

## How to prepare the horse DNA standards (example)

Suppose that you want to prepare horse DNA standards of **5%, 1%, 0.1%** mixed with meat products' DNA in a final concentration of **25 ng/μl** and final volume of **150 μl**.

Suppose that your samples' concentration is:

- Meat products mix DNA: 433.4 ng/μl
- Horse DNA: 177.5 ng/μl

Dilute the horse DNA consecutively two times 1:10 (final dilution 1:100)

2 μl DNA + 18 μl H<sub>2</sub>O → C=17.75 ng/μl → 2 μl diluted DNA + 18 μl H<sub>2</sub>O → C=1.775 ng/μl

You will need both dilutions to prepare your sample

### **A) 5% horse DNA standard - 150 μl of 25 ng/μl**

The amount of total DNA in this sample is  $150 \times 25 = 3750$  ng

Of this amount you want 5% to be **horse DNA** ie.  $3750 \times 0.05 = 187.5$  ng and 95% to be **meat products' DNA** ie.  $3750 \times 0.95 = 3562.5$  ng

Work with the 1:10 horse dilution

You need  $187.5 / 17.75 = 10.56$  μl of the **1:10 horse DNA dilution** and  $3562.5 / 433.4 = 8.22$  μl of the **meat products' DNA**. Add PCR water till the final volume of 150 μl ( $150 - 10.56 - 8.22 = 131.22$  μl)

### **B) 1% horse DNA standard - 150 μl of 25 ng/μl**

Work as above with the 1:10 horse DNA dilution, but with the desired concentration to be 1% horse DNA (0.01) and 99% (0.99) meat products' DNA.

### **C) 0.1% horse DNA standard - 150 μl of 25 ng/μl**



Work as above with the 1:100 horse DNA dilution but with the desired concentration to be 0.1% horse DNA (0.001) and 99.9% (0.999) meat products' DNA.



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