Supporting information:

Single-Step Label Free Hepatitis B Virus Detection by Piezoelectric Biosensor

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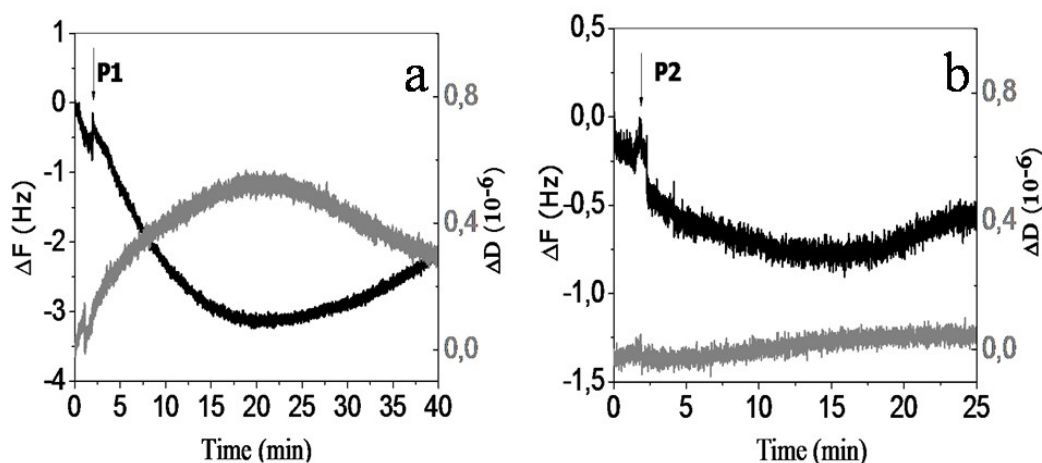[c] Clonit Srl,   Via Bernardo Quaranta 57 20139 Milano MI, Italy

Figure SI 1. QCM-D frequency (black curves) and dissipation curves (grey curves) versus time of ssDNA probe (P1) (a) and P2 (b) assembled onto gold surface at concentration of 0.08 μM and then rinsed with H$_2$O.
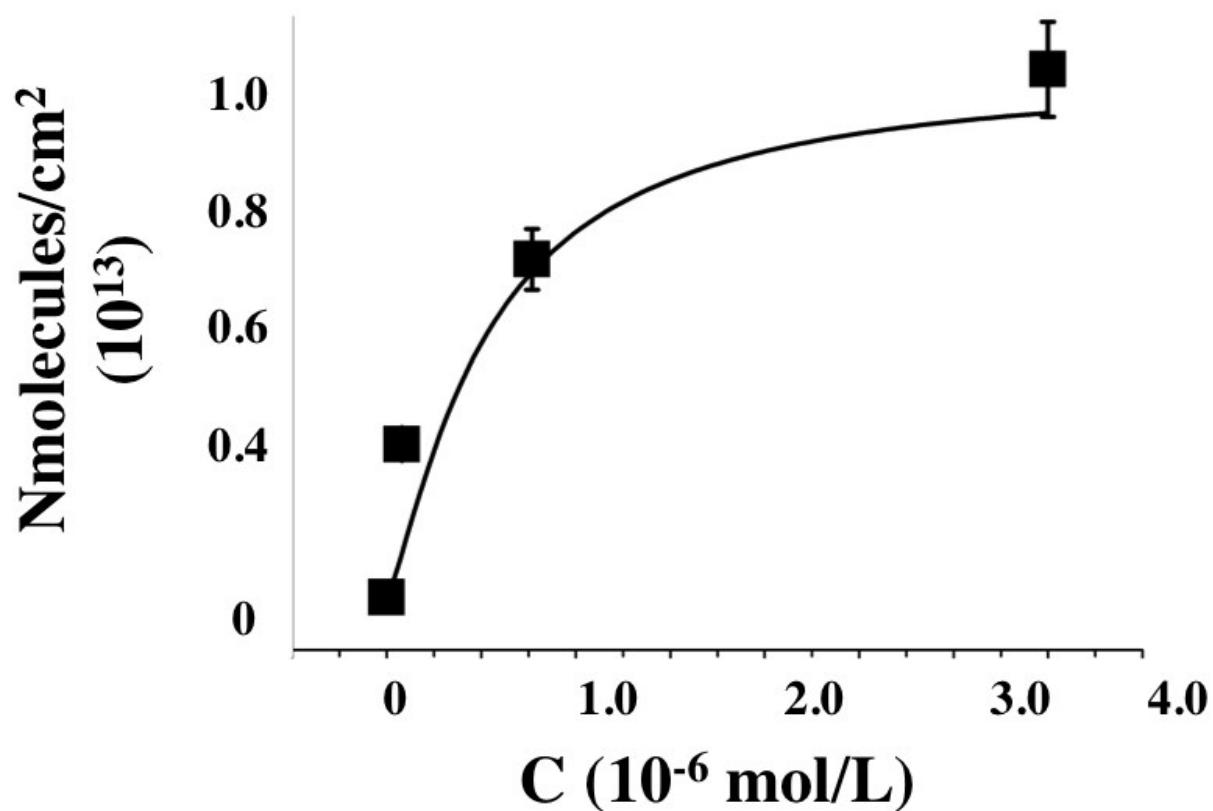
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Figure SI 2. Surface coverage (Nmolecules/cm^2) versus concentration (C) of ssDNA probe solution (P2). The isotherm was fitted by using a Langmuir adsorption model. Langmuir adsorption equilibrium coefficient (K) of 4.0x105 M^{-1} was obtained from the fit. The Langmuir gave the best fit with R^2 values equal to 0.97.
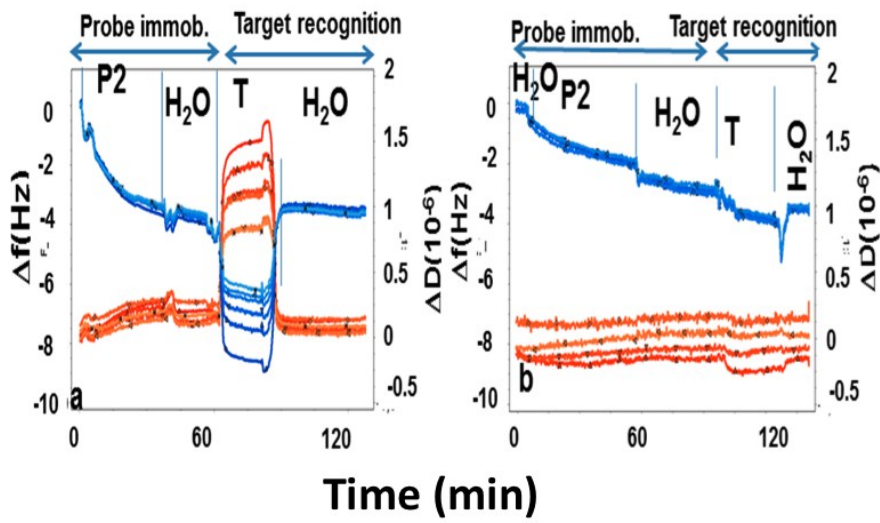
Figure SI 3. QCM-D frequency (left y-axis) and dissipation (right y-axis) curves versus time (x-axis) for the target recognition step (T-clone), where the probe ssDNA (P2) solution at concentration 7.7 μM (a), 0.8μM (b) was exchanged with H_2O before and after with the specific target consisting on HBV-clone (T) and then rinsed with H_2O. For the P2-adsorbed surfaces, the best surface probe density T-clone recognition resulted the same than for P1ss-DNA species, i.e., about 4.0 x10^{12} molecules/cm^2, yielding a genome T-clone retained mass of 42 ng/cm^2.
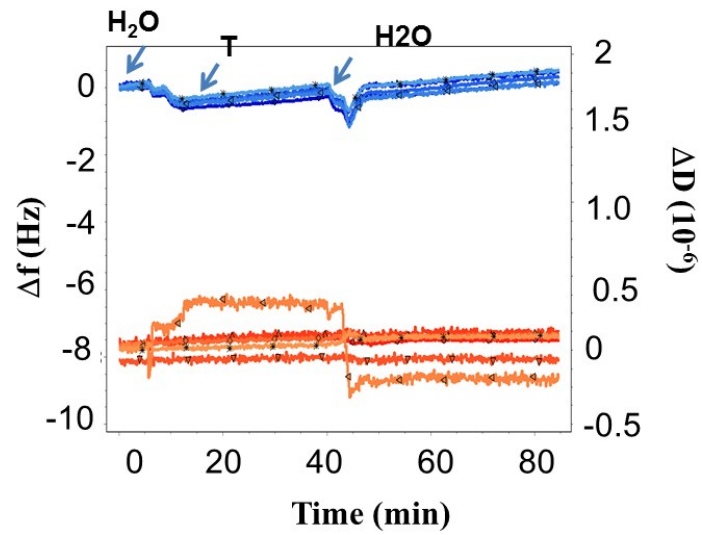
Figure SI 4. QCM-D Δf (left y axis) and ΔD (right y axis) curves versus time (x axis) of the specific genomic target (T-clone) with gold surface. It is noteworthy to stress that specific T-clones were not adsorbed in any case, indicating that specific recognition events occurred.