Supplementary Materials

Scanning probe lithography based highly sensitive and selective detection of unamplified genomic DNA of *Ganoderma boninense*

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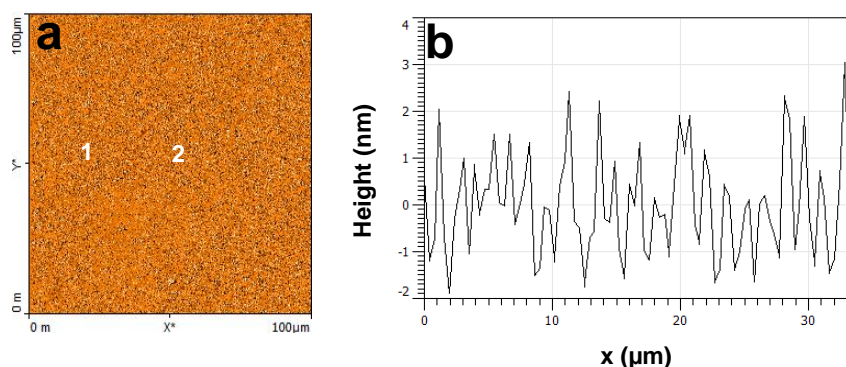
Supplementary Figure 1. (a) Representative AFM topography image of a substrate patterned with reporter DNA dissolved in DMF/aqueous solution (ink **1**), (b) representative corresponding cross-section profile along the line between points 1 and 2 marked in (a).

Number of copies of genomic DNA in the sample

The estimated number of copies of the target gene were calculated in the following manner.

Given:

Avogadro's number, $N_A = 6.022 \times 10^{23}$ mol^{-1}

Average molecular weight of 1 bp (as sodium salt) = 650 Da

Number of base pairs in 1 copy of *G. boninense* genome[1], $BP_{genome} = 63.03 \times 10^6$ bp

Mass of genomic DNA in sample, $m_{sample} = 400$ ng $= 4.0 \times 10^{-7}$ g

Therefore:

Molecular weight of 1 copy of genome $= BP_{genome} \times 650 = \mathbf{4.10 \times 10^{10}}$ **Da**

Number of moles of genome in sample $= m_{sample} / (4.10 \times 10^{10}$ Da$) = \mathbf{9.76 \times 10^{-18}}$ **mol**

Number of copies of genome in sample $= 2.44 \times 10^{-19}$ mol $\times N_A = \mathbf{5.88 \times 10^6}$ **copies**

And thus:

Number of copies of genome in 160 ng of genomic DNA sample $= \mathbf{2.35 \times 10^6}$ **copies**

Number of copies of genome in 30 ng of genomic DNA sample $= \mathbf{4.41 \times 10^5}$ **copies**

References

1. Mercière, M.; Laybats, A.; Carasco-Lacombe, C.; Tan, J. S.; Klopp, C.; Durand-Gasselin, T.; Syed Alwee, S. S. R.; Camus-Kulandaivelu, L.; Breton, F. Identification and development of new polymorphic microsatellite markers using genome assembly for Ganoderma boninense, causal agent of oil palm basal stem rot disease. *Mycol. Prog.* 2015, 14, 103.