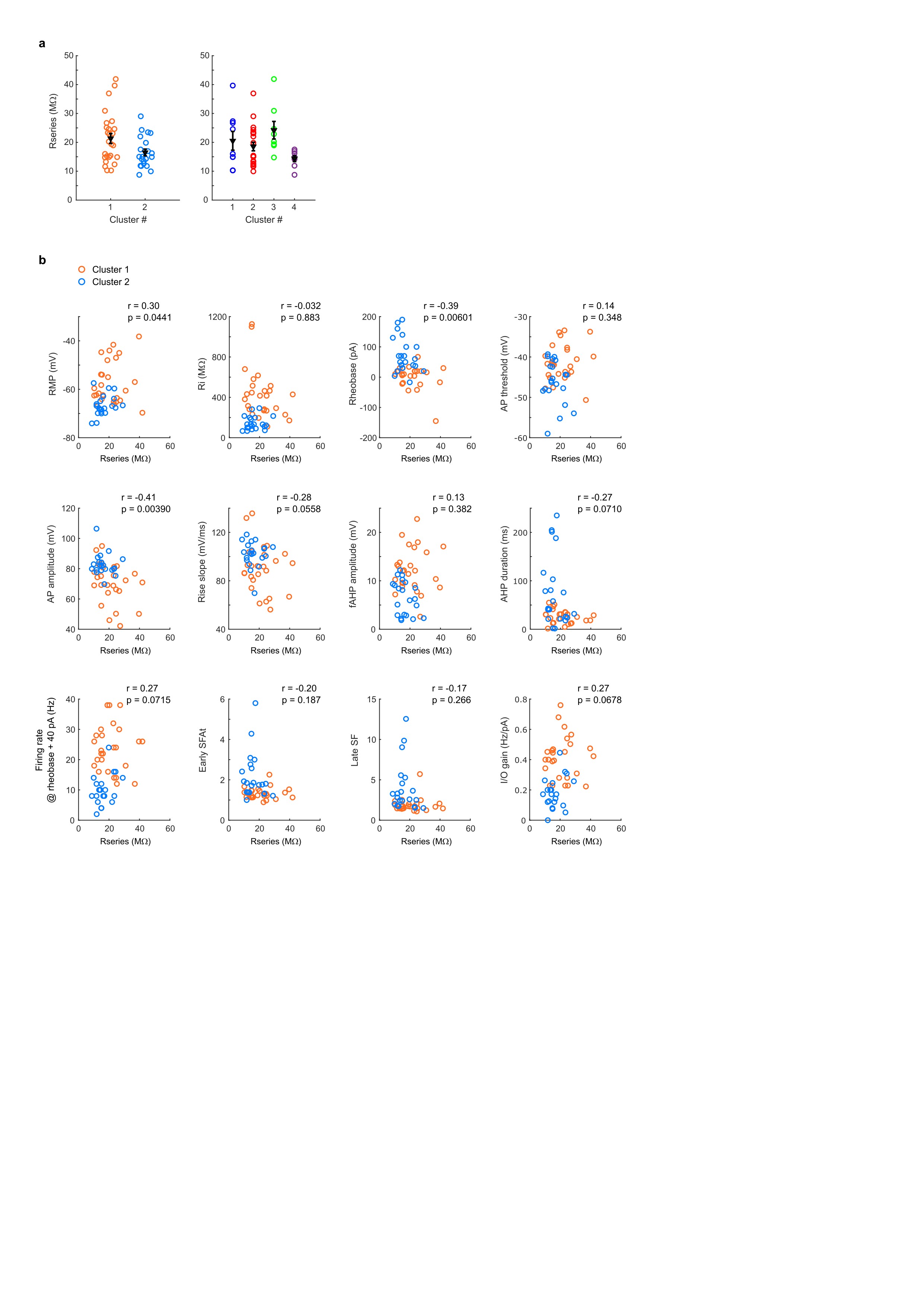
Intracellular properties of deep-layer pyramidal neurons in Frontal Eye Field of macaque monkeys

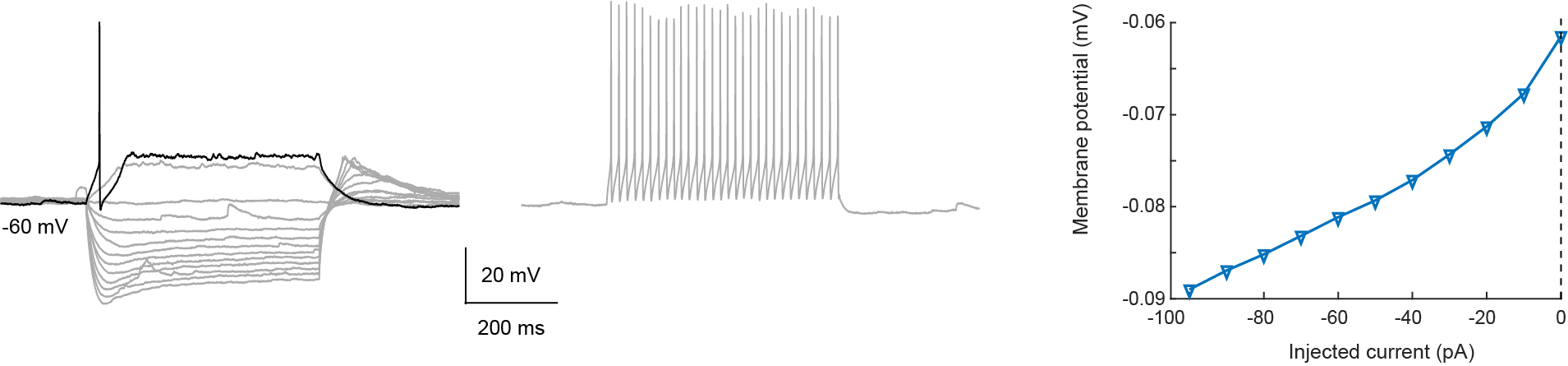
Piette C1, Vandecasteele M1, Bosch-Bouju C1, Goubard V1, Paillé V1, Cui Y1, Mendes A1, Perez S1, Valtcheva S1, Xu H1, Pouget P2\* and Venance L1\*

**Supplementary Material**



**Supplementary Figure 1: Rseries do not segregate with cluster identity.**

**a.** Rseries scatterplots of neurons in each cluster, with mean and SEM indicated in black. For both two (left) or four (right) clusters, the difference between groups is non-significant (left: Mann-Whitney test, p=0.0555; right: Kruskal-Wallis test, p=0.101). **b.** Rseries scatterplots with each parameter of the PCA that is significantly different between the two clusters. The correlation coefficient and p-value (Pearson’s correlation), calculated with all neurons (clusters pooled) is indicated above each graph.

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**Supplementary Figure 2: Fast spiking interneurons recorded in FEF Layer 5.**

Electrophysiological response of a fast spiking interneuron to current step injections (left: from -100 pA, 10 pA-steps up to rheobase; center: +40 pA above rheobase; right: I-V curve).

**Supplementary Table 1:**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| # Id | Cluster | PCA/General Properties (B=biocytin) | Zap analysis | Spontaneous activity | EPSC  (P=Pharma  cology) | EPSP | I/O gain | EPSP correlations | Paired pulse | Rseries |
| Fig1b-e,  2a-b, 3a-b | Fig 2c-g | Fig 3c | Fig 4a-b | Fig 4c | Fig 5a | Fig 5b | Fig 6 | Supp Fig 1 |
| 1 | 1 | x |  | x | x (P) |  |  |  |  | x |
| 2 | 1 | x |  |  | x |  |  |  |  | x |
| 3 | 1 | x |  |  | x (P) |  |  |  |  | x |
| 4 | 1 | x |  |  | x (P) |  |  |  |  | x |
| 5 | 1 | x |  | x |  |  |  |  |  | x |
| 6 | 1 | x |  | x | x (P) | x | x | x |  | x |
| 7 | 2 | x |  | x |  |  |  |  |  | x |
| 8 | 2 | x |  |  | x (P) | x |  |  |  | x |
| 9 | 2 | x |  |  |  |  |  |  |  | x |
| 10 | 1 | x |  |  | x (P) |  |  |  |  | x |
| 11 | 1 | x (B) | x |  |  |  |  |  |  | x |
| 12 | 1 | x | x | x | x | x | x | x | x | x |
| 13 | 1 | x (B) | x | x | x | x |  |  |  | x |
| 14 | 1 | x | x | x | x |  |  |  |  | x |
| 15 | 1 | x (B) | x |  | x (P) | x |  | x |  | x |
| 16 | 2 | x (B) | x | x | x | x |  | x |  | x |
| 17 | 1 | x |  |  |  |  |  |  |  | x |
| 18 | 1 | x | x |  |  | x | x | x | x | x |
| 19 | 1 | x (B) | x |  | x | x | x | x | x | x |
| 20 | 1 | x | x | x | x | x | x | x |  | x |
| 21 | 2 | x | x | x | x | x | x | x | x | x |
| 22 | 1 | x | x | x | x |  |  |  | x | x |
| 23 | 1 | x | x | x |  |  |  |  |  | x |
| 24 | 1 | x | x | x | x | x |  | x | x | x |
| 25 | 2 | x | x | x | x | x | x | x | x | x |
| 26 | 2 | x |  | x | x | x | x | x | x | x |
| 27 | 2 | x |  | x |  |  |  |  |  | x |
| 28 | 1 | x | x | x | x | x |  | x | x | x |
| 29 | 2 | x | x | x | x |  |  |  | x | x |
| 30 | 1 | x | x | x | x | x | x | x | x | x |
| 31 | 2 | x | x | x | x | x | x | x | x | x |
| 32 | 2 | x | x | x | x | x |  | x | x | x |
| 33 | 2 | x | x | x | x | x |  | x | x | x |
| 34 | 2 | x | x | x | x | x | x | x | x | x |
| 35 | 2 | x | x | x | x | x |  |  | x | x |
| 36 | 2 | x | x | x | x | x | x | x | x | x |
| 37 | 2 | x | x | x | x | x | x | x | x | x |
| 38 | 2 | x |  |  |  |  |  |  |  |  |
| 39 | 1 | x | x | x | x |  | x | x |  | x |
| 40 | 2 | x | x | x | x | x | x | x | x | x |
| 41 | 2 | x | x | x |  | x |  | x |  |  |
| 42 | 2 | x | x | x | x | x |  | x | x | x |
| 43 | 2 | x | x | x | x | x | x | x | x | x |
| 44 | 1 | x | x | x |  |  |  |  |  | x |
| 45 | 2 | x | x | x |  |  |  |  |  | x |
| 46 | 2 | x |  |  |  |  |  |  |  |  |
| 47 | 1 | x | x | x |  |  |  |  |  | x |
| 48 | 2 | x | x | x |  |  |  |  |  | x |
| 49 | 1 | x | x | x |  |  |  |  |  | x |
| 50 | 1 | x | x |  | x | x | x | x | x | x |
| nClu1 | 26 | 26 | 18 | 16 | 18 | 11 | 8 | 10 | 8 | 26 |
| nClu2 | 24 | 24 | 17 | 20 | 16 | 16 | 9 | 14 | 14 | 21 |

**Supplementary Table 2: Electrophysiological properties of FS interneurons**

|  |  |
| --- | --- |
| Mean ± SEM | FS interneurons (n=3) |
| Resting membrane potential (mV) | -50 ± 4 |
| Membrane resistance (MΩ) | 465 ± 206 |
| Membrane time constant (ms) | 18 ± 8 |
| Sag Index (%) | 27 ± 4 |
| Rebound Index (%) | 46 ± 58 |
| Rheobase (pA) | 35 ± 27 |
| Delay to first spike (ms) | 31 ± 11 |
| AP threshold (mV) | -35 ± 10 |
| AP amplitude (mV) | 39.1 ± 2.5 |
| AP duration at half-width (ms) | 0.43 ± 0.12 |
| AP rise time (ms) | 0.58 ± 0.08 |
| AP rise slope (mV.ms-1) | 68.7 ± 6.4 |
| AP decay time (ms) | 0.33 ± 0.13 |
| AP decay slope (mV.ms-1) | 151 ± 40 |
| AP rise/decay slope ratio | 0.52 ± 0.13 |
| AHP amplitude (mV) | 26.1 ± 3.8 |
| fAHP amplitude (mV) | 26.1 ± 3.8 |
| ADP amplitude (mV) | 0 |
| mAHP amplitude (mV) | 0 |
| AHP duration (ms) | 0.92 ± 0.37 |
| ISI 1-2 (ms) | 34 ± 11 |
| Firing rate at +40 pA from rheobase (Hz) | 32 ± 16 |
| Early spike frequency adaptation | 1.06 ± 0.06 |
| Late spike frequency adaptation | 2.2 ± 1.0 |
| I/O gain (Hz.pA-1) | 1.72 ± 0.28 |
| Spontaneous frequency (Hz) | 0.044 ± 0.44 |