Single-cell evaluation of red blood cell bio-mechanical and nanostructural alterations upon chemically induced oxidative stress

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Table S1. Statistics related to the micropipette analyses.

Fig. S2. RBCs treated with higher H_2O_2 concentrations resulted in increased deformability. Data is represented as median \pm range.

Table S3. Statistical assessment of the AFM images to estimate spectrin length.

Supplemental: S1

Table S1.

Statistical assessment of the Micropipette data: Deformability

| H ₂ O ₂ | Control | 0.3mM | 1mM | 3mM | |
|--|---|---|--|--|--|
| 11202 | | - | | | |
| Mean (µN/m) | 8.888 | 7.515 | 6.613 | 6.054 | |
| Standard Deviation | 1.702 | 1.73 | 1.336 | 0.8793 | |
| Standard Error of Mean | 0.3805 | 0.3868 | 0.2987 | 0.1966 | |
| | | | | | |
| Diamide | Control | 0.3mM | 1mM | 3mM | |
| | | • | | | |
| Mean (µN/m) | 7.107 | 9.615 | 11.83 | 14.92 | |
| Standard Deviation | 1.76 | 1.319 | 2.847 | 5.045 | |
| Standard Error of Mean | 0.4546 | 0.3406 | 0.7352 | 1.303 | |
| | | • | | | |
| Drimoguino | Control | 0.2mM | 1mM | 3mM | |
| Drimoquino | Control | 0.311111 | 1111141 | JIIIVI | |
| Primaquine | Control | 0.311111 | | 51114 | |
| Primaquine Mean (µN/m) | 4.19 | 5.266 | 6.503 | 10.94 | |
| Primaquine Mean (µN/m) Standard Deviation | 4.19 0.5098 | 5.266 1.662 | 6.503 1.688 | 10.94 3.579 | |
| Primaquine Mean (µN/m) Standard Deviation Standard Error of Mean | 4.19 0.5098 0.114 | 5.266 1.662 0.3717 | 6.503 1.688 0.3774 | 10.94 3.579 0.8003 | |
| Primaquine Mean (µN/m) Standard Deviation Standard Error of Mean | 4.19 0.5098 0.114 | 5.266 1.662 0.3717 | 6.503 1.688 0.3774 | 10.94 3.579 0.8003 | |
| Primaquine Mean (µN/m) Standard Deviation Standard Error of Mean | 4.19 0.5098 0.114 | 5.266 1.662 0.3717 0.1mM | 6.503 1.688 0.3774 | 10.94 3.579 0.8003 1mM | |
| Primaquine Mean (µN/m) Standard Deviation Standard Error of Mean CumOOH | 4.19 0.5098 0.114 | 5.266 1.662 0.3717 0.1mM | 6.503 1.688 0.3774 0.3mM | 10.94 3.579 0.8003 1mM | |
| Primaquine Mean (µN/m) Standard Deviation Standard Error of Mean CumOOH Mean (µN/m) | 4.19 0.5098 0.114 Control 5.779 | 5.266 1.662 0.3717 0.1mM 6.949 | 6.503 1.688 0.3774 0.3mM | 10.94 3.579 0.8003 1mM | |
| PrimaquineMean (μN/m)Standard DeviationStandard Error of MeanCumOOHMean (μN/m)Standard Deviation | 4.19 0.5098 0.114 Control 5.779 1.375 | 0.3 mM 5.266 1.662 0.3717 0.1mM 6.949 1.712 | 6.503 1.688 0.3774 0.3mM 13.2 4.623 | 10.94 3.579 0.8003 1mM | |
| PrimaquineMean (μN/m)Standard DeviationStandard Error of MeanCumOOHMean (μN/m)Standard DeviationStandard Error of Mean | 4.19 0.5098 0.114 Control 5.779 1.375 0.355 | 5 .266 1.662 0.3717 0.1mM 6.949 1.712 0.442 | 6.503 1.688 0.3774 0.3mM 13.2 4.623 1.194 | 10.94 3.579 0.8003 1mM - - - | |

| H ₂ O ₂ | Control | 3mM | 10mM | 30mM |
|-------------------------------|---------|--------|--------|--------|
| 11202 | | | | |
| Mean (µN/m) | 7.522 | 4.961 | 3.722 | 3.297 |
| Standard Deviation | 2.199 | 2.095 | 1.396 | 0.8685 |
| Standard Error of Mean | 0.5678 | 0.5409 | 0.3605 | 0.2242 |

Supplemental: S2



Supplemental: S3

Table S3.Statistical assessment of the AFM data: spectrin length

| | Control | H_2O_2 | Diamide | Primaquine |
|-----------------------|---------|----------|---------|------------|
| Mean (nm) | 34.5 | 32 | 22.7 | 23.2 |
| Standard Deviation | 4.47 | 3.86 | 3.41 | 3.48 |
| Standar Error of Mean | 0.4682 | 0.3856 | 0.3378 | 0.3727 |
| Number of values | 91 | 100 | 102 | 87 |