Electronic Supplementary Material (ESI) for Lab on a Chip.

OncomiR detection in circulating body fluids: a PDMS microdevice perspective

Cristina Potrich, Valentina Vaghi, Lorenzo Lunelli, Laura Pasquardini, Gaia Cecilia, Santini, Chiara Ottone, Marzia Quaglio, Matteo Cocuzza, Candido Fabrizio Pirri, Manuela Ferracin, Massimo Negrini, Paola Tiberio, Veronica De Sanctis, Roberto Bertorelli, and Cecilia Pederzolli

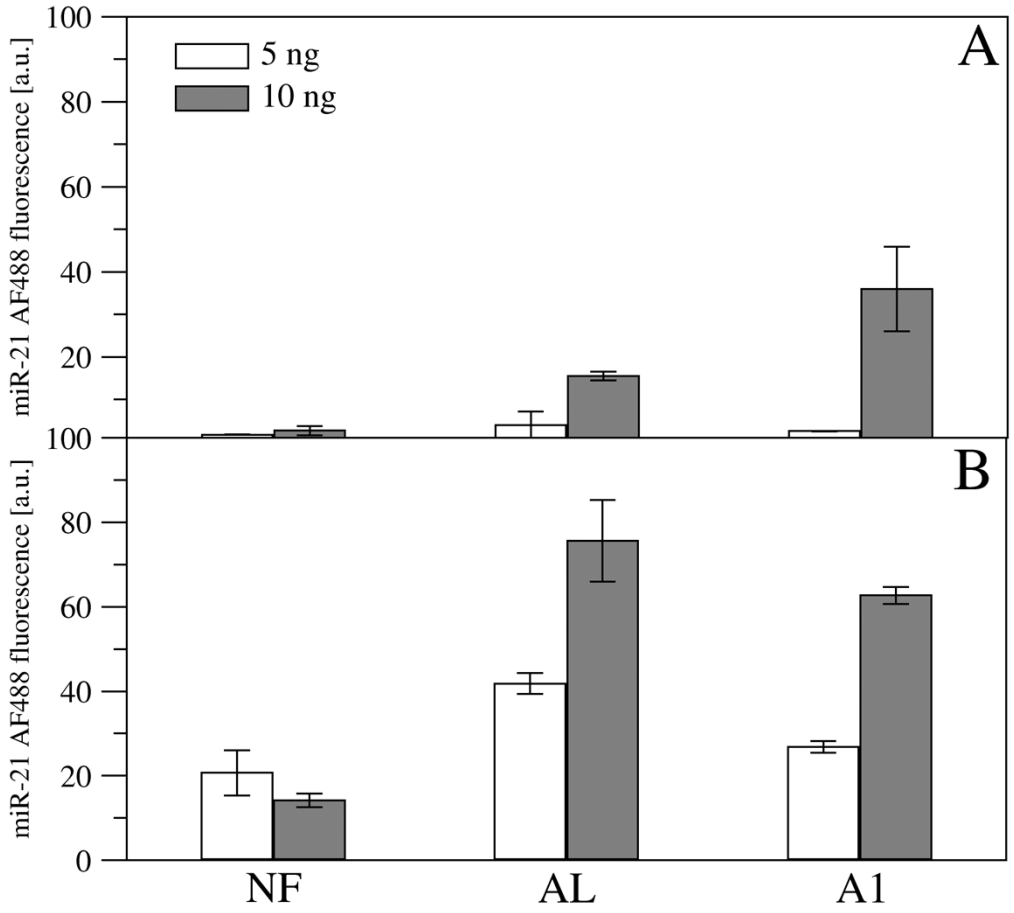

Figure S1 Fluorescence of synthetic miR-21-Alexa488 adsorbed on the upper chip surface (A) or on the bottom chip surface (B). Two different starting amounts of miR were incubated in the microdevice, i.e. 5 (white bars) and 10 ng (grey bars). NF: non functionalized; AL: mixture of 0.1% APTES and 0.9% long PEG-silane; A1: 1% APTES. Data are means of at least three different chip regions. Images were acquired with a confocal microscope (Section 2.3). The adsorption of miR is predominant on the bottom surface.

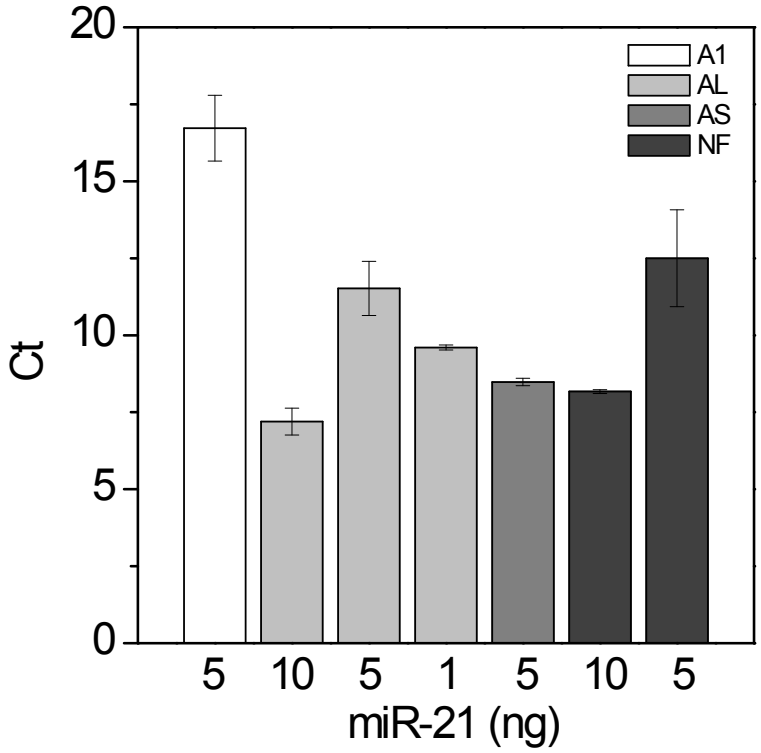

Figure S2 RT-qPCR yield obtained from the incubation of different starting miR-21 amounts on the differently functionalized microdevice. Ct: threshold cycles measured via RT-qPCR of cDNA produced by on-chip reverse transcription of adsorbed miR-21. Data are means of at least 3 independent measures (purification and reverse transcription performed in three independent microdevices), and every cDNA amplified in triplicate. The Ct value is inversely proportional to the initial template amount and therefore to the PCR yield.

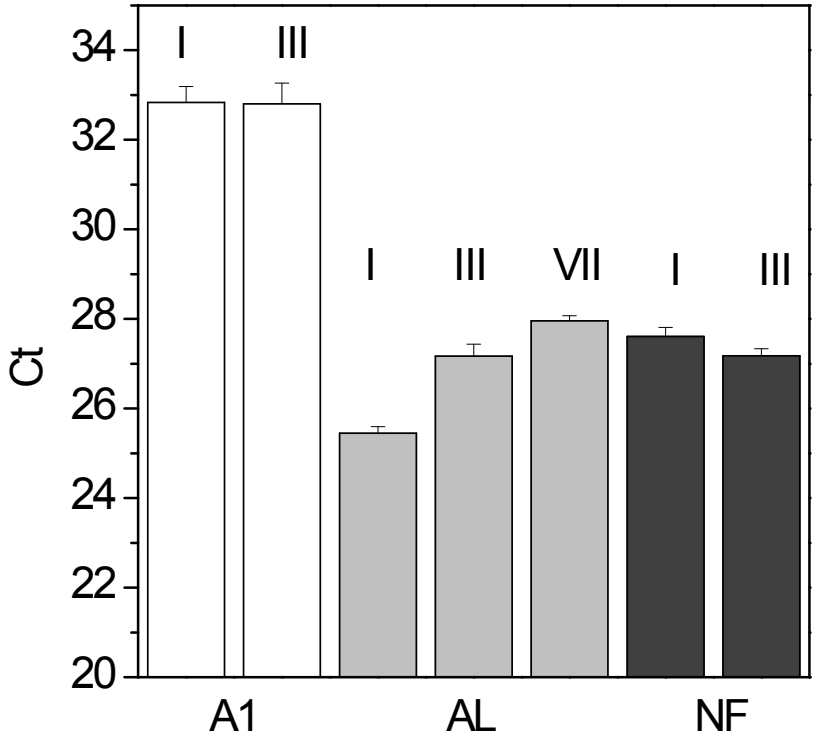

Figure S3 Effect on PCR yield of the surface when more incubation steps of the cell culture supernatant mixed with the lysis buffer APL1 are subsequently performed on the same PDMS chip functionalized with 1% APTES (A1, white bars) or 0.1% APTES/0.9% long PEG (AL, light grey bars) or not functionalized (NF, dark grey bars). Bars marked with "I" refer to only one step of incubation, while "III" means three subsequent steps of incubation and "VII" seven subsequent steps. Data are means of at least two chips used for purification and reverse transcription, while every cDNA was amplified in triplicate. Best miRNAs capture is obtained with one-step incubation.