S1 Appendix. Two-dimensional cell tissue. We have modelled a tissue as a 1-D chain of cells. Since cell tissues are not 1-D objects, one might wonder whether the results are qualitatively similar for 2-D or 3-D tissues. To answer that question, we analyzed the case of a 2-D tissue. Such case could represent the situation of an in vitro cell population. Assuming that one cell in the middle of the tissue starts to produce an abnormally high quantity of miRNA, the tissue has a central symmetry around Cell 0 and the diffusive term in the miRNA evolution equation can be written in polar coordinates as a function of the distance to Cell 0, \( r \):

\[
D \nabla^2 \text{miRNA} = D \left( \frac{\partial^2 \text{miRNA}}{\partial r^2} + \frac{1}{r} \frac{\partial \text{miRNA}}{\partial r} \right)
\]

Looking at the stationary protein concentration as a function of the transport coefficient in several cells of the tissue, we find qualitatively the same results as in the 1-D system (see Fig. S1 compared to Fig. 2). As shown in Fig. S1 A, the protein concentration increases in Cell 0 when \( D \) increases. In cells far away from Cell 0, the protein concentration decreases when \( D \) increases. In intermediate cells, we find, as in the one-dimensional tissue, that the protein concentration goes through a minimum when \( D \) increases. For large values of \( D \), the protein concentration is homogeneous in the tissue and is above the threshold. However, in a 2-D tissue, miRNAs produced by Cell 0 are diluted in more cells than in the 1-D case. The synthesis rate of miRNA in Cell 0 has therefore to be much higher in the 2-D system than in the 1-D one to get the same dynamics in the tissue. Fig. S1 B, C and D show the protein concentration in a 2-D cell tissue for three different values of \( D \). The green color corresponds to the range of action as defined in the text and it shows a maximum for intermediate values of \( D \).

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**Fig. S1 Stationary protein concentration in a 2-D cell tissue** (A) Stationary protein concentration as a function of the transport coefficient in different cells of the tissue. Protein concentration in a 2-D cell tissue for \( D = 10^{-4} \text{ mm}^2 \cdot \text{h}^{-1} \) (B), \( D = 10^{-3} \text{ mm}^2 \cdot \text{h}^{-1} \) (C) and \( D = 10^{-2} \text{ mm}^2 \cdot \text{h}^{-1} \) (D). \( v_{\text{smiRNA}} = 200 \text{ nM} \cdot \text{h}^{-1} \) in Cell 0 and 0.1 nM· h⁻¹ in other cells.