Table 1. Evaluation of the intrinsic parameters of the epileptiform activity depicted by organotypic rhinal-hippocampal slices perfused under depolarizing conditions (8.5mM of KCl in aCSF) or non-depolarizing conditions (Neurobasal A medium), in the absence or presence of MRS5474 (250nM).

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| --- | --- | --- | --- | --- | --- | --- |
| **Parameter** | **Number of bursts** | | **Frequency of spikes within burst (Hz)** | | **Amplitude of spikes within burst (mV)** | |
| **Analysis time (min)** | **50-60** | **80-90** | **50-60** | **80-90** | **50-60** | **80-90** |
| **Depolarization Conditions** | | | | | | |
| **No Drug** (n=11) | 1.78±0.61 | 2.61±1.17 | 1.02±0.11 | 0.97±0.15 | 0.96±0.08 | 0.94±0.07 |
| **MRS5474** (n=11) | 0.64±0.15 | **0.59±0.21\*** | **0.74±0.08\*** | **0.65±0.04\*\*** | 0.99±0.14 | 0.98±0.15 |
| **Non-depolarization Conditions** | | | | | | |
| **No Drug** (n=7) | 2.36±0.66 | 1.68±0.63 | 1.01±0.21 | 0.86±0.17 | 0.95±0.16 | 0.96±0.13 |
| **MRS5474** (n=7) | 1.01±0.27 | 0.72±0.26 | 1.73±0.65 | 0.91±0.11 | 1.05±0.10 | 0.86±0.05 |

No Drug: refers to data from slices not treated with any drug. MRS5474: refers to data from slices in the presence of MRS5474 (250nM) for 30 minutes before first analysis time (50–60 minutes). In all cases and for all parameters, the analysis at time 10–20 (baseline, pre-drug condition) in each slice was normalised to 1. Statistically significant effects of MRS5474 when compared with pre-drug condition in the same slices are highlighted in red; \*P<0.05, \*\*P<0.01 (one-way ANOVA followed by Dunnett’s multiple comparisons test). When both time and drug condition were simultaneously analyzed as independent variables, an effect of MRS5474 upon number of bursts also emerged (highlighted in blue, \*P<0.05, comparison between the same time frame within slices, in the absence or presence of the drug; two-way ANOVA followed by Sidak’s multiple comparison test), while the effect of MRS5474 vs baseline in the frequency of bursts still hold significance. Note that data for the analysis of the amplitude and frequency of spikes within the burst did not include values with zero bursts (i.e. fully blocked by MRS5474), since the frequency and the amplitude of spikes were not independent from the burst occurrence itself. Data from those experiments are included in Figure 3, where individual data points are represented.