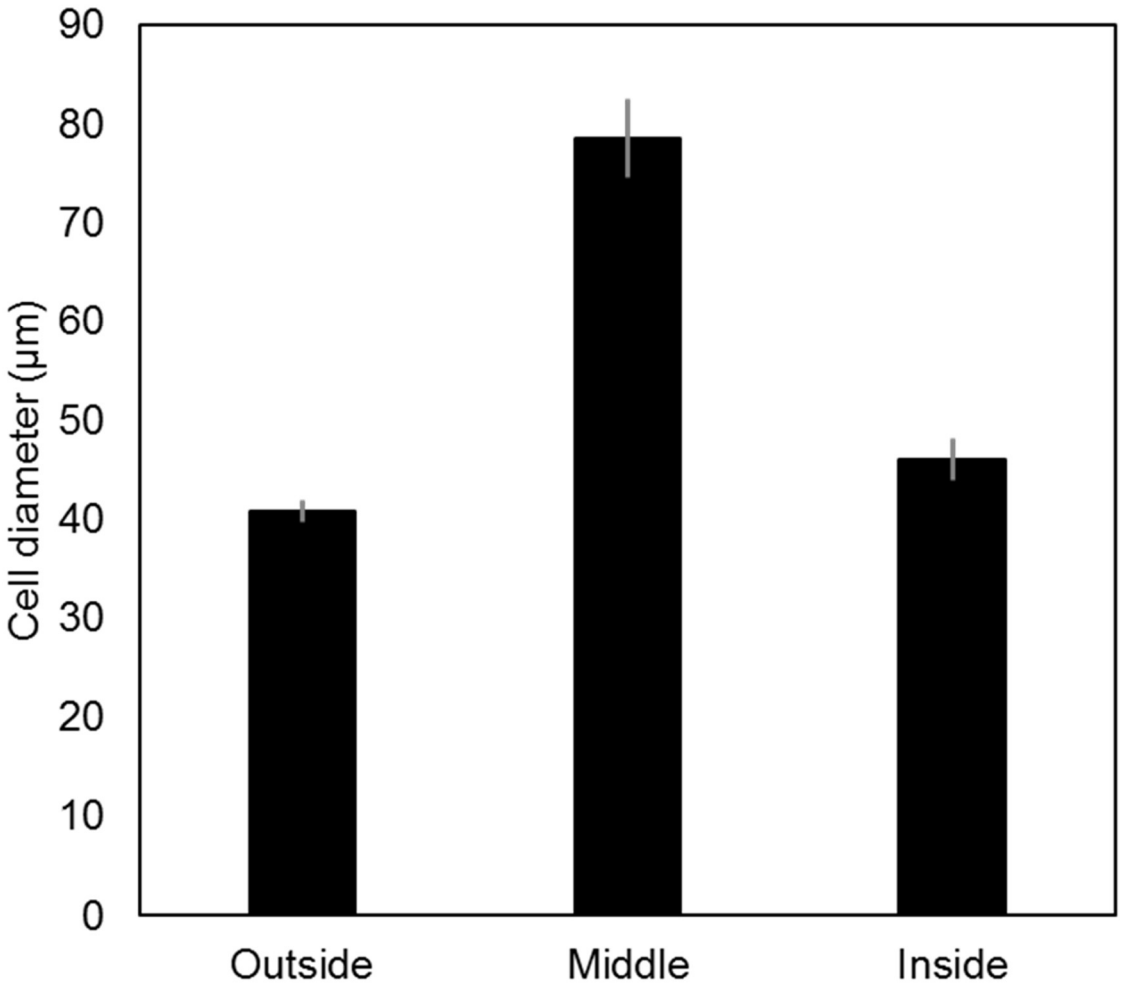

FIGURE S1. Mean diameter of cells located in the outer, middle and inner layers of the cortex. Cell in the middle of the cortex show a mean diameter of 78.6 µm ± 3.95 µm SE (n = 89), while the outer and inner layers of cells have a mean diameter of 40.8 µm ± 1.06 µm SE (n = 89) and 46 µm ± 2.09 µm SE (n= 89), respectively.

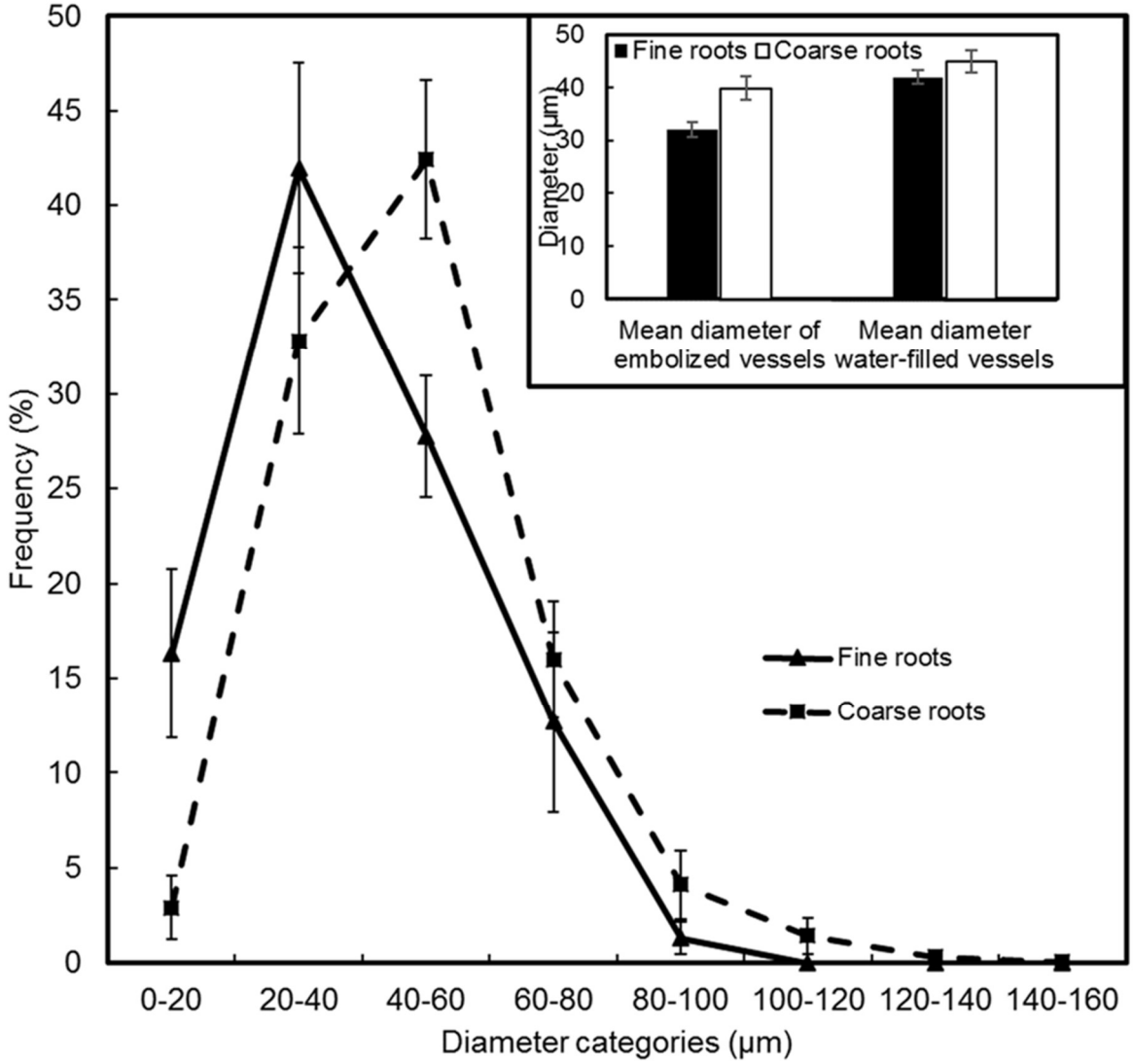

FIGURE S2. Frequency distribution of all vessel diameters in fine and coarse roots. Each data point is the vessel frequency mean ± SE (n= 13) for a specific diameter size class. Inset show the mean diameter of embolized vessels and water filled vessels for fine and woody roots.

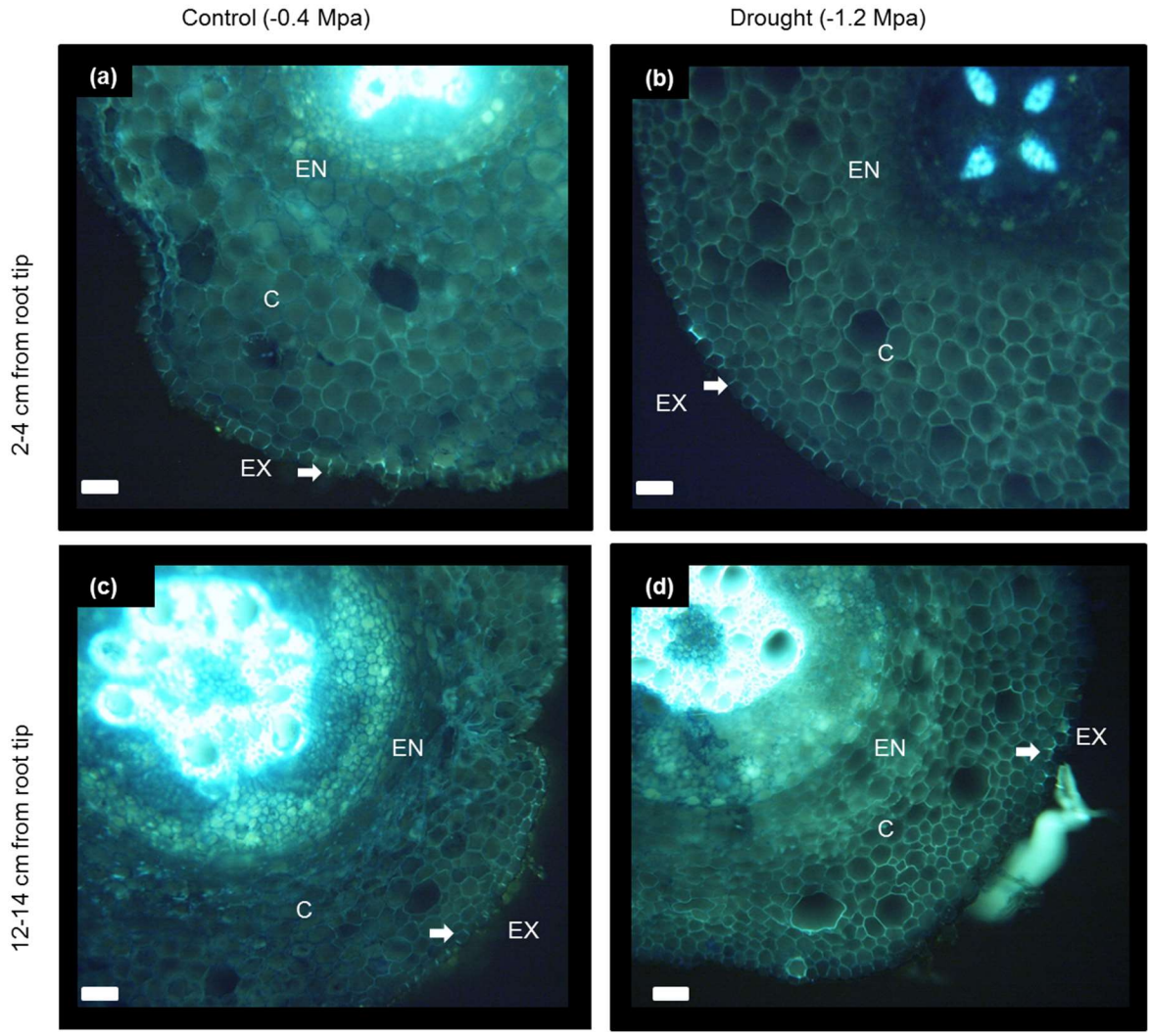

FIGURE S3. Free-hand cross sections of fine roots obtained from grapevine plants subjected to well-watered (Control, -0.4 MPa Ψ_{stem}) and drought-stress (3 days of water deprivation -1.2 MPa Ψ_{stem}) conditions. Images were stained with berberine-aniline blue and imaged under fluorescence light (excitation filter, 400- to 410-nm peak emission; dichromatic mirror, 455 nm; and barrier filter, 455 nm). Depositions of suberin and lignin appear bright green (white arrows). (a) (c), The exoderm show deposition of suberin-lignin material on the anticlinal and interior periclinal walls. The endoderm shows negligible deposition of suberin-lignin and only an early development of the casparian strip is present in some cells. (b) (d), Deposition of suberin-lignin is shown mostly in the anticlinal walls of cells. No sign of suberin-lignin deposition is present in the endoderm. No clear differences in suberin-lignin deposition can be account when control and drought treatments are compared. EX, exodermis; EN, endodermis; C, cortex. Bars = 200 µm.

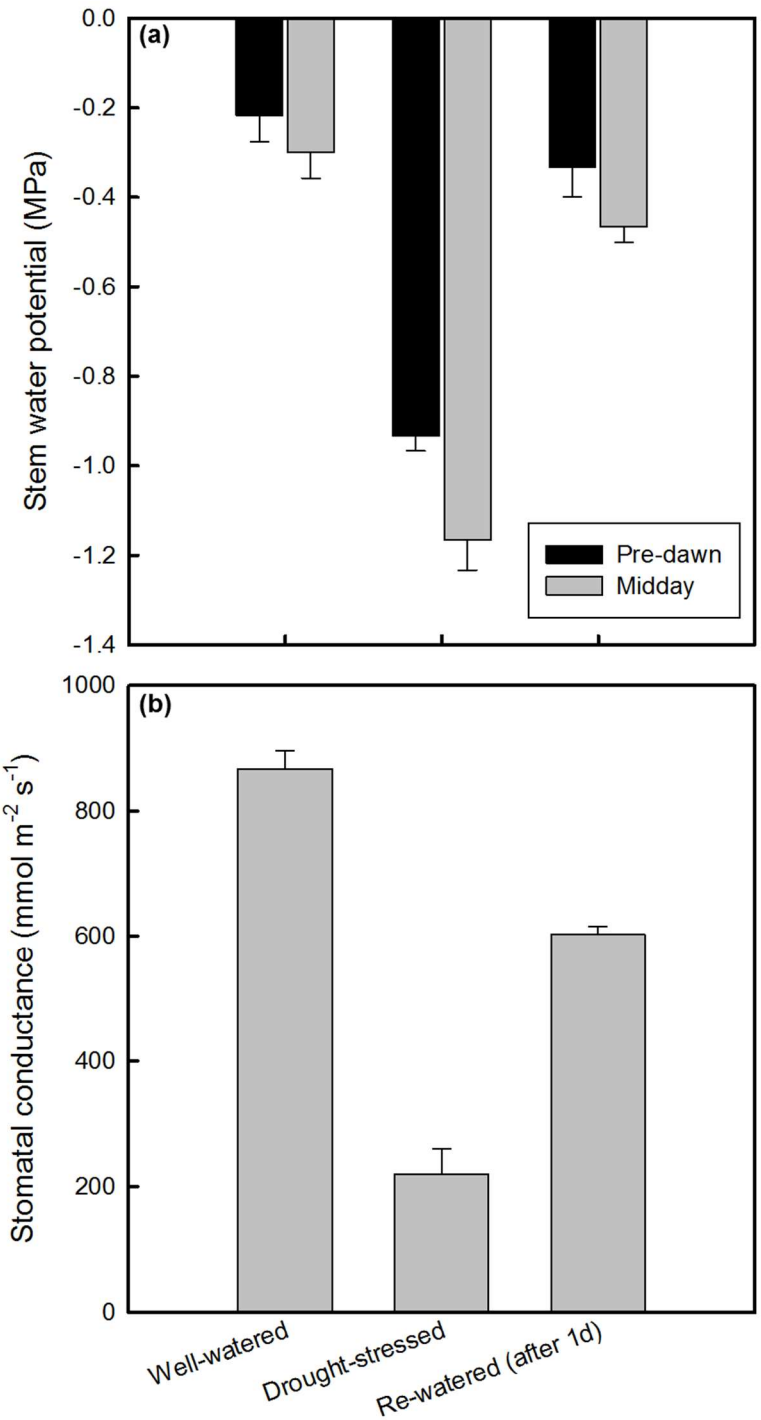

FIGURE S4. Pre-dawn and Midday stem water potentials (a) and stomatal conductance (b) measurements of well-watered, drought-stressed and re-watered (after 1d) plants. Stomata conductance was measured midday between 1100 and 1300 h in the greenhouse using a SC-1 leaf porometer (Decagon Devices Inc., Pullman, Washington, USA) and measuring 3 leaves per plant. Bars are means ± SE (n=3).

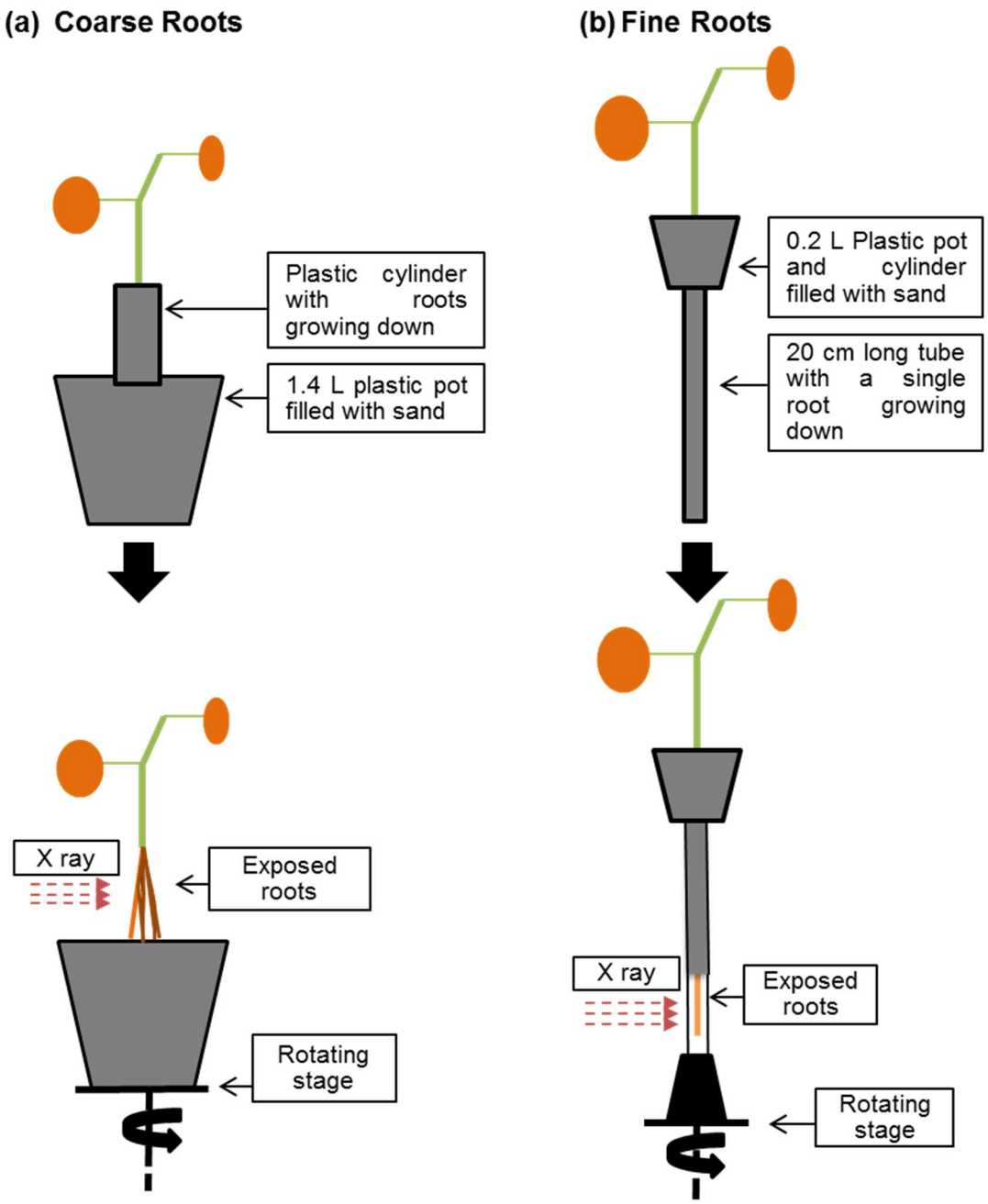

FIGURE S5. Cartoon illustrating how plants were grown in order to get access to coarse and fine roots. (a), Coarse roots were grown surrounded by a plastic cylinder filled with sand such that the cylinder and the sand was easily removed prior scanning. (b), Fine roots were grown inside a 20 cm long plastic tube. At the moment of the scanning, the sand surrounding the target zone was removed.

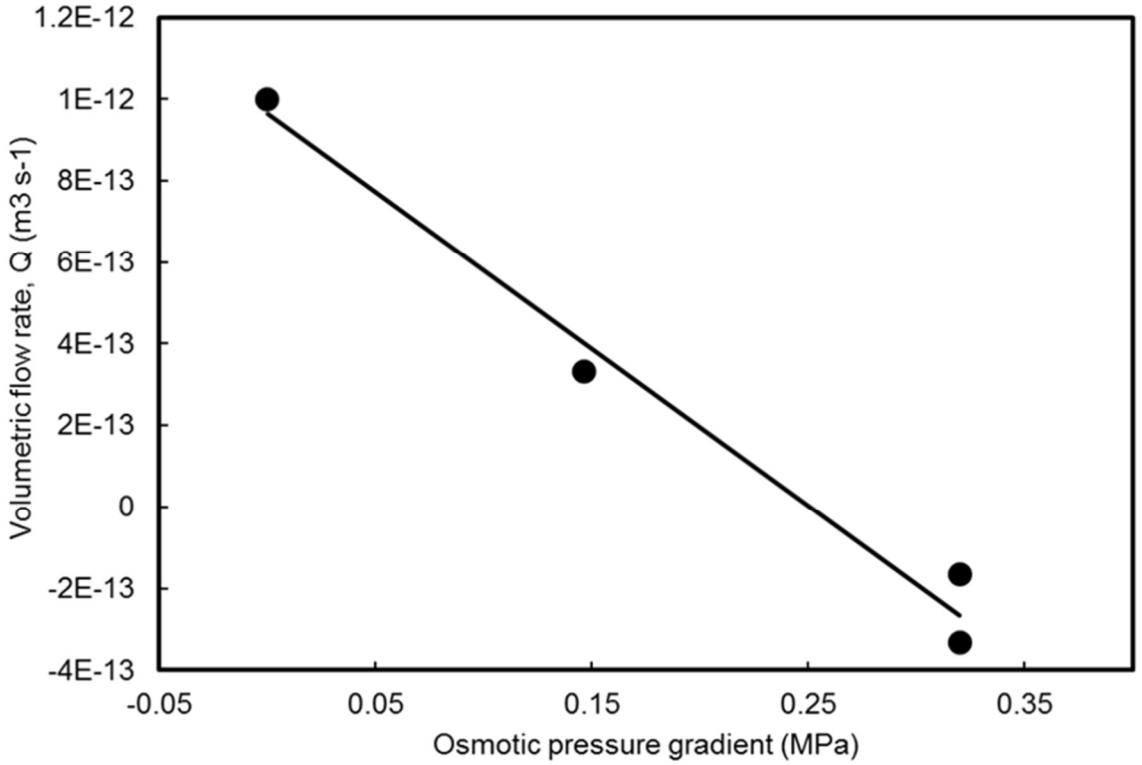

FIGURE S6. Representative relationship between osmotic pressure and volumetric flow rate. Inflow occurred at 0 and -0.15 MPa Ψ_π of the solution. Outflow occurred when the Ψ_π of the solution was -0.3 MPa. Solid line is a linear regression of the form $Y = -4e^{-12} X + 1e^{-12}$ ($R^2 = 0.98$).