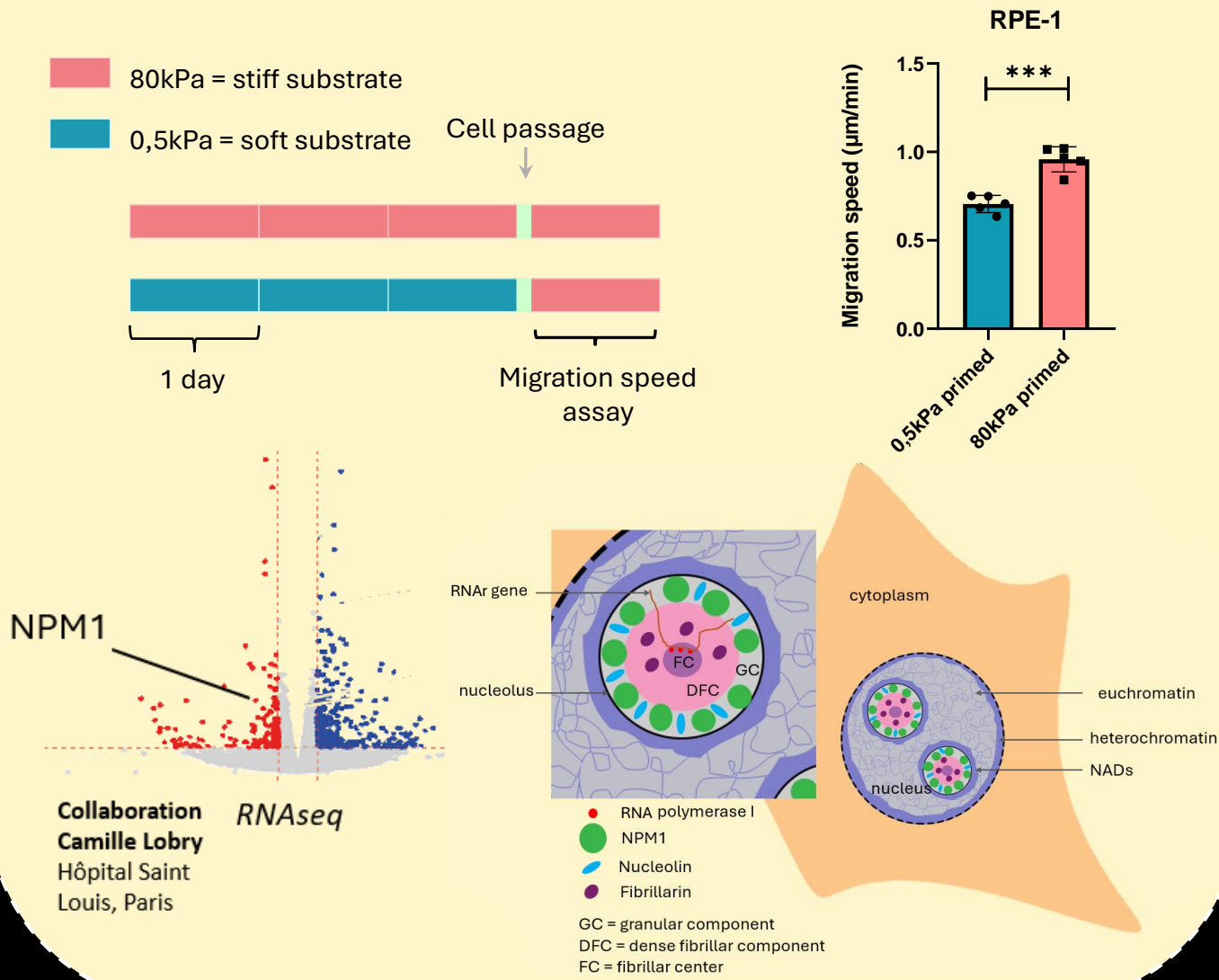


Nucleoli are involved in the establishment of the Mechanical Memory of cell migration

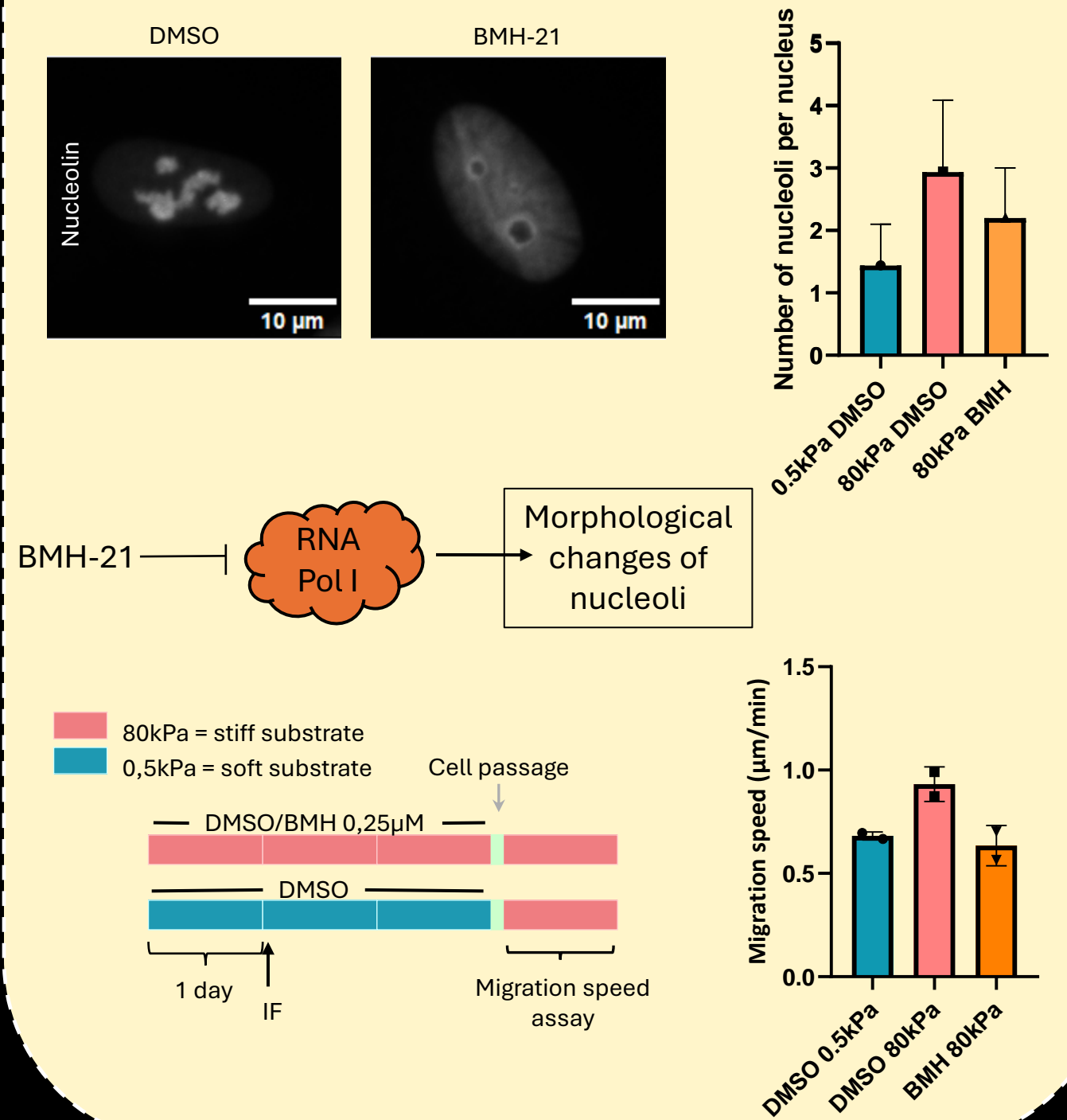
Léa Mayeur, Jean-Philippe Morretton, Nadia Elkhatib*, Guillaume Montagnac*

Cells are mechanosensitive and migrate slower on soft substrates than on stiff substrates. In addition, it has been shown that cells retain information from their past environment and adapt their phenotype accordingly, a phenomenon known as **Mechanical Memory**. However, the underlying nuclear mechanisms remain poorly understood. Transcriptomic analysis revealed an overexpression of the nucleolar protein NPM1 on stiff substrates. We sought to determine whether nucleoli play a role in the mechanical memory of cell migration. Here, we show that the nucleolar organization of the cell influences its mechanical memory, potentially through the regulation of heterochromatin distribution.

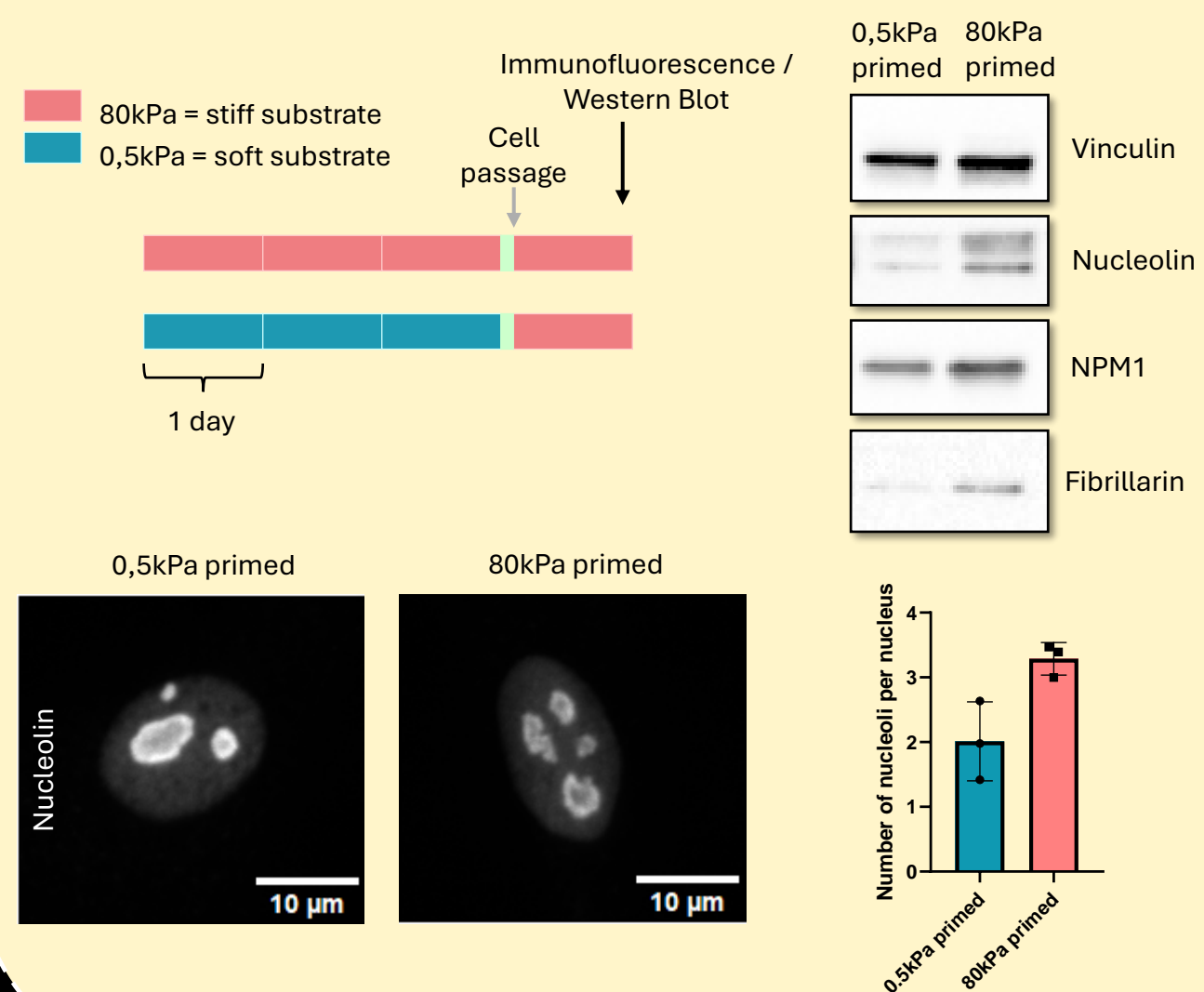
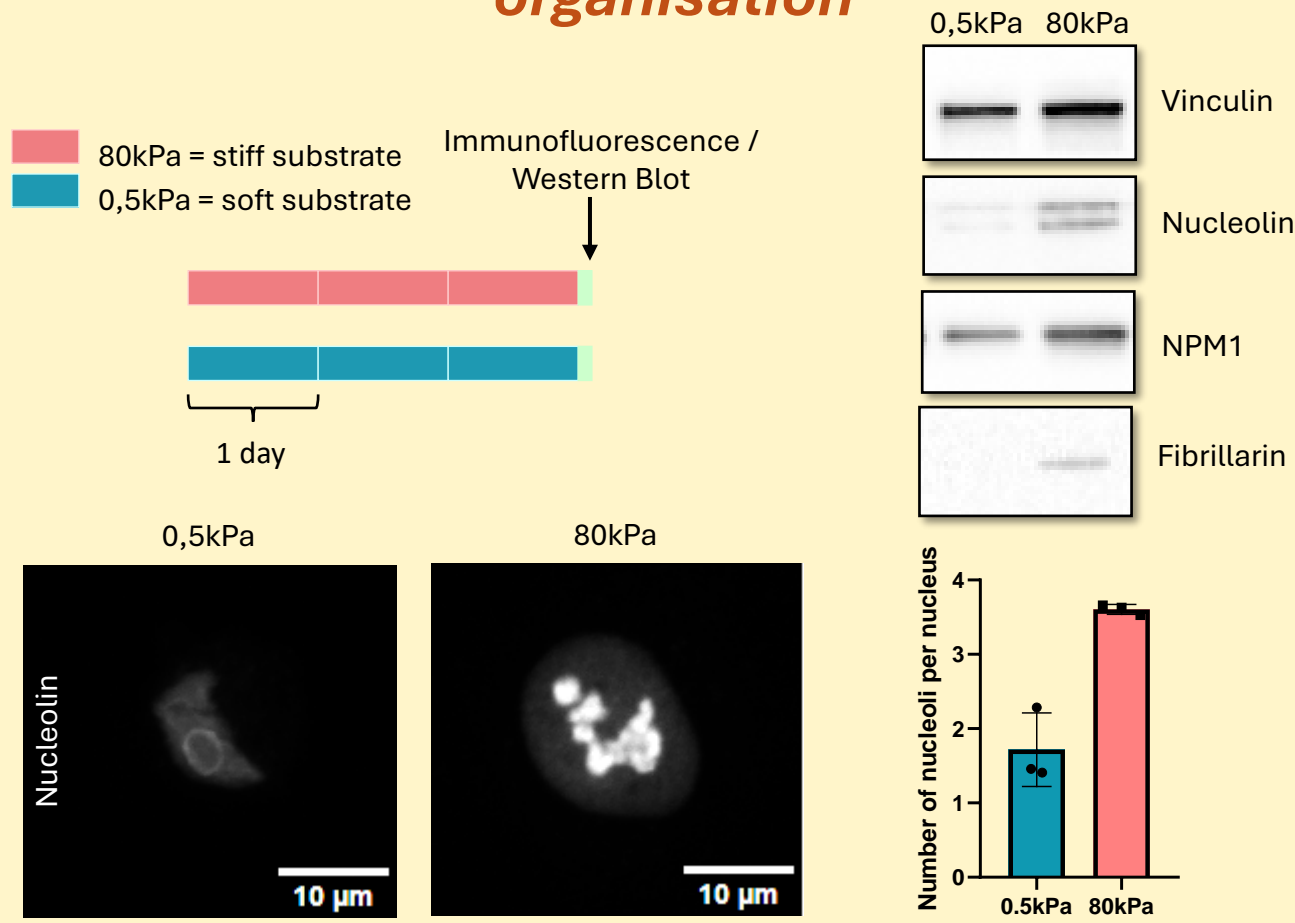
I. Identification of NPM1 as a potential actor involved in the mechanical memory



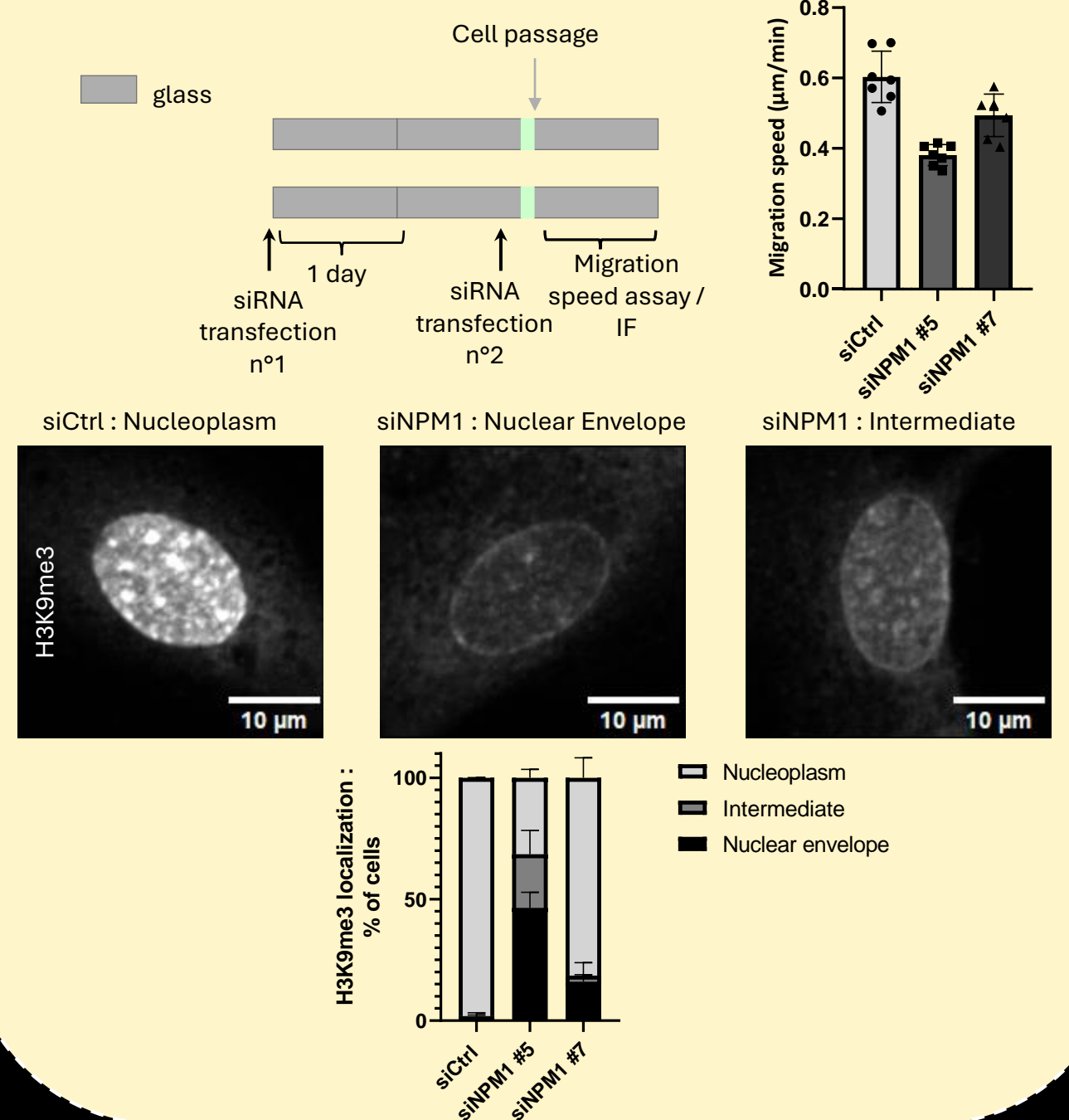
III. Disrupting nucleolar organisation leads to the loss of mechanical memory



II. Cells have a memory of nucleolar organisation



IV. NPM1 seems to control cell migration by organizing heterochromatin



Mechanical memory =

Nucleolar organisation maintained \rightarrow Heterochromatin distribution \rightarrow Cellular migration

Searching for a post doctoral position ! Contact me

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