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*Supporting information*

# Exploiting the Features of Short Peptides to Recognize Specific Cell Surface Markers

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## S1: Western Blot

A Western Blot assay was performed to verify CD44 expression on MSCs compared to the human hepatocarcinoma (HepG2) cell line. The anti-GAPDH, an ubiquitary protein, was used as the loading control. From the blots shown in **Figure S1a**, anti-CD44 shows to react with the markers on the hBM-MSCs and not on the HepG2. Furthermore, the detection of the GAPDH made possible the quantification of these expressions by calculating the ratio of markers blot *vs* GAPDH blot (**Figure S1b**), which confirmed the expression of CD44 on the cellular surface.

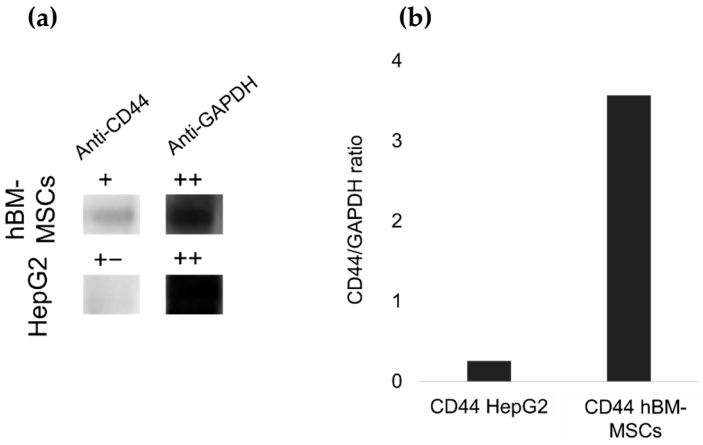


**Figure S1. a)** Expression of CD44 and GAPDH (control) of hBM-MSCs compared to HepG2 cell line. **b)** Quantification of CD44 in HepG2 and hBM-MSCs with GAPDH expression.

**S2: Viability assay**

The colorimetric viability assay was performed using CCK-8 kit, containing WST-8, to evaluate hBM-MSCs cell viability after exposition to DTYCF and PNHSE at different concentrations (0.1, 0.4, 1.5, 6, 25 and 100 μM). In view of the potential rapid "diagnostic" application of these peptides, we measured the toxicity at 24 h. After exposure to the different concentrations of peptides, analysis of cell viability after 24 h shows that cell viability is not affected by the peptides even at the highest concentration (100 μM) (**Figure S2**).

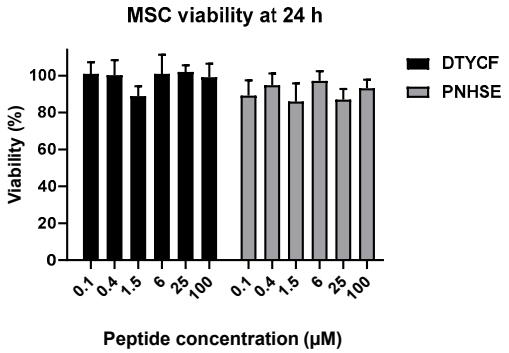


**Figure S2.** Histogram graph showing the percentage of the cell viability at 24 h after the exposition of different concentrations of peptides.