**Table 1**. Action Potential Characteristics in hearts from control and MeHg treated animals for 4 weeks. n = 8-14 animals.*p<0.05. RP, resting membrane potential; APA, action potential amplitude; $APD_{30}$, action potential duration at 30% of repolarization; $APD_{90}$, action potential duration at 90% of repolarization; Triang, action potential triangulation ($APD_{90}$-$APD_{30}$); dV/dt, maximum upstroke velocity.

| | **Basic Cycle Length Duration (ms)** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **300** | | **500** | | **800** | | **1000** | |
| | **Cntrl (14)** | **MeHg (7)** | **Cntrl (13)** | **MeHg (8)** | **Cntrl (12)** | **MeHg (9)** | **Cntrl (12)** | **MeHg (8)** |
| **RP (mV)** | -75.7 ± 0.9 | -75 ± 0.9 | -78 ± 2 | -76 ± 1.2 | -75 ± 0.7 | -75 ± 1 | -74 ± 0.7 | -76 ± 1 |
| **APA (mV)** | 90.4 ± 3.4 | 87 ± 2.4 | 89.3 ± 2.6 | 88.8 ± 1.8 | 91.3 ± 2.5 | 89 ± 1.4 | 89.8 ± 1.9 | 90.3 ± 1.3 |
| **$APD_{30}$ (ms)** | 17.6 ± 1.1 | 21.2 ± 2 | 16.9 ± 1 | 20.6 ± 2.5 | 16.3 ± 0.9 | 20.9 ± 2.6 | 15.5 ± 0.8 | 19.3 ± 2.4 |
| **$APD_{90}$ (ms)** | 56.5 ± 1.4 | 67.3 ± 5.2* | 54.4 ± 1.7 | 66.4 ± 6.6* | 52.1 ± 2.3 | 67.3 ± 6* | 51.3 ± 2 | 68.2 ± 8.5* |
| **Triang (ms)** | 38.8 ± 1.6 | 46 ± 4.1 | 37.5 ± 1.9 | 45.8 ± 4.5 | 35.8 ± 1.8 | 46.5 ± 4.1* | 35.8 ± 1.8 | 48.9 ± 6.4* |
| **dV/dt (V/ms)** | 109.2 ± 11 | 110 ± 22 | 126 ± 19 | 155 ± 42 | 111 ± 10 | 141 ± 46 | 109 ± 10 | 144 ± 47 |

**Table 2.** Biophysical characteristics of $I_{Ca\text{-}L}$ and $I_{to}$ in control and in MeHg treated animals for 4 weeks. Number of cells in parenthesis. *p < 0.05.

| | Control | MeHg |
|---|---|---|
| $\mathbf{I_{Ca\text{-}L}}$ Activation $V_h$ (mV) | -7.05 ± 1.5 (7) | -8.5 ± 2.3 (6) |
| $\mathbf{I_{Ca\text{-}L}}$ Inactivation $V_h$ (mV) | 31.5 ± 5 (7) | 30.1 ± 1.9 (6) |
| $\mathbf{I_{to}}$ Activation $V_h$ (mV) | 5.1 ± 2.9 (18) | 1.8 ± 2.4* (14) |
| $\mathbf{I_{to}}$ Inactivation $V_h$ (mV) | -44.7 ± 1.7 (12) | -49.2 ± 0.8* (13) |
| $\mathbf{I_{to}}$ $\tau_{recovery}$ (ms) | 63.6 ± 9.1 (7) | 174.2 ± 44.4* (7) |

**Table 3.** Biophysical characteristics of hKv4.3, hERG and hKv7.1/mink channels in HEK293 cells in control and in the presence of increasing concentrations of MeHg. Number of cells in parenthesis. *p < 0.05. (///) hKv7.1/mink tail currents were not detectable in the presence of 1 nM of MeHg.

| | **[MeHg] (nM)** | | | |
|---|---|---|---|---|
| | **0** | **0.01** | **0.1** | **1** |
| $I_{hKv4.3}$ Inactivation $V_h$ (mV) | -56.8 ± 1.6 (12) | -54.9 ± 1.5 (7) | -58.5 ± 1.3 (6) | -58.5 ± 1.3 (5) |
| $I_{hKv4.3}$ Recovery τ (ms) | 150.7 ± 12.9 (6) | 191.5 ± 25 (6) | 169 ± 13.9 (8) | 190 ± 22.4 (6) |
| $I_{hERG}$ Activation$V_h$ (mV) | -3.1 ± 2.1 (8) | 3.9 ± 1.1 (9) | 0.5 ± 1.4 (12) | -6.7 ± 1.8 (5) |
| $I_{hERG}$ Reversal V (mV) | -66.5 ± 2.3 (10) | -60.6 ± 2.2 (14) | -61.1 ± 1.1 (14) | -68.5 ± 3.3 (5) |
| $I_{hK7.1/minK}$ Activation $V_h$ (mV) | 10.2 ± 2 (6) | 16.9 ± 2.2 (6) | 26.9 ± 6.1 (7)* | /// |