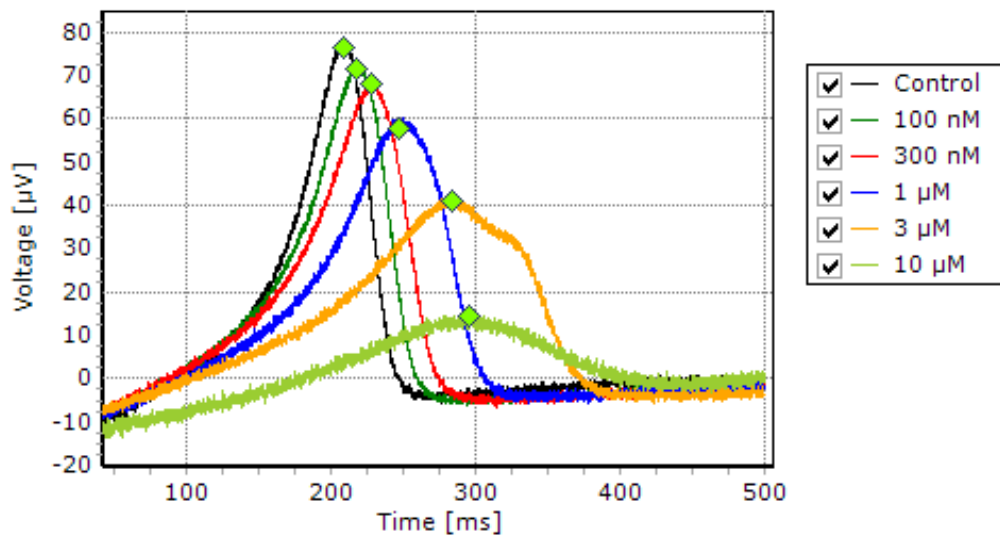
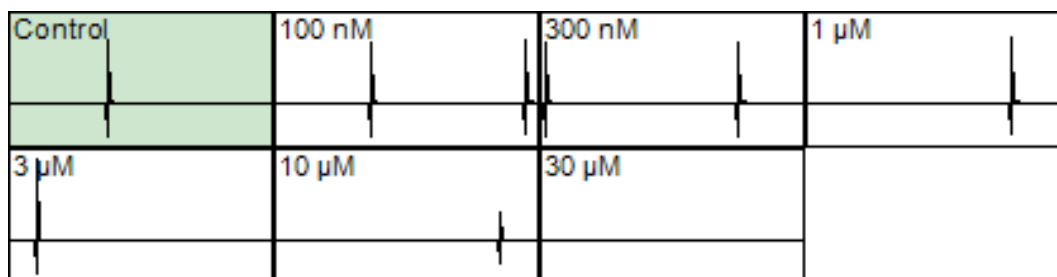


Figure 4.11.2: Overlay of averages for the T detection search interval.



**Figure 4.11.3:** Overview of the last 10 seconds of raw data for each dose.  
Voltage range:  $-1752 \mu\text{V}$  -  $3678 \mu\text{V}$ .

Dose	Heart Beat Count	Peak-to-Peak [ $\mu\text{V}$ ]	Slope [V/s]	RR Interval [ms]	FP Duration [ms]	Conducti on Velocity [cm/s]	Min-Max Difference [ $\mu\text{V}$ ]	Active Channels
Control	9	3963.269	-12.283	6213.838	208.6	32.85		0
100 nM	11	3903.005	-11.718	5647.91	218.3	30.956		11
300 nM	9	3861.187	-11.406	7060.15	228.4	30.031		0
1 $\mu\text{M}$	6	4106.676	-12.84	10118.38	247.7	29.191		0
3 $\mu\text{M}$	6	4313.482	-14.121	9467.9	283.3	31.044		0
10 $\mu\text{M}$	3	1757.146	-4.332	24125	295.9	23.829		0
30 $\mu\text{M}$								0

## 4.12. Well D6

Selected Electrode: 21

Filter	Frequency [Hz]
Notch	50

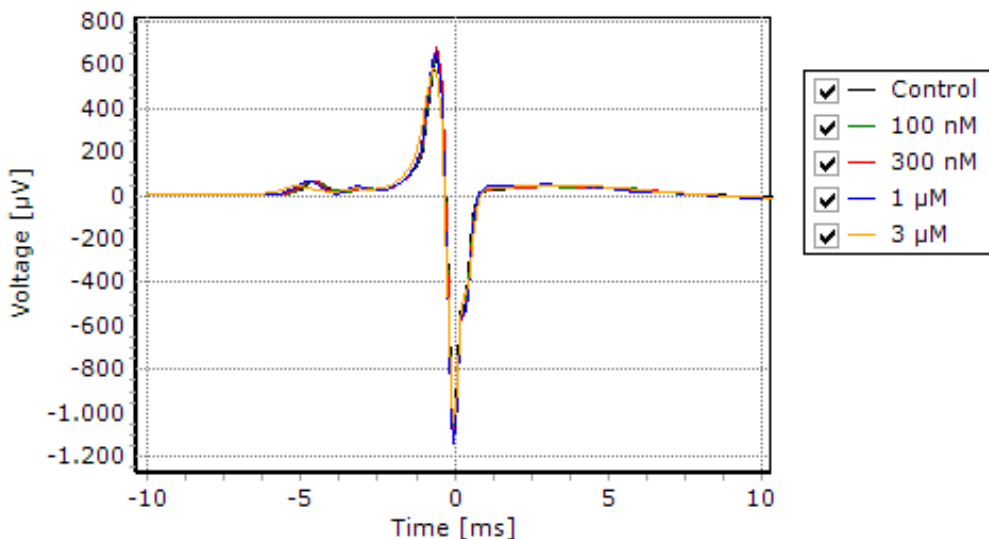


Figure 4.12.1: Overlay of Na peak averages.

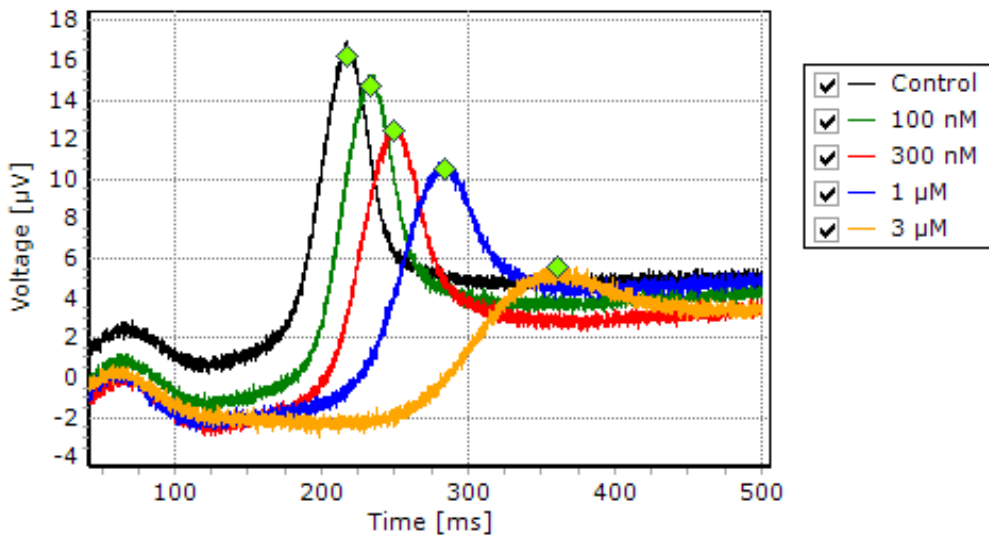


Figure 4.12.2: Overlay of averages for the T detection search interval.

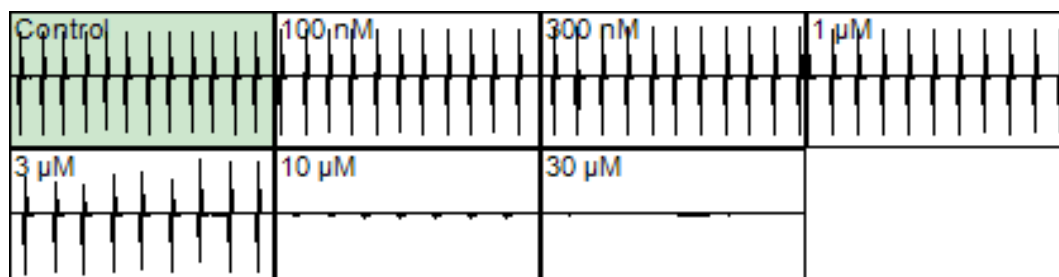


Figure 4.12.3: Overview of the last 10 seconds of raw data for each dose. Voltage range: -1225 µV - 1129 µV.

<b>Dose</b>	<b>Heart Beat Count</b>	<b>Peak-to-Peak [<math>\mu\text{V}</math>]</b>	<b>Slope [<math>\text{V/s}</math>]</b>	<b>RR Interval [ms]</b>	<b>FP Duration [ms]</b>	<b>Conduction Velocity [<math>\text{cm/s}</math>]</b>	<b>Min-Max Difference [<math>\mu\text{V}</math>]</b>	<b>Active Channels</b>
Control	74	1712.507	-6.285	800.245	218.1	154.535		6
100 nM	67	1776.872	-6.418	886.836	234.2	126.869		7
300 nM	65	1811.023	-6.464	928.408	250.4	69.568		6
1 $\mu\text{M}$	63	1800.998	-6.296	949.74	284.8	19.782		5
3 $\mu\text{M}$	55	1659.919	-5.164	1090.213	360.7	21.291		2
10 $\mu\text{M}$								0
30 $\mu\text{M}$								0