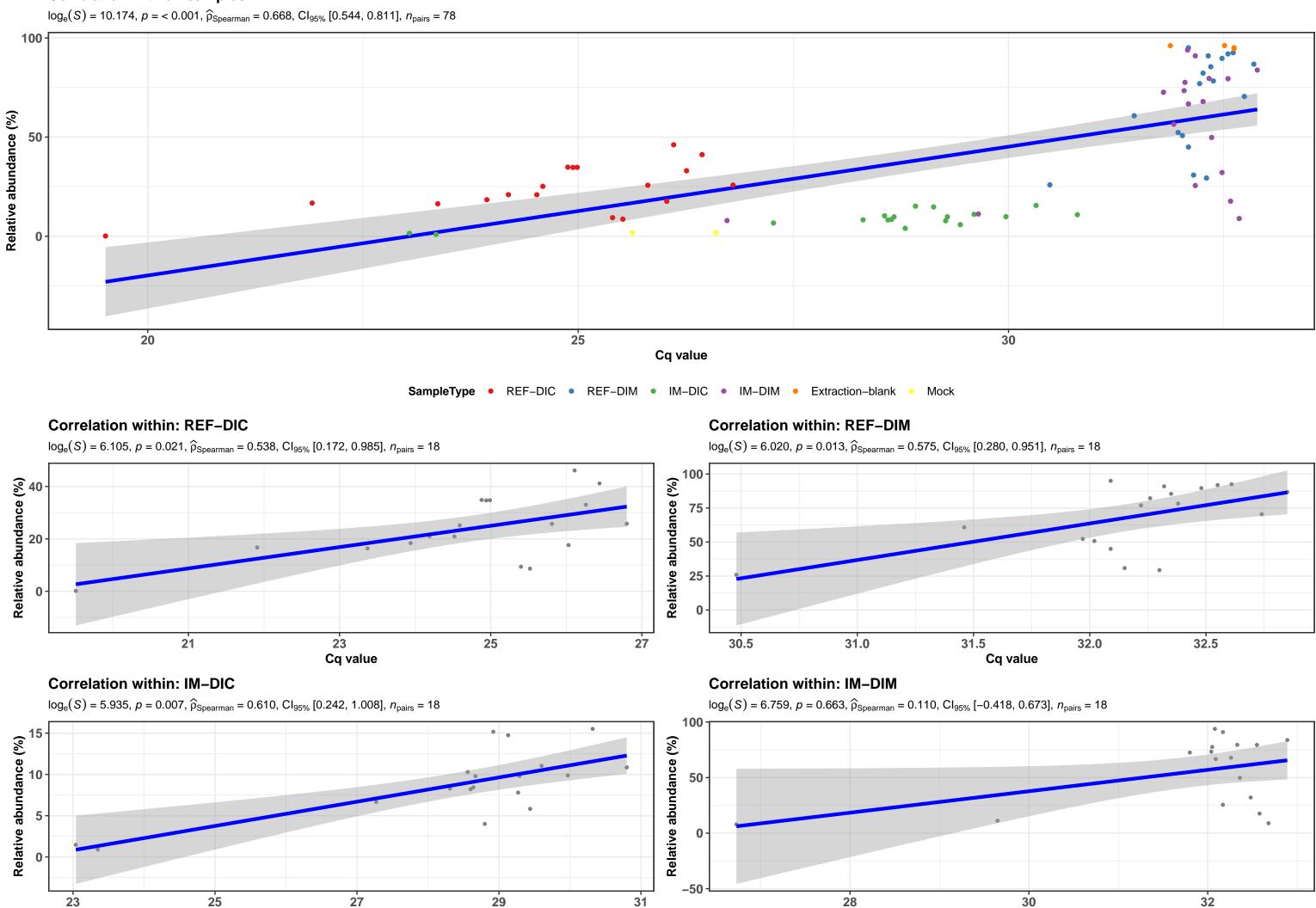


Cq value



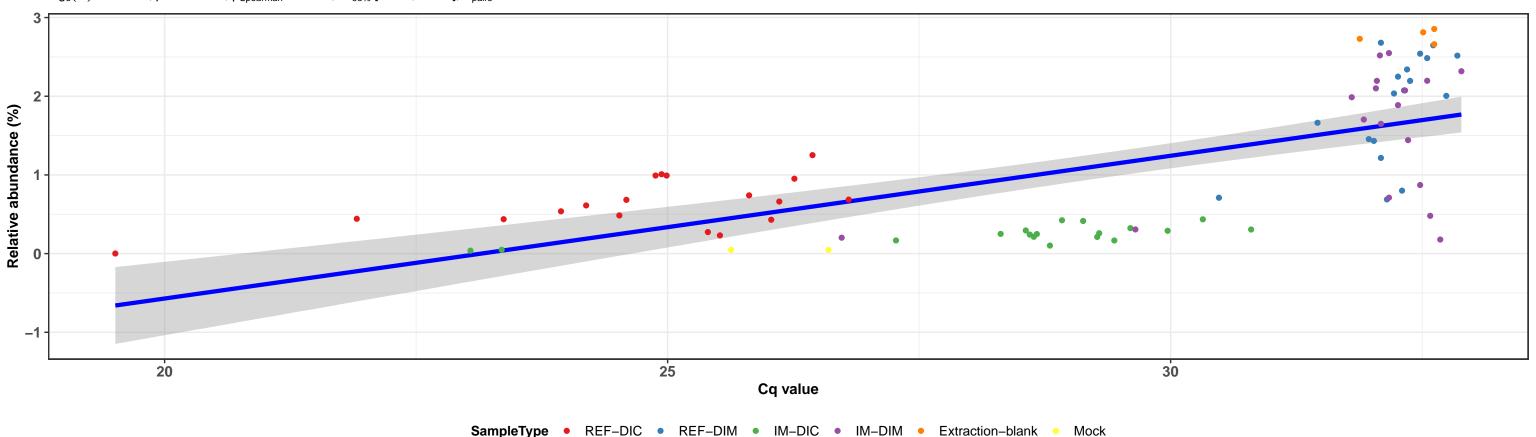
30

Cq value

k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Gammaproteobacteria; o\_\_Pseudomonadales; f\_\_Pseudomonadaceae; g\_\_Pseudomonas; NA

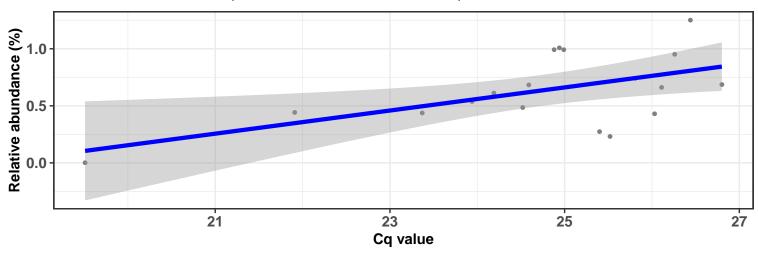


 $log_e(S) = 10.184$ , p = < 0.001,  $\hat{\rho}_{Spearman} = 0.665$ ,  $Cl_{95\%}$  [0.535, 0.812],  $n_{pairs} = 78$ 



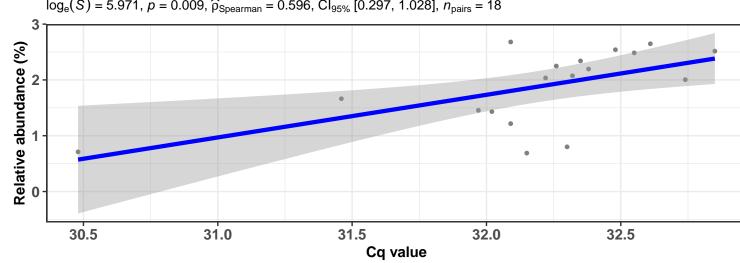
#### **Correlation within: REF-DIC**

 $log_e(S) = 6.314$ , p = 0.075,  $\hat{\rho}_{Spearman} = 0.430$ ,  $Cl_{95\%}$  [0.008, 0.848],  $n_{pairs} = 18$ 



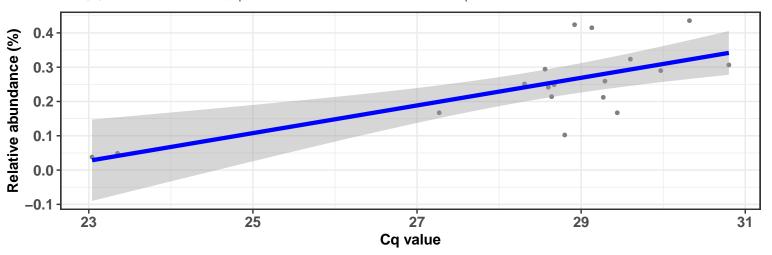
# **Correlation within: REF-DIM**

 $log_e(S) = 5.971$ , p = 0.009,  $\hat{\rho}_{Spearman} = 0.596$ ,  $Cl_{95\%}$  [0.297, 1.028],  $n_{pairs} = 18$ 



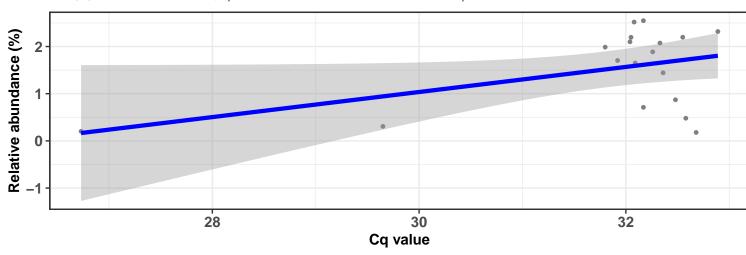
#### Correlation within: IM-DIC

 $log_e(S) = 5.971, p = 0.009, \hat{\rho}_{Spearman} = 0.595, Cl_{95\%} [0.261, 0.963], n_{pairs} = 18$ 

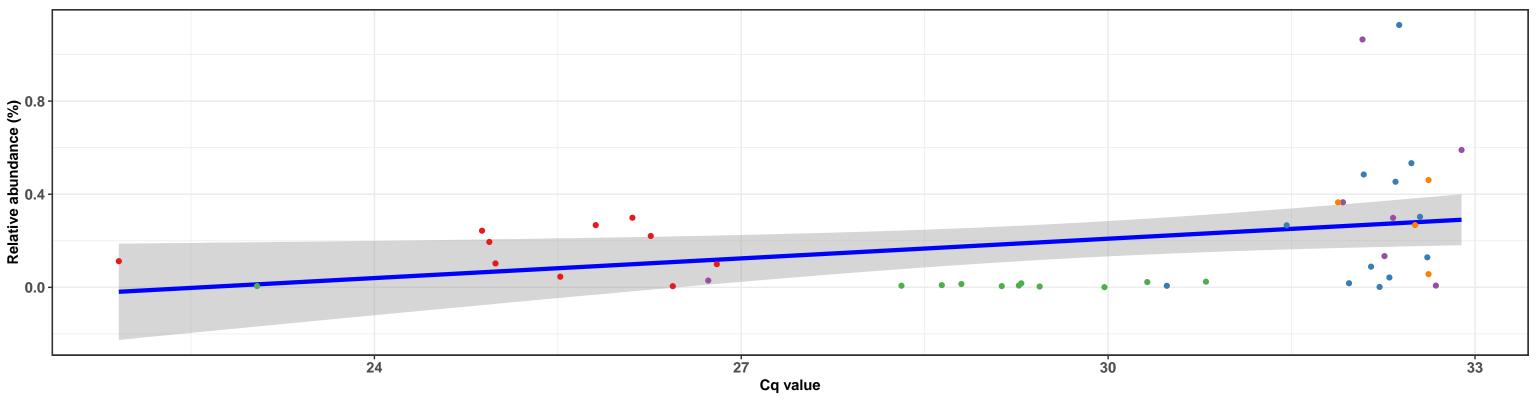


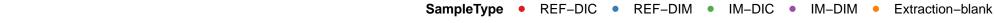
#### **Correlation within: IM-DIM**

$$log_e(S) = 6.821$$
,  $p = 0.832$ ,  $\widehat{\rho}_{Spearman} = 0.054$ ,  $Cl_{95\%}$  [-0.522, 0.662],  $n_{pairs} = 18$ 



 $log_e(S) = 9.123, p = 0.018, \hat{p}_{Spearman} = 0.354, Cl_{95\%} [0.093, 0.692], n_{pairs} = 44$ 

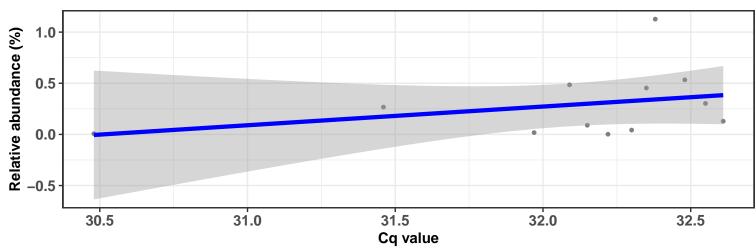




# $\log_{e}(S) = 5.308, p = 0.533, \, \widehat{\rho}_{Spearman} = -0.224, \, \text{Cl}_{95\%} \, [-0.932, \, 0.400], \, n_{pairs} = 10$

### Correlation within: REF-DIM

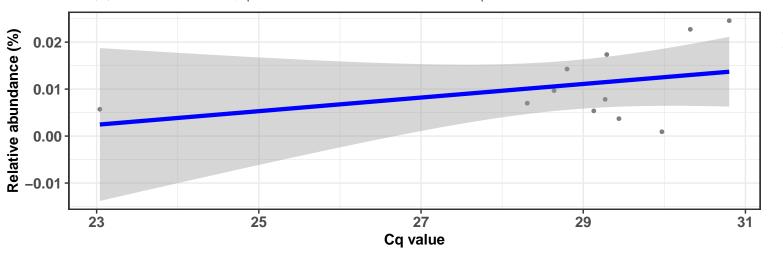
 $log_e(S) = 5.024, p = 0.124, \hat{p}_{Spearman} = 0.469, Cl_{95\%} [0.017, 1.023], n_{pairs} = 12$ 



#### Correlation within: IM-DIC

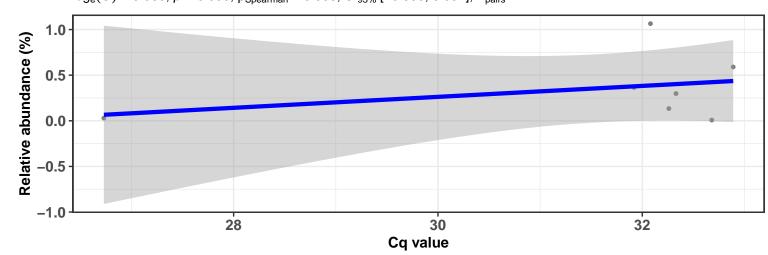
**Correlation within: REF-DIC** 

 $log_e(S) = 5.063$ , p = 0.401,  $\widehat{\rho}_{Spearman} = 0.282$ ,  $Cl_{95\%}$  [-0.485, 1.157],  $n_{pairs} = 11$ 



#### Correlation within: IM-DIM

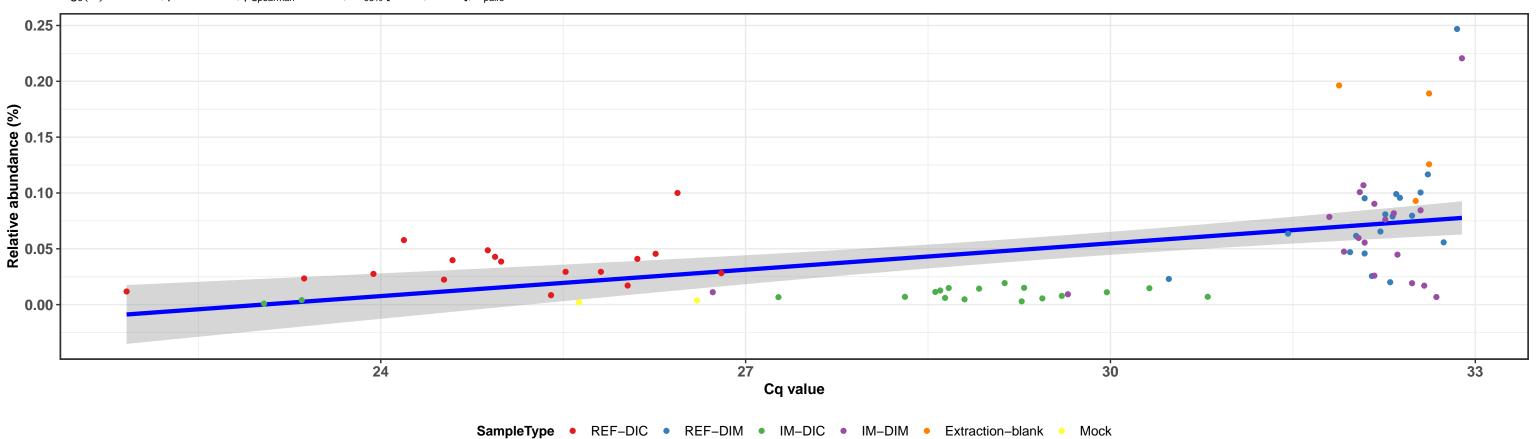
 $log_e(S) = 3.989, p = 0.939, \hat{\rho}_{Spearman} = 0.036, Cl_{95\%} [-0.850, 0.957], n_{pairs} = 7$ 



k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Gammaproteobacteria; o\_\_Pseudomonadales; f\_\_Pseudomonadaceae; g\_\_Pseudomonas; NA

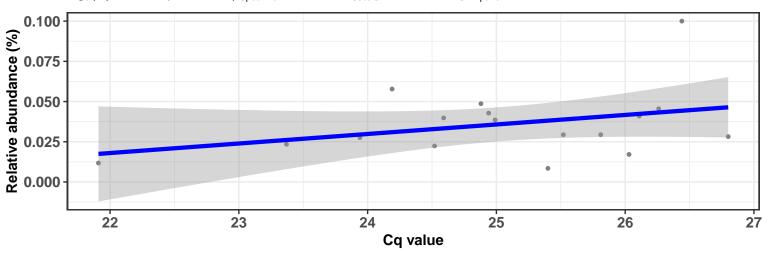


 $log_e(S) = 10.412, p = < 0.001, \widehat{\rho}_{Spearman} = 0.563, Cl_{95\%} [0.395, 0.753], n_{pairs} = 77$ 



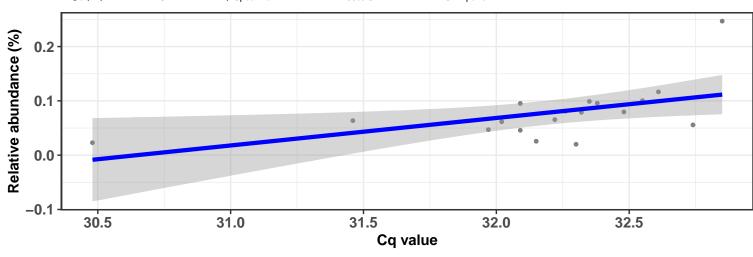
#### Correlation within: REF-DIC

 $log_e(S) = 6.370, p = 0.269, \hat{\rho}_{Spearman} = 0.284, Cl_{95\%} [-0.242, 0.923], n_{pairs} = 17$ 



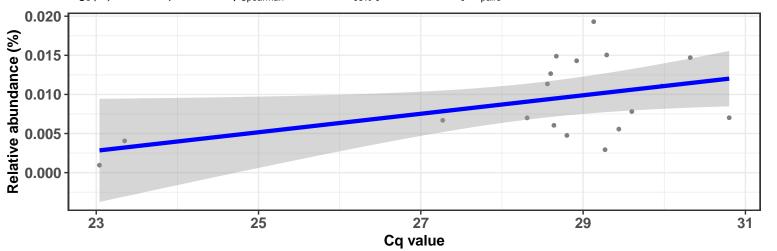
# Correlation within: REF-DIM

 $log_e(S) = 5.882, p = 0.005, \hat{\rho}_{Spearman} = 0.630, Cl_{95\%} [0.293, 1.036], n_{pairs} = 18$ 



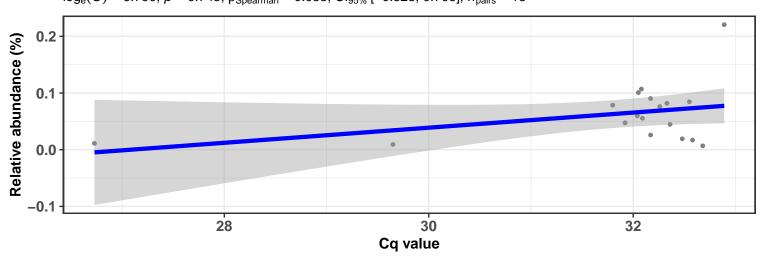
#### **Correlation within: IM-DIC**

 $log_e(S) = 6.426, p = 0.140, \hat{\rho}_{Spearman} = 0.362, Cl_{95\%} [-0.034, 0.777], n_{pairs} = 18$ 

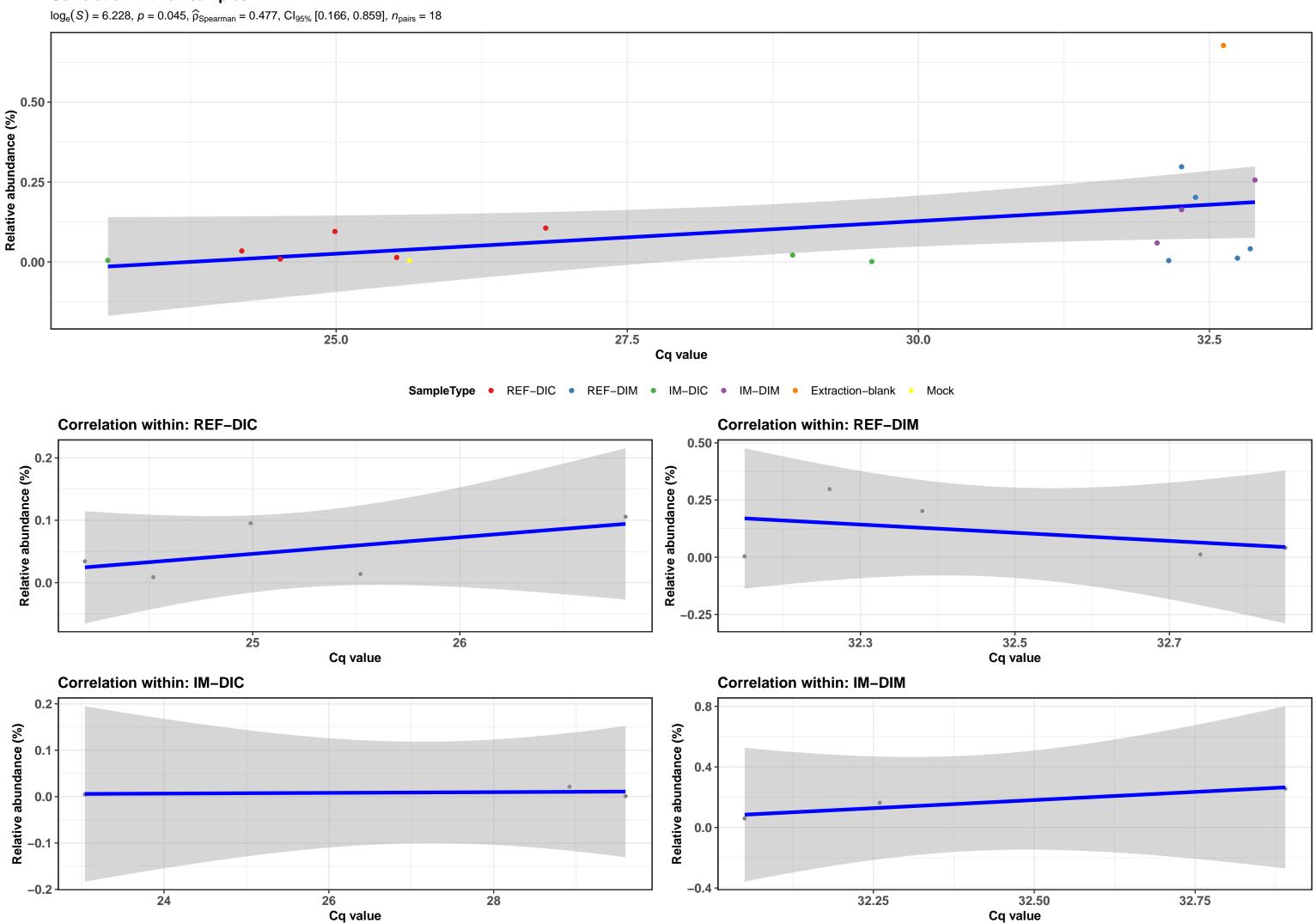


#### Correlation within: IM-DIM

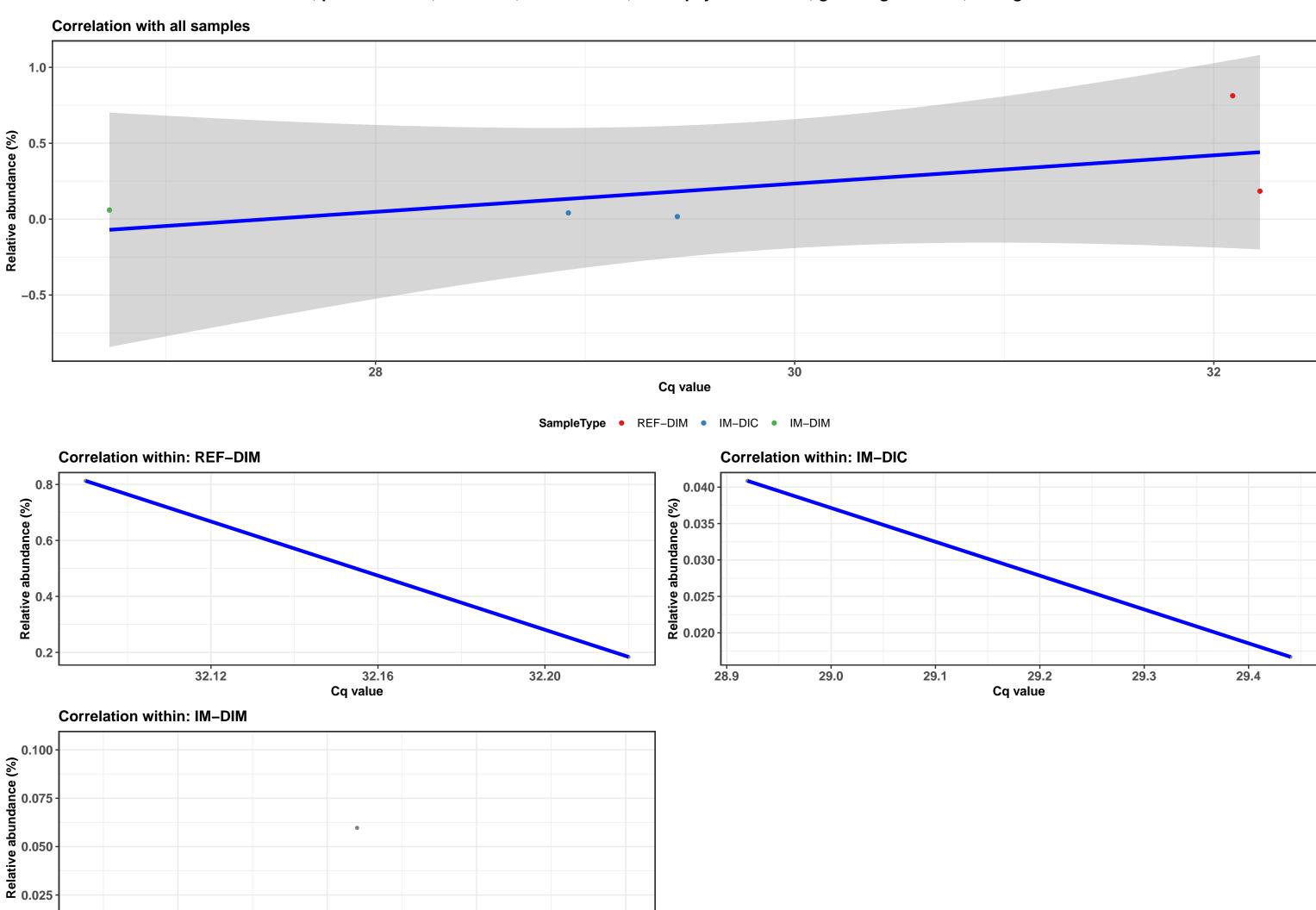
 $log_e(S) = 6.790, p = 0.745, \hat{\rho}_{Spearman} = 0.083, Cl_{95\%} [-0.528, 0.706], n_{pairs} = 18$ 



k\_\_Bacteria; p\_\_Actinobacteria; c\_\_Actinobacteria; o\_\_Micrococcales; f\_\_Microbacteriaceae; g\_\_Curtobacterium; Ambiguous\_taxa



k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Bacillales; f\_\_Staphylococcaceae; g\_\_Jeotgalicoccus; Ambiguous\_taxa



26.775

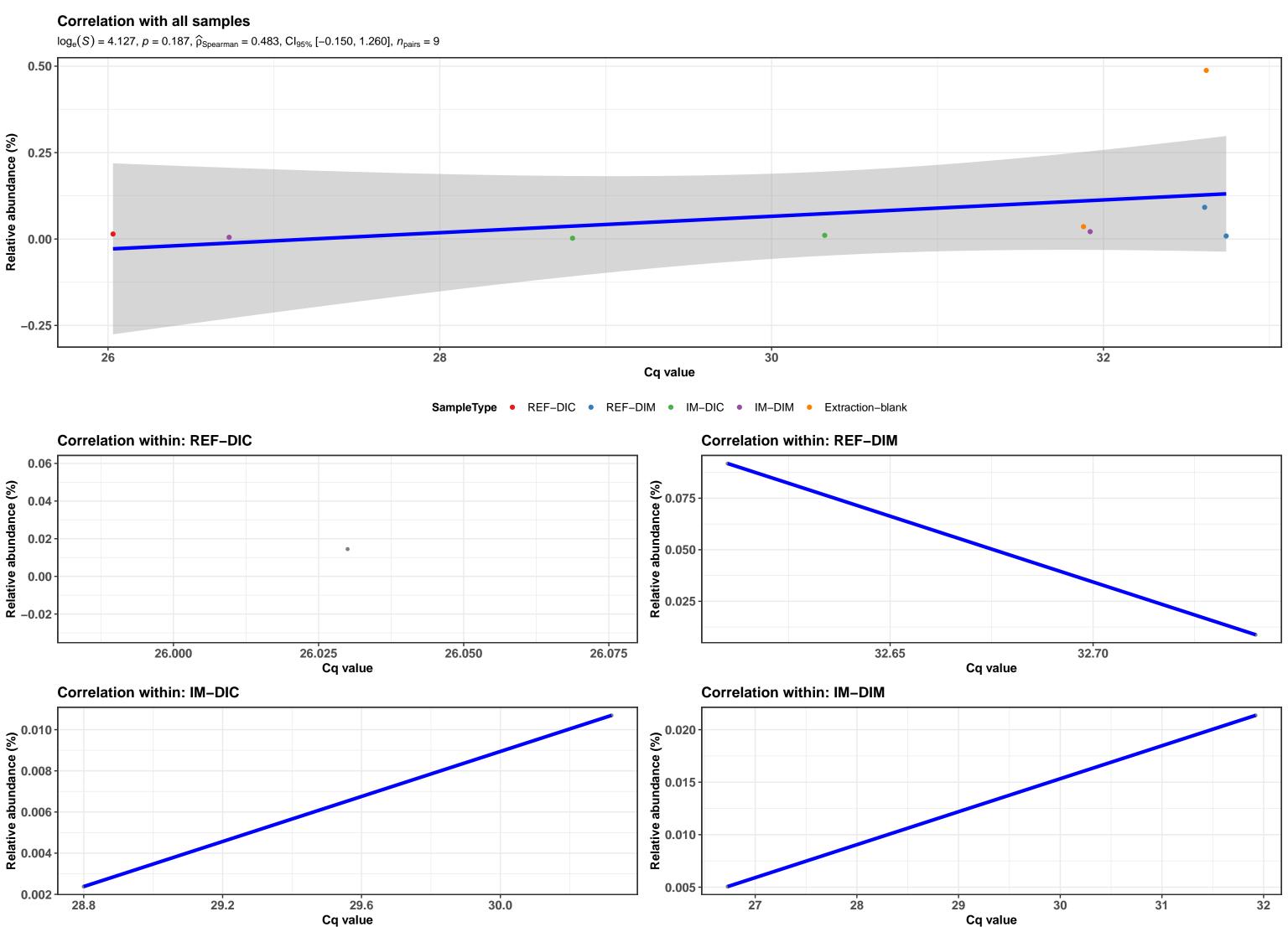
26.700

26.725

Cq value

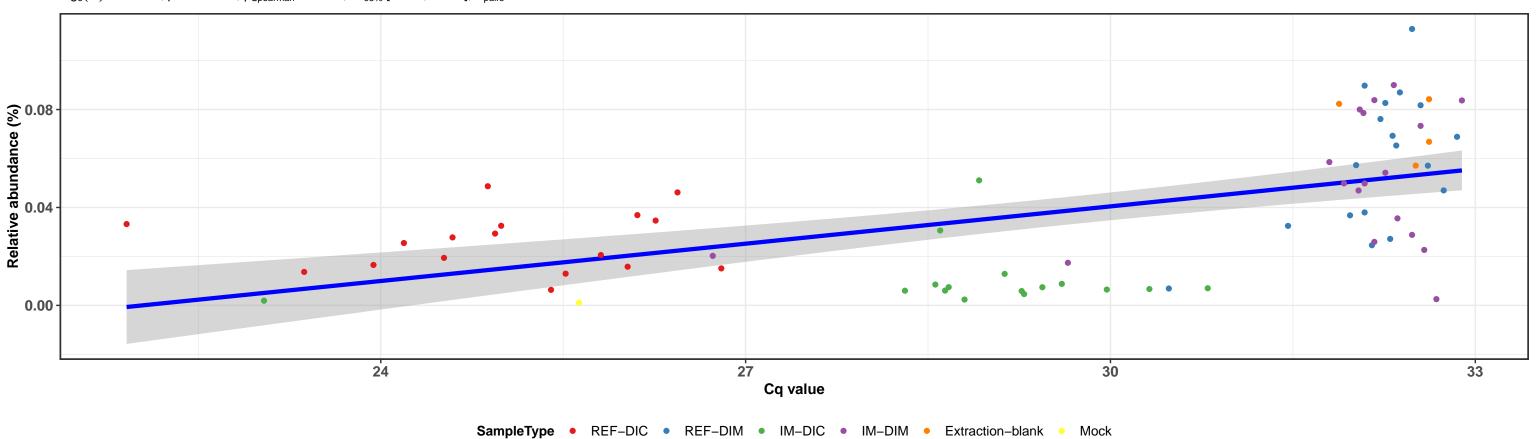
26.750

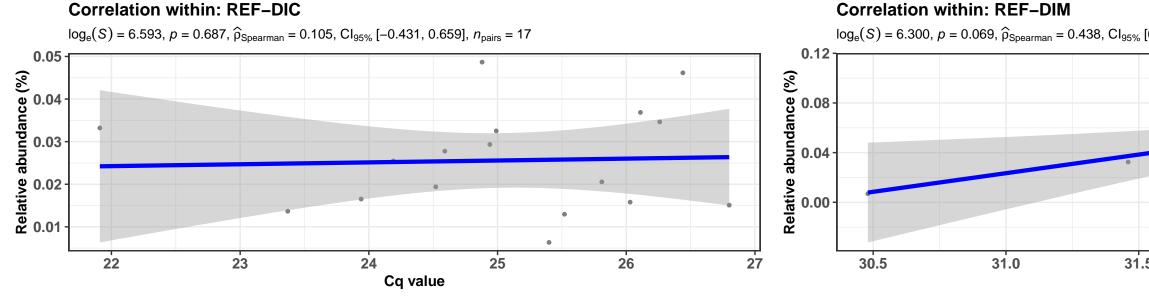
k\_\_Bacteria; p\_\_Actinobacteria; c\_\_Actinobacteria; o\_\_Frankiales; f\_\_Geodermatophilaceae; g\_\_Modestobacter; Ambiguous\_taxa

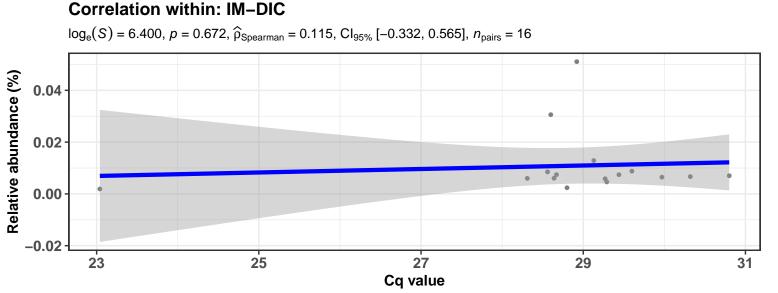


k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Gammaproteobacteria; o\_\_Pseudomonadales; f\_\_Pseudomonadaceae; g\_\_Pseudomonas; NA

 $log_e(S) = 10.265$ , p = < 0.001,  $\widehat{\rho}_{Spearman} = 0.575$ ,  $Cl_{95\%}$  [0.436, 0.693],  $n_{pairs} = 74$ 

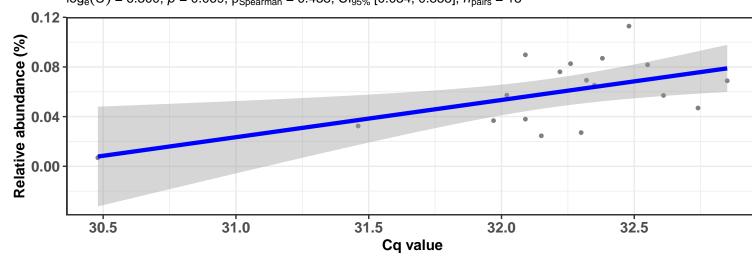






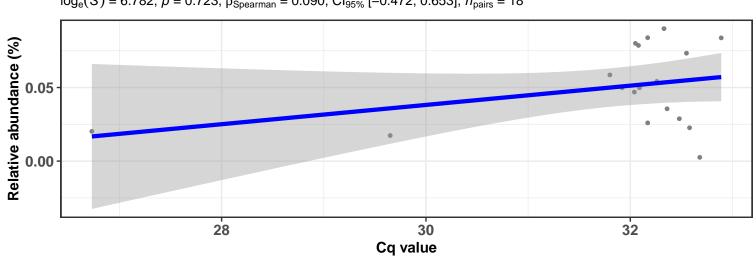


 $log_e(S) = 6.300, p = 0.069, \hat{\rho}_{Spearman} = 0.438, Cl_{95\%} [0.034, 0.858], n_{pairs} = 18$ 

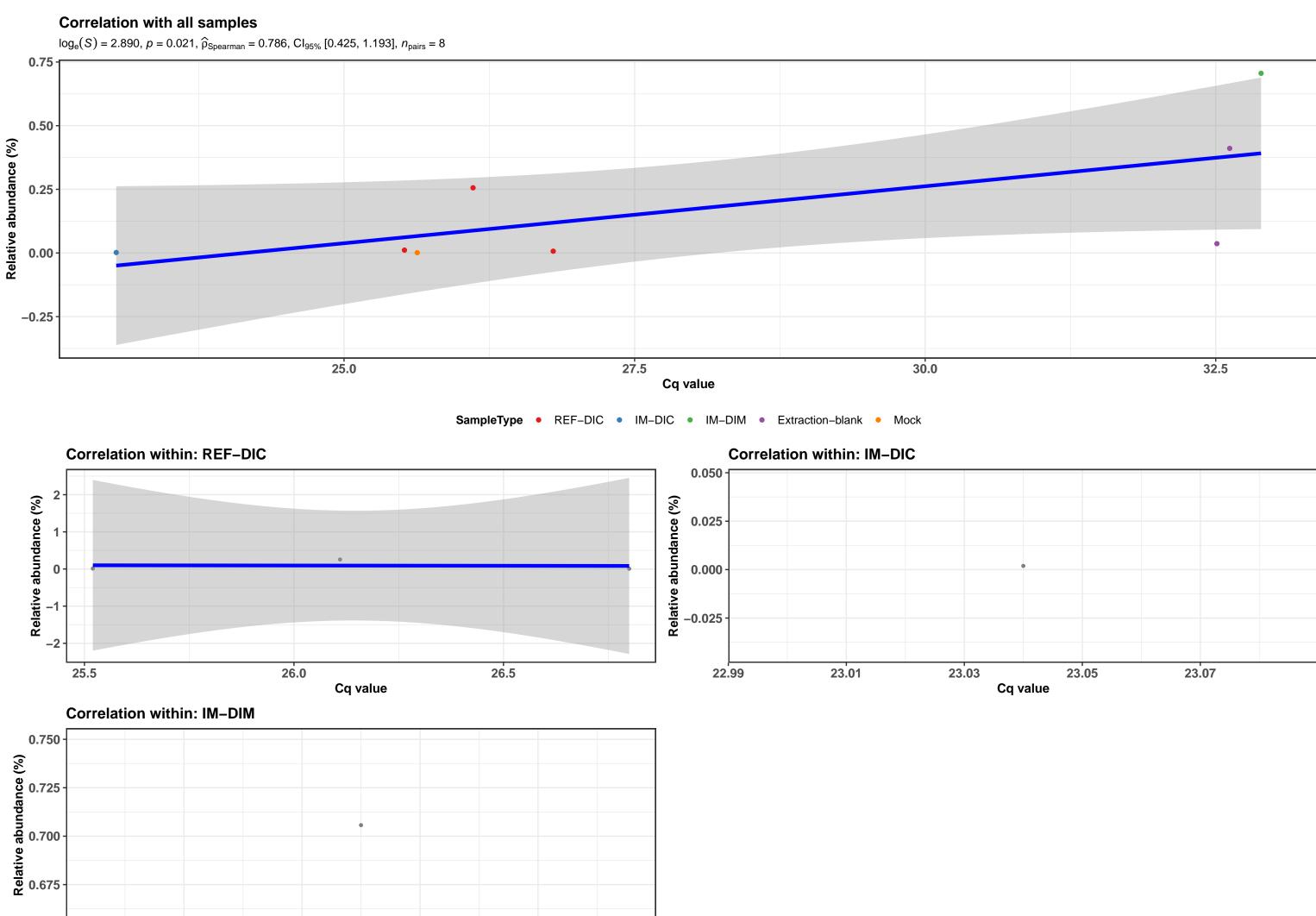


#### Correlation within: IM-DIM

 $log_e(S) = 6.782$ , p = 0.723,  $\hat{\rho}_{Spearman} = 0.090$ ,  $Cl_{95\%}$  [-0.472, 0.653],  $n_{pairs} = 18$ 



k\_\_Bacteria; p\_\_Bacteroidetes; c\_\_Bacteroidia; o\_\_Cytophagales; f\_\_Hymenobacteraceae; g\_\_Hymenobacter; s\_\_uncultured bacterium



32.88

32.90

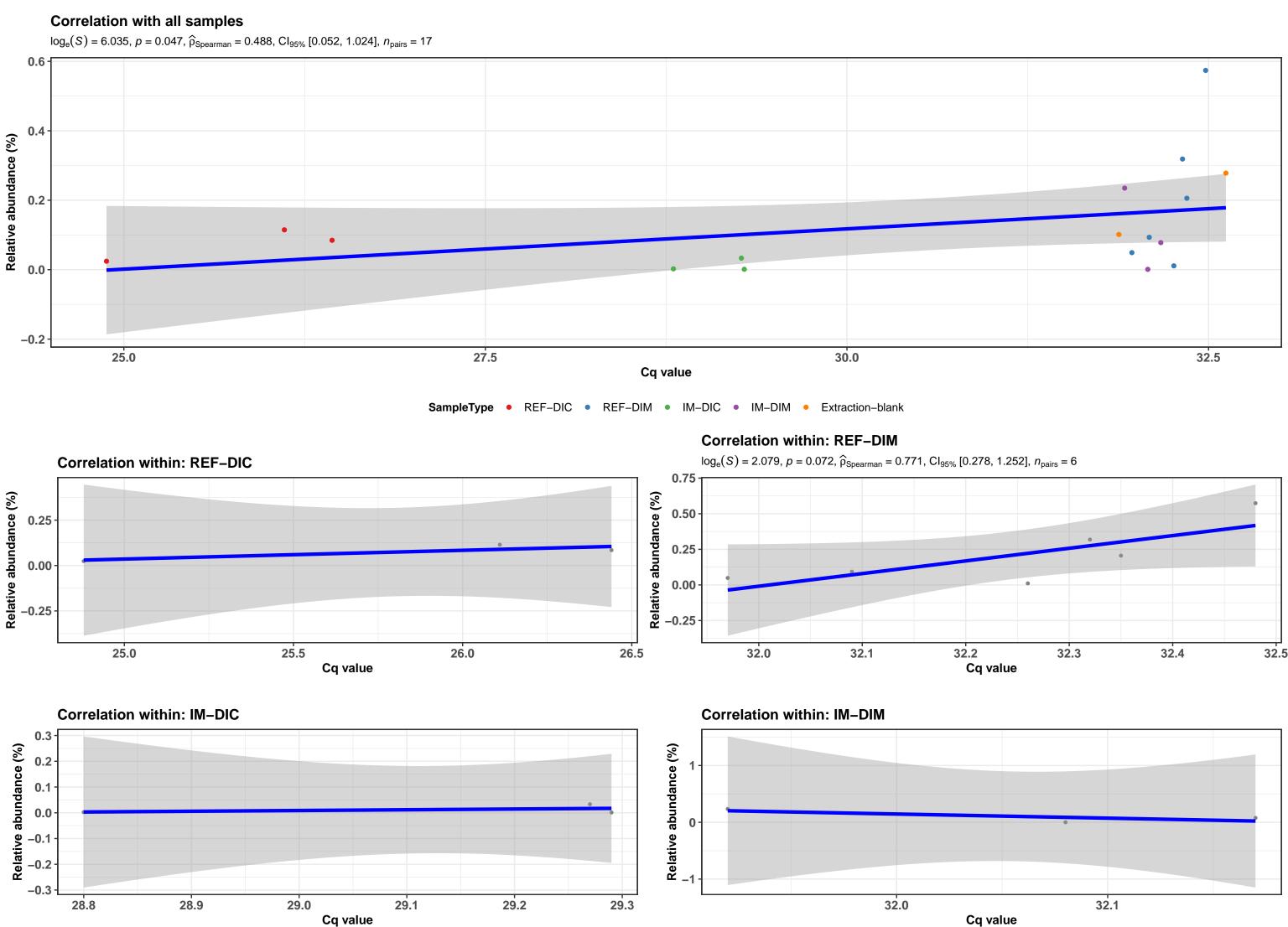
Cq value

32.92

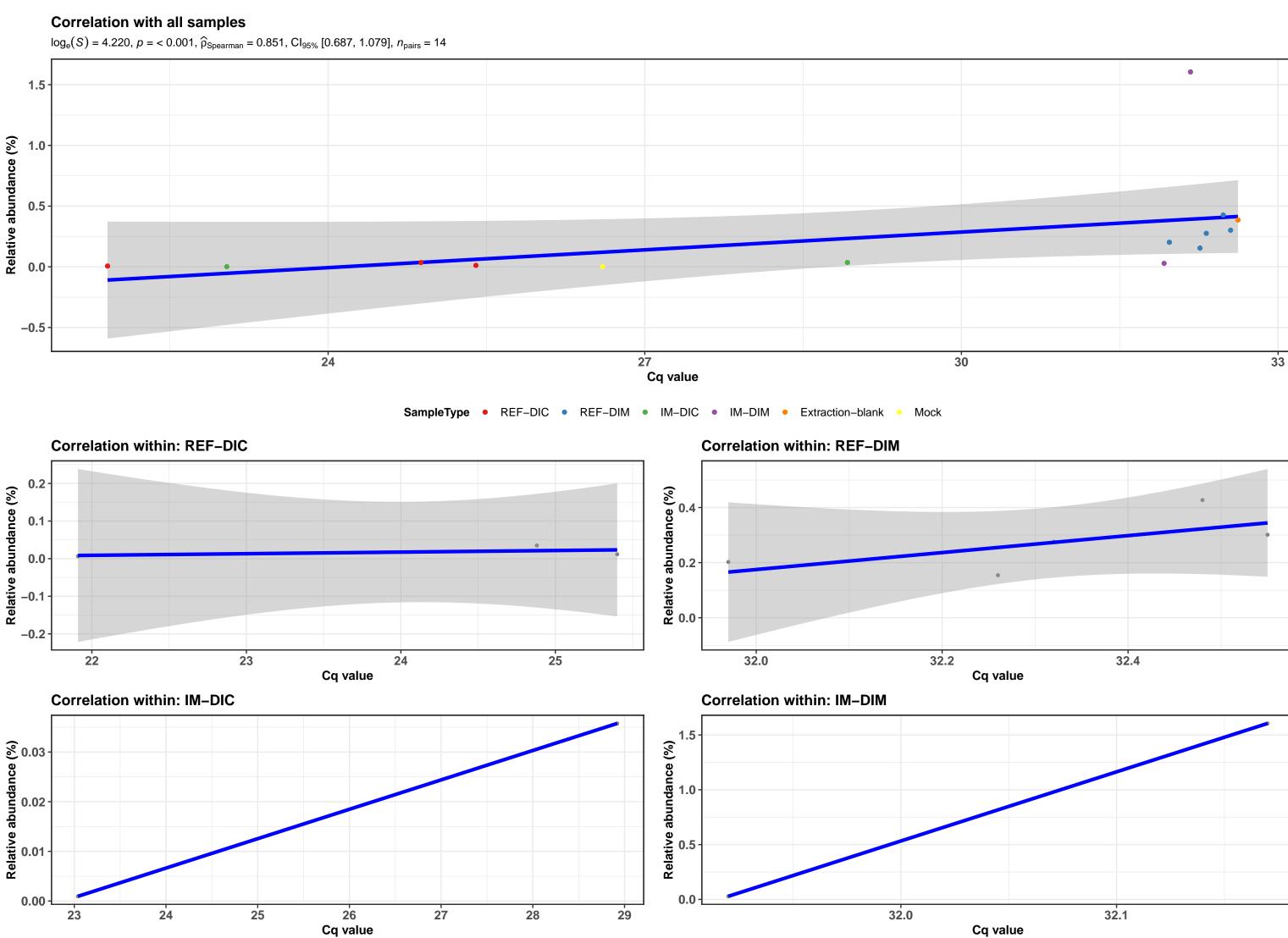
32.86

32.84

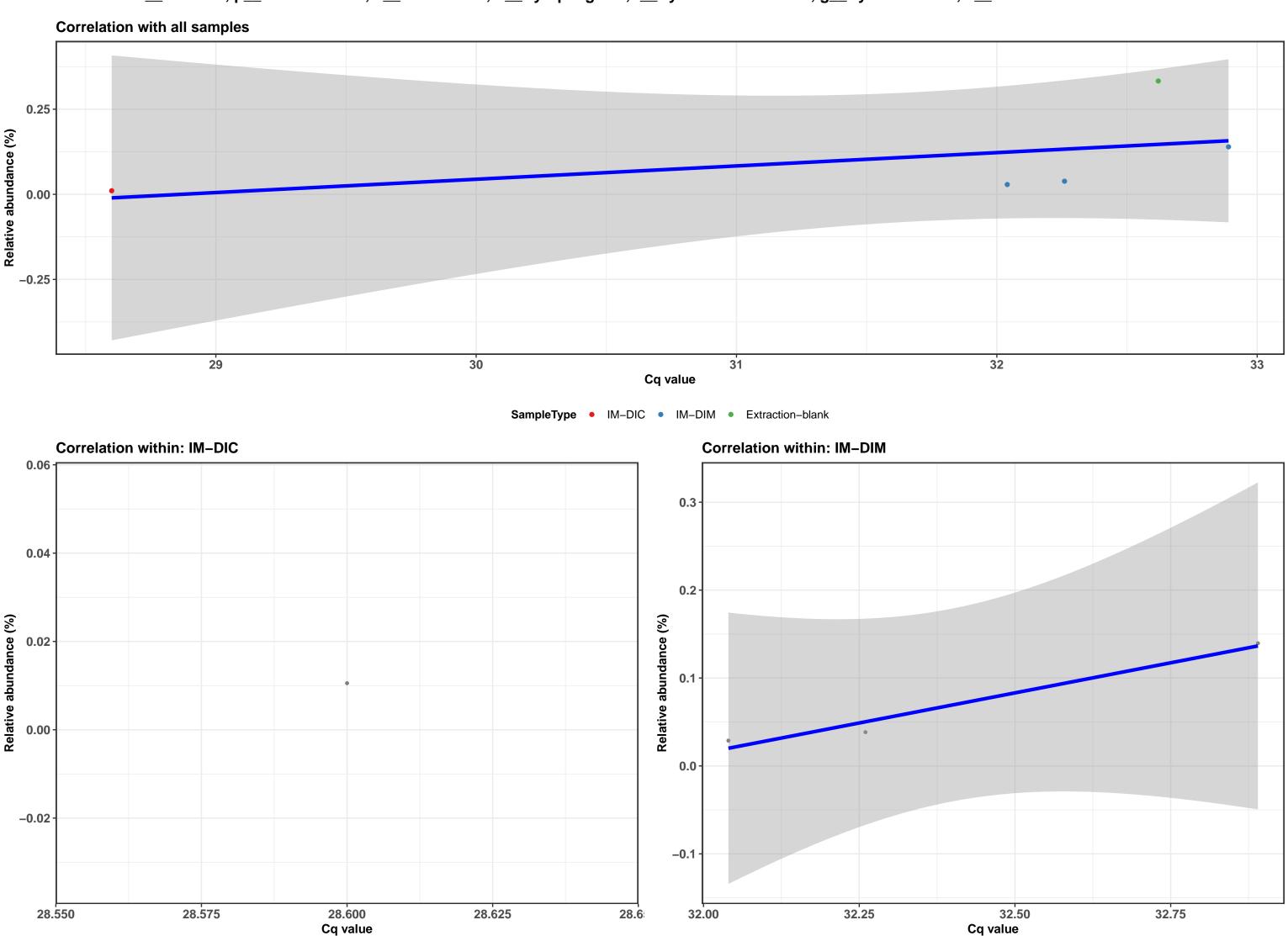
k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Alphaproteobacteria; o\_\_Caulobacterales; f\_\_Caulobacteraceae; g\_\_Brevundimonas; Ambiguous\_taxa



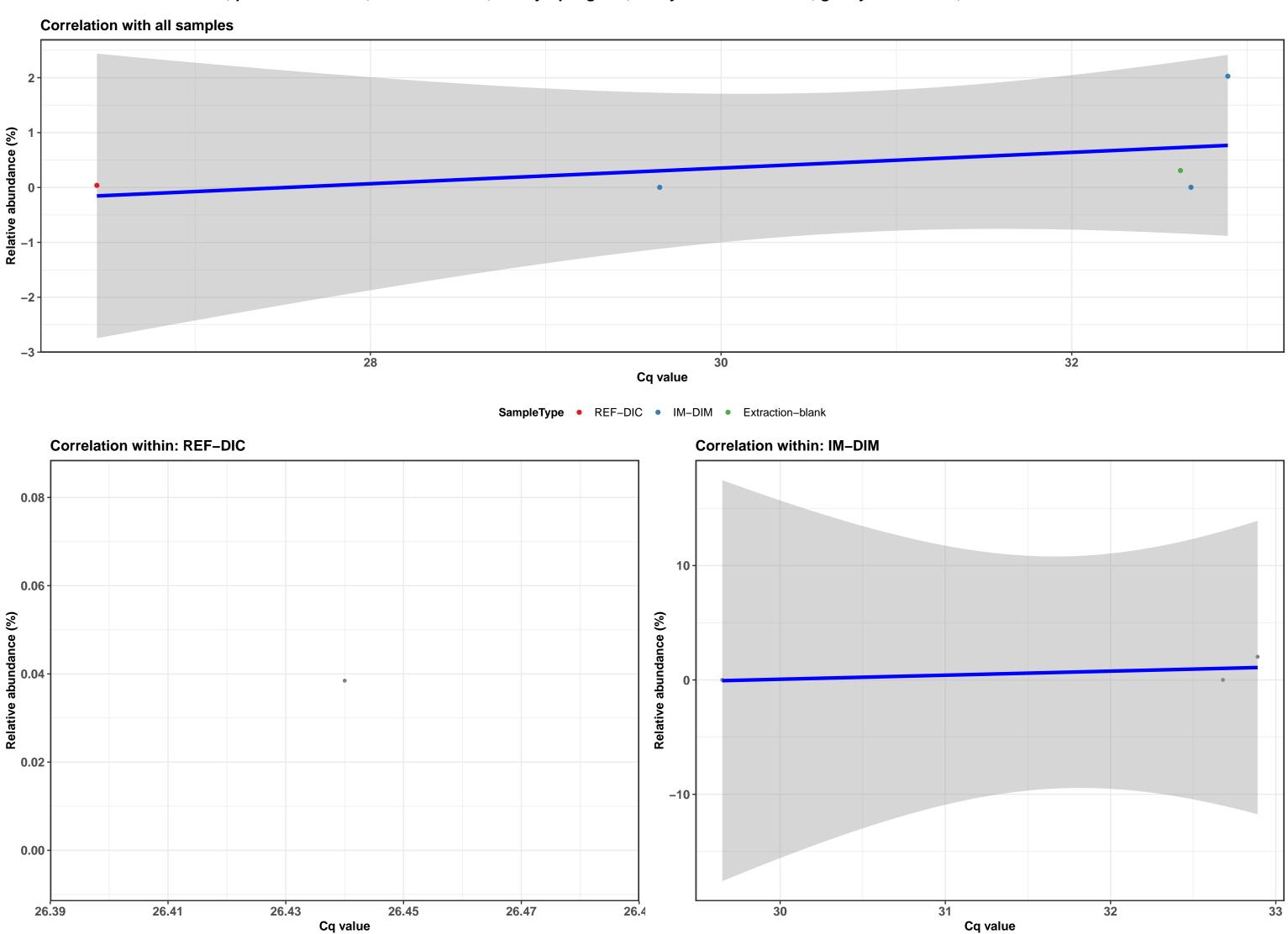
k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Alphaproteobacteria; o\_\_Caulobacterales; f\_\_Caulobacteraceae; g\_\_Brevundimonas; Ambiguous\_taxa



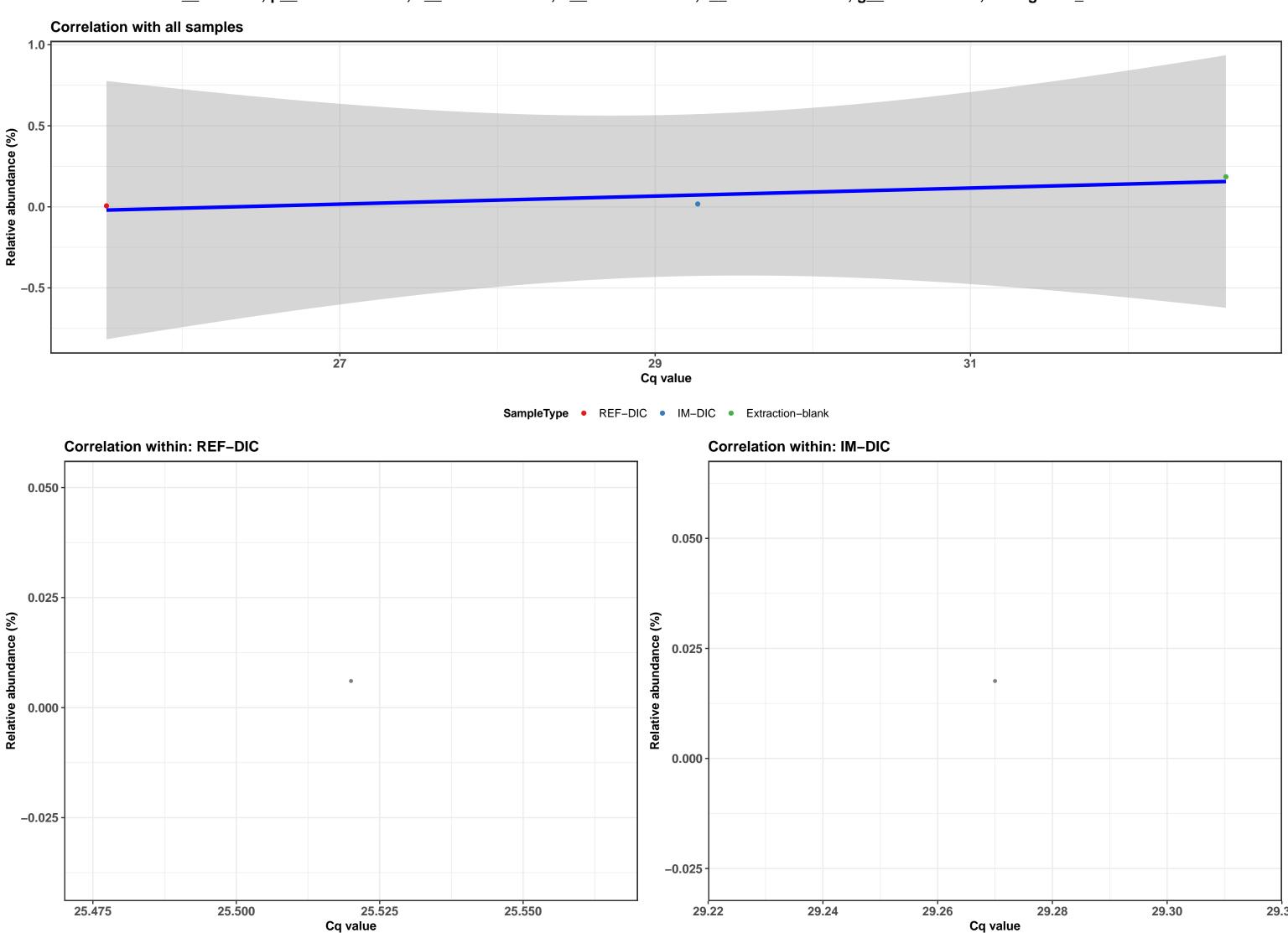
k\_\_Bacteria; p\_\_Bacteroidetes; c\_\_Bacteroidia; o\_\_Cytophagales; f\_\_Hymenobacteraceae; g\_\_Hymenobacter; s\_\_uncultured bacterium



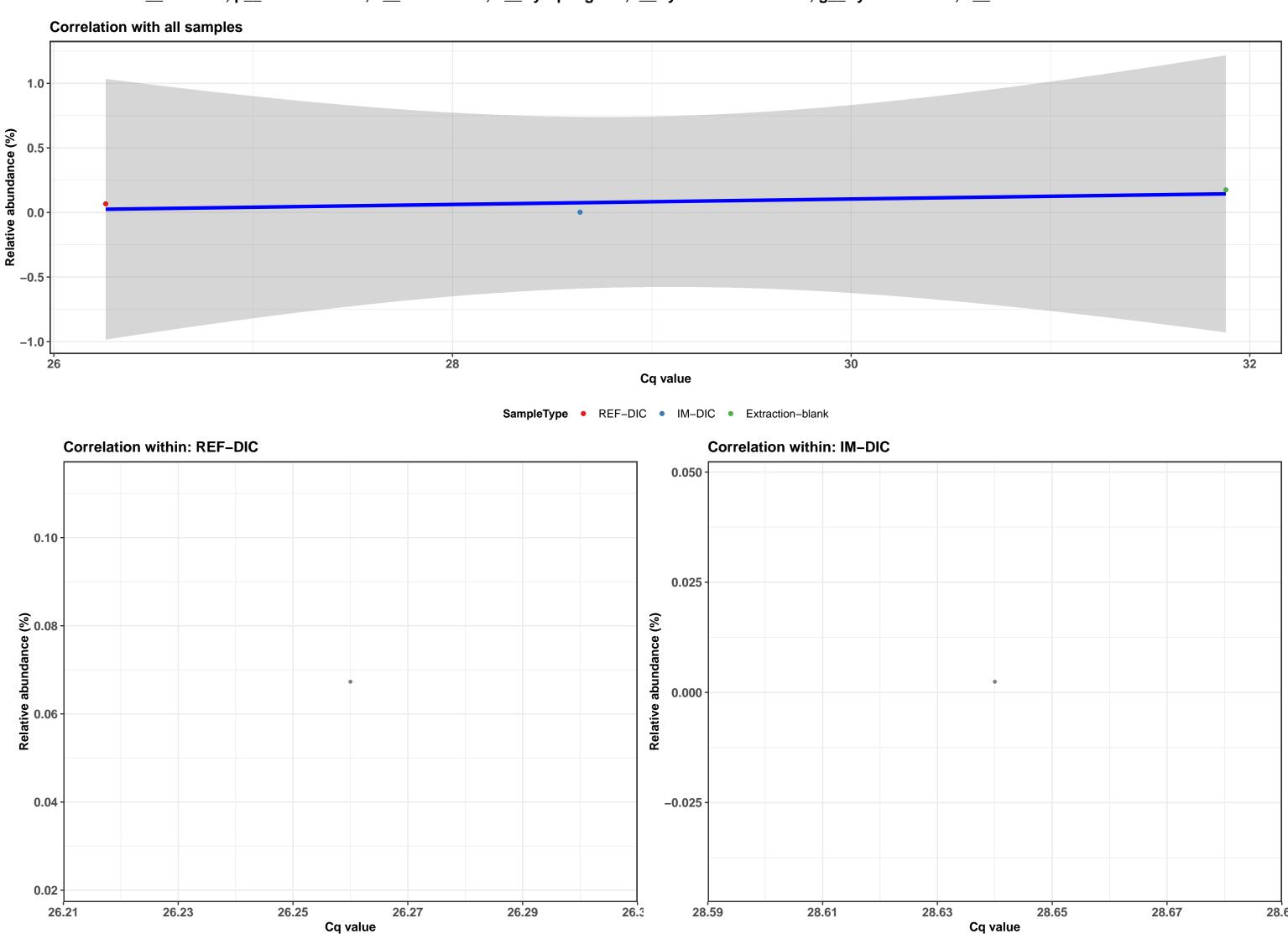
k\_\_Bacteria; p\_\_Bacteroidetes; c\_\_Bacteroidia; o\_\_Cytophagales; f\_\_Hymenobacteraceae; g\_\_Hymenobacter; s\_\_uncultured bacterium



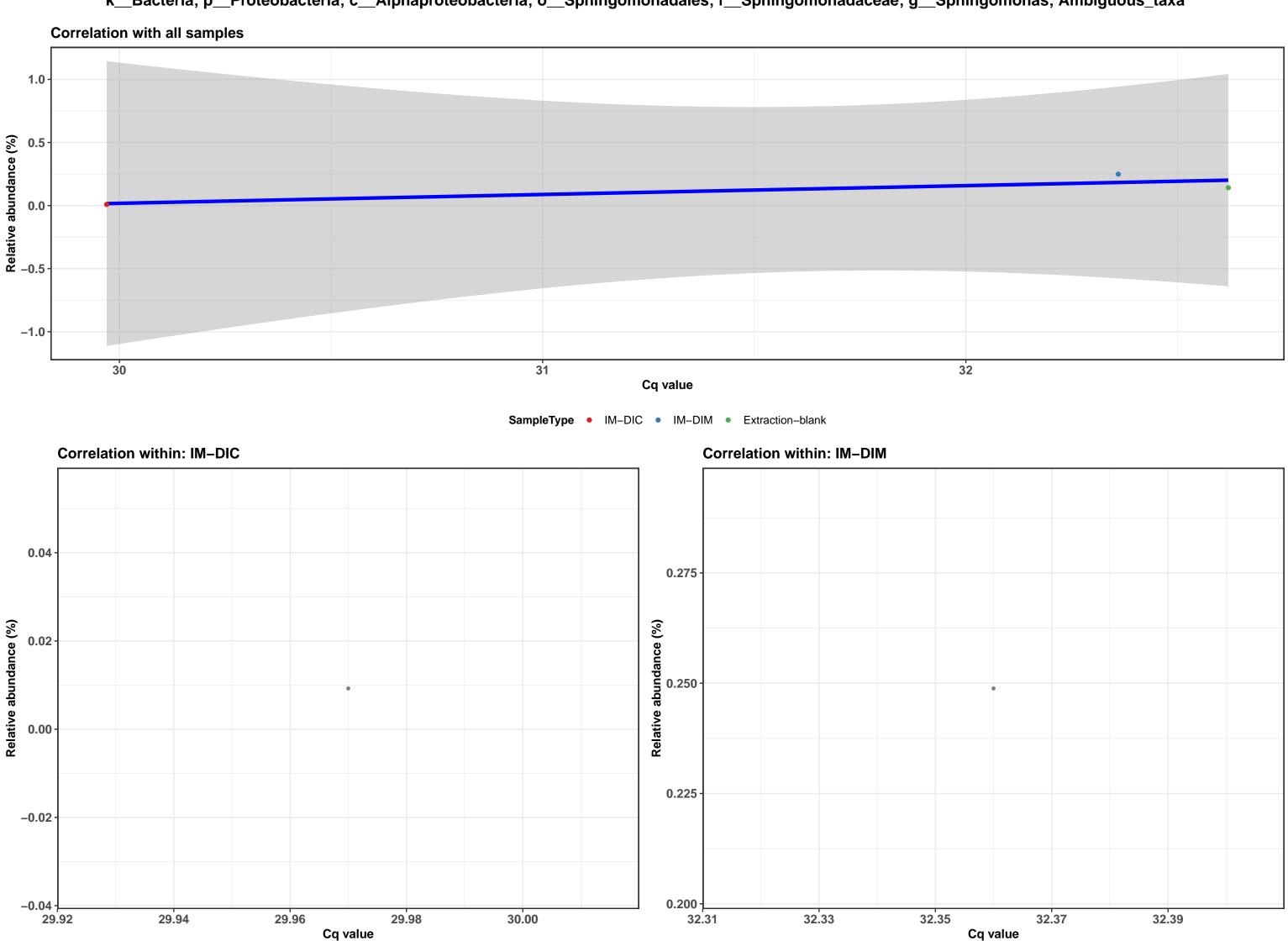
k\_\_Bacteria; p\_\_Actinobacteria; c\_\_Actinobacteria; o\_\_Micrococcales; f\_\_Micrococcaceae; g\_\_Micrococcus; Ambiguous\_taxa



k\_\_Bacteria; p\_\_Bacteroidetes; c\_\_Bacteroidia; o\_\_Cytophagales; f\_\_Hymenobacteraceae; g\_\_Hymenobacter; s\_\_uncultured bacterium



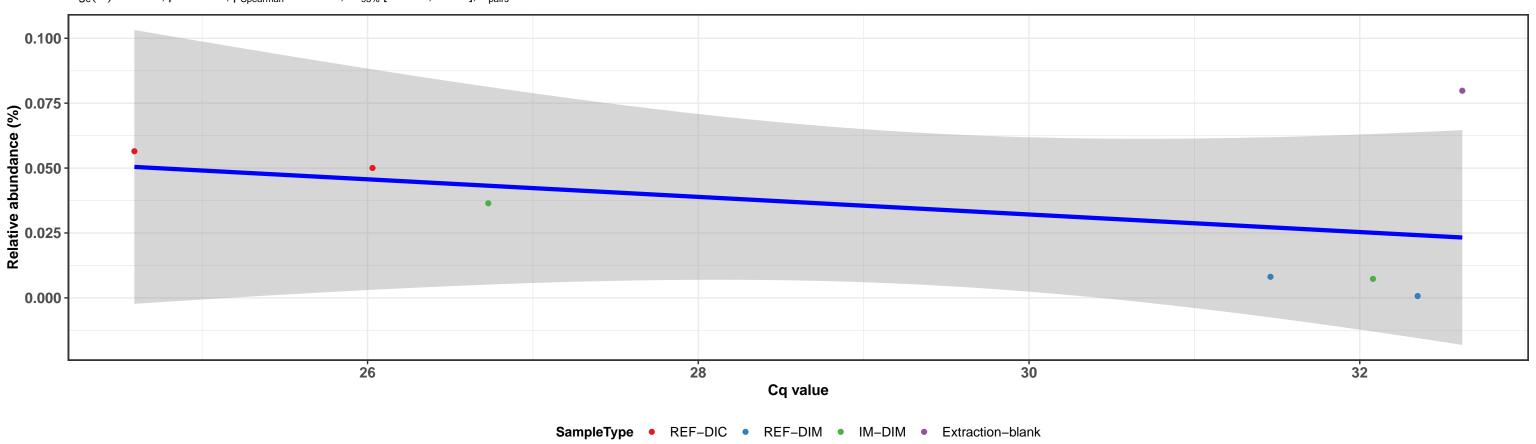
k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Alphaproteobacteria; o\_\_Sphingomonadales; f\_\_Sphingomonadaceae; g\_\_Sphingomonas; Ambiguous\_taxa

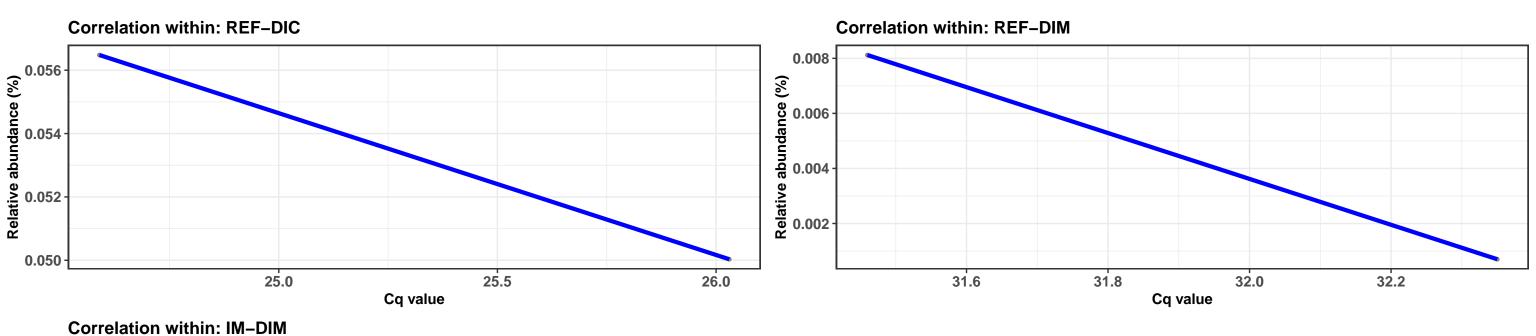


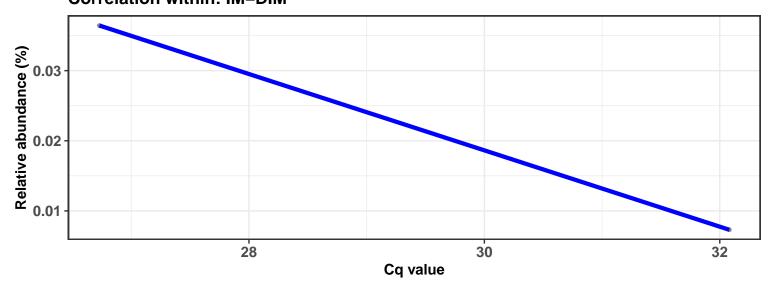
k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Alphaproteobacteria; o\_\_Sphingomonadales; f\_\_Sphingomonadaceae; g\_\_Sphingomonas; Ambiguous\_taxa



 $log_e(S) = 4.248, p = 0.589, \hat{\rho}_{Spearman} = -0.250, Cl_{95\%} [-1.334, 0.787], n_{pairs} = 7$ 



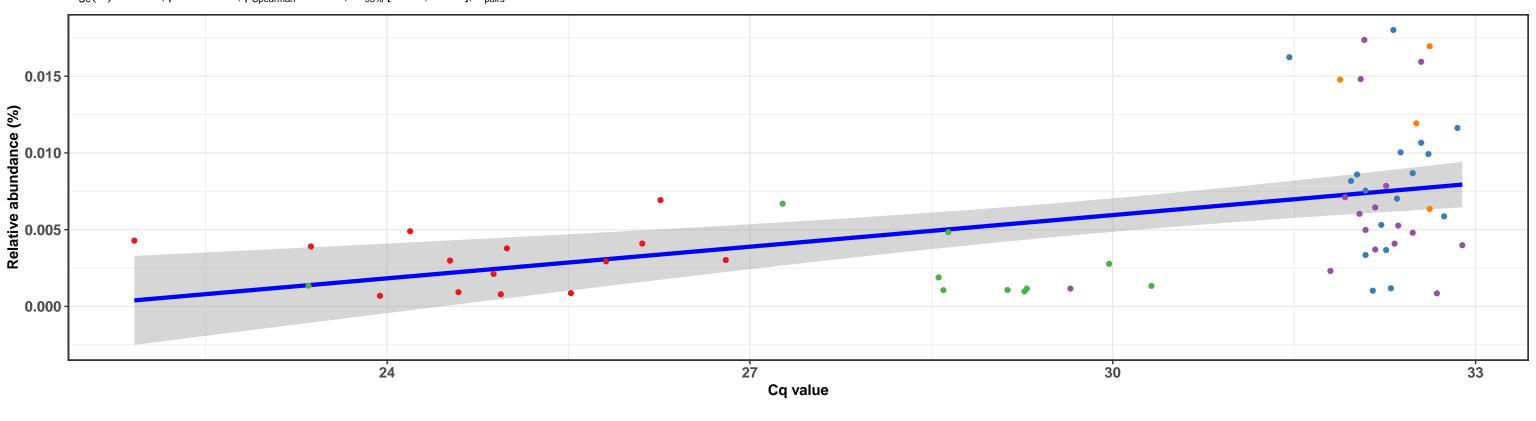




k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Gammaproteobacteria; o\_\_Pseudomonadales; f\_\_Pseudomonadaceae; g\_\_Pseudomonas; NA



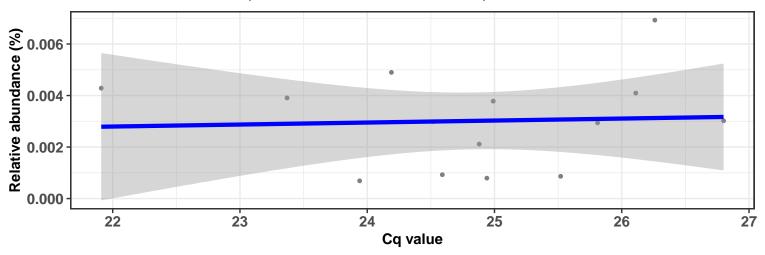
 $log_e(S) = 9.840, p = < 0.001, \hat{\rho}_{Spearman} = 0.504, Cl_{95\%} [0.314, 0.741], n_{pairs} = 61$ 



**SampleType** • REF-DIC • REF-DIM • IM-DIC • IM-DIM • Extraction-blank



 $log_e(S) = 6.064$ , p = 0.852,  $\widehat{\rho}_{Spearman} = 0.055$ ,  $Cl_{95\%}$  [-0.544, 0.655],  $n_{pairs} = 14$ 



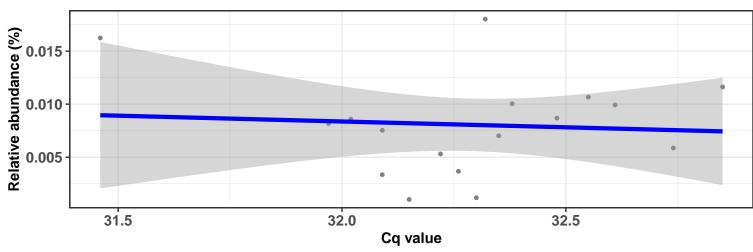
Correlation within: IM-DIC

 $log_e(S) = 5.357$ , p = 0.425,  $\hat{\rho}_{Spearman} = -0.285$ ,  $Cl_{95\%}$  [-0.970, 0.342],  $n_{pairs} = 10$ 0.0075 Relative abundance (%) 0.0050 25 27 29

Cq value

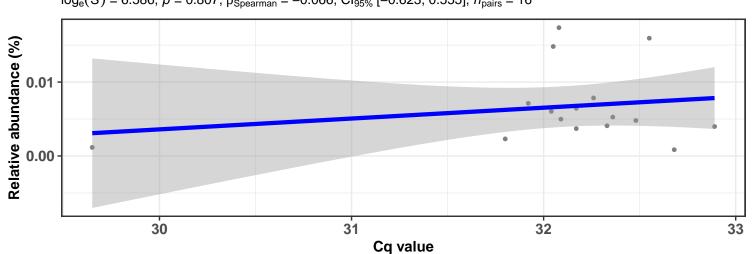
#### **Correlation within: REF-DIM**

 $log_e(S) = 6.421$ , p = 0.340,  $\widehat{\rho}_{Spearman} = 0.246$ ,  $Cl_{95\%}$  [-0.297, 0.753],  $n_{pairs} = 17$ 



#### **Correlation within: IM-DIM**

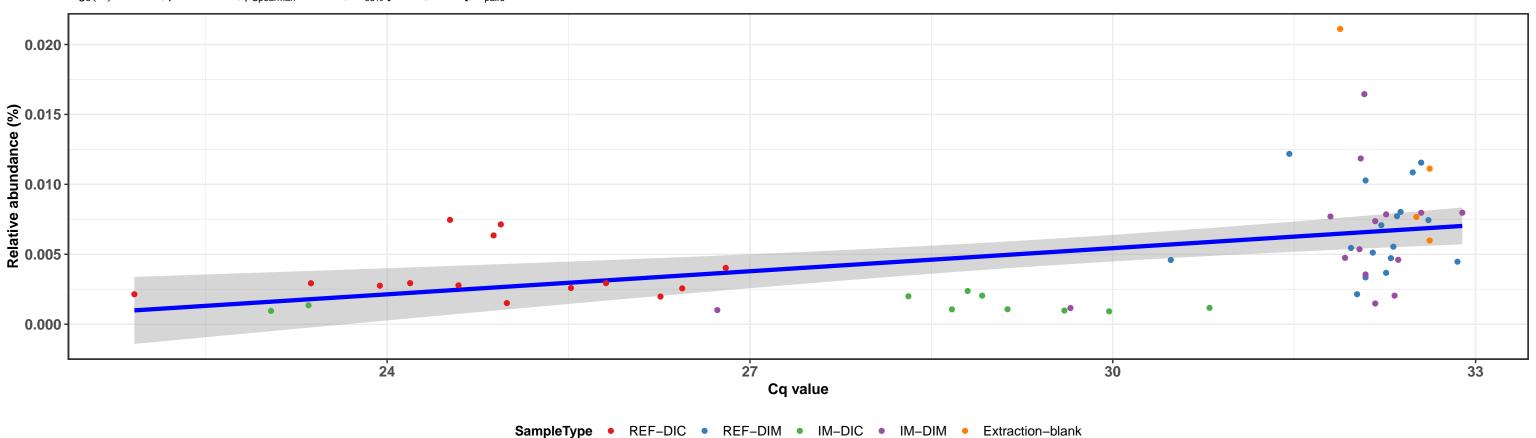
 $log_e(S) = 6.586$ , p = 0.807,  $\widehat{\rho}_{Spearman} = -0.066$ ,  $Cl_{95\%}$  [-0.623, 0.555],  $n_{pairs} = 16$ 



k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Gammaproteobacteria; o\_\_Pseudomonadales; f\_\_Pseudomonadaceae; g\_\_Pseudomonas; NA

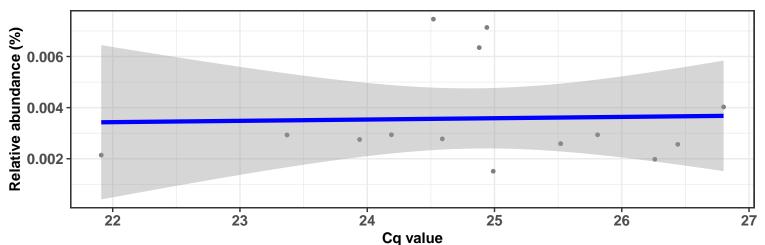


 $log_e(S) = 9.676$ , p = < 0.001,  $\hat{\rho}_{Spearman} = 0.557$ ,  $Cl_{95\%}$  [0.433, 0.714],  $n_{pairs} = 60$ 



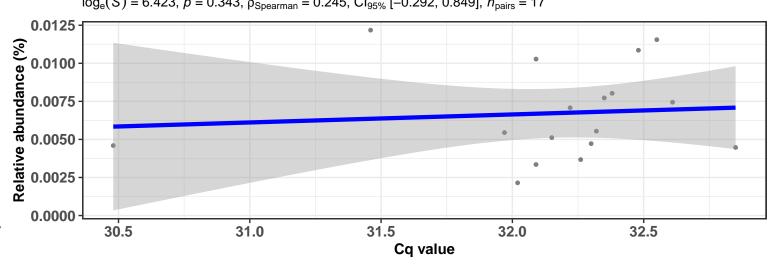


 $log_e(S) = 6.215$ , p = 0.737,  $\hat{\rho}_{Spearman} = -0.099$ ,  $Cl_{95\%}$  [-0.705, 0.496],  $n_{pairs} = 14$ 



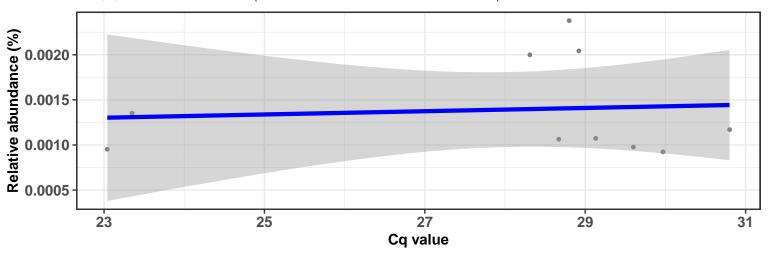
#### **Correlation within: REF-DIM**

 $log_e(S) = 6.423$ , p = 0.343,  $\widehat{\rho}_{Spearman} = 0.245$ ,  $Cl_{95\%}$  [-0.292, 0.849],  $n_{pairs} = 17$ 



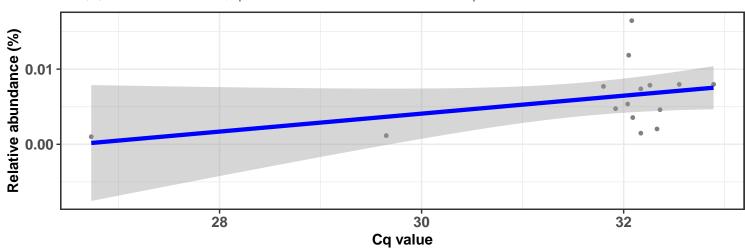
#### Correlation within: IM-DIC

 $log_e(S) = 5.268$ , p = 0.627,  $\hat{\rho}_{Spearman} = -0.176$ ,  $Cl_{95\%}$  [-0.908, 0.465],  $n_{pairs} = 10$ 



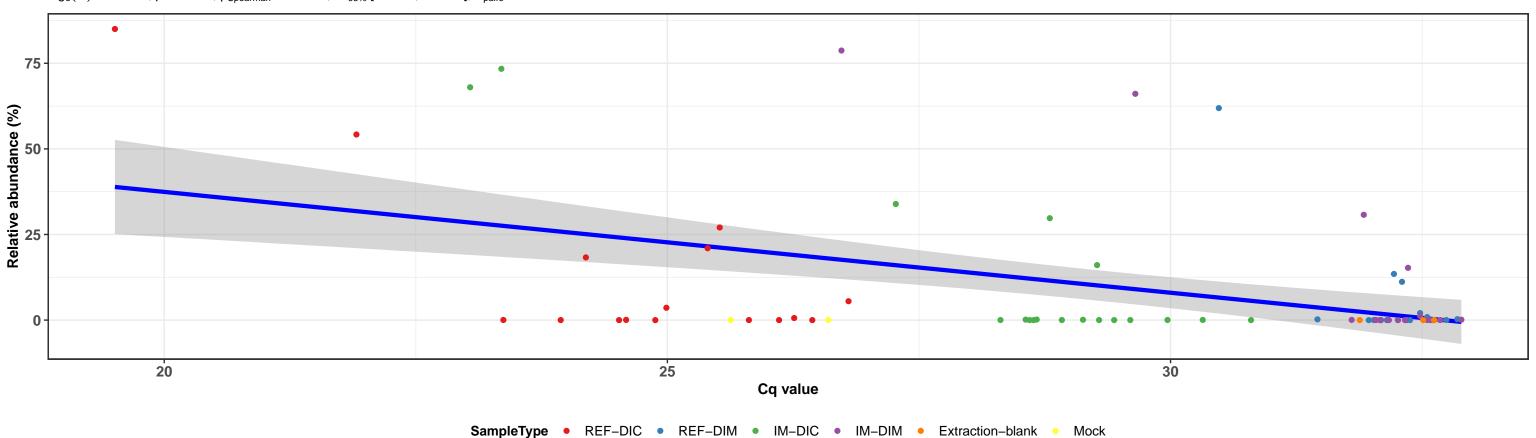
#### **Correlation within: IM-DIM**

 $log_e(S) = 5.908$ , p = 0.210,  $\hat{\rho}_{Spearman} = 0.343$ ,  $Cl_{95\%}$  [-0.216, 0.889],  $n_{pairs} = 15$ 



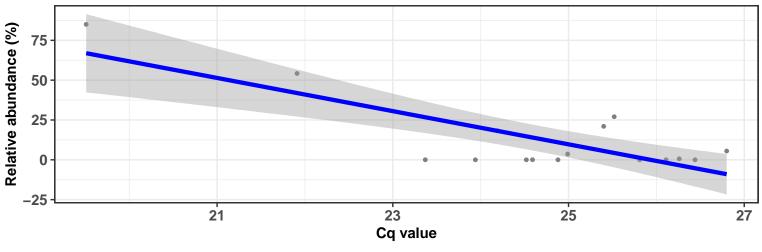
k\_Bacteria; p\_Proteobacteria; c\_Gammaproteobacteria; o\_Vibrionales; f\_Vibrionaceae; g\_Aliivibrio; s\_uncultured bacterium

 $log_e(S) = 11.335, p = 0.013, \hat{p}_{Spearman} = -0.291, Cl_{95\%} [-0.538, -0.072], n_{pairs} = 73$ 



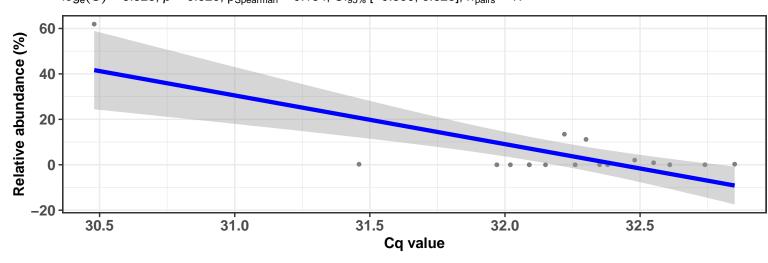
#### Correlation within: REF-DIC

 $log_e(S) = 6.764$ , p = 0.305,  $\hat{\rho}_{Spearman} = -0.274$ ,  $Cl_{95\%}$  [-0.844, 0.248],  $n_{pairs} = 16$ 



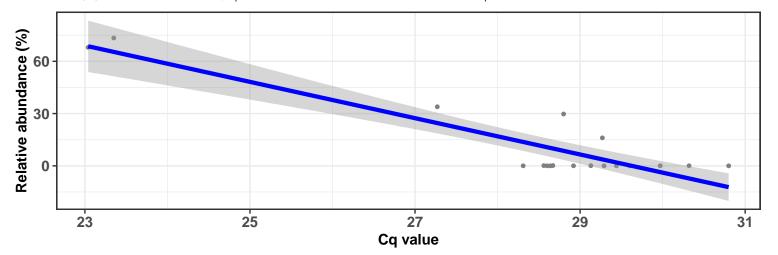
#### Correlation within: REF-DIM

 $log_e(S) = 6.525, p = 0.529, \hat{\rho}_{Spearman} = 0.164, Cl_{95\%} [-0.300, 0.623], n_{pairs} = 17$ 



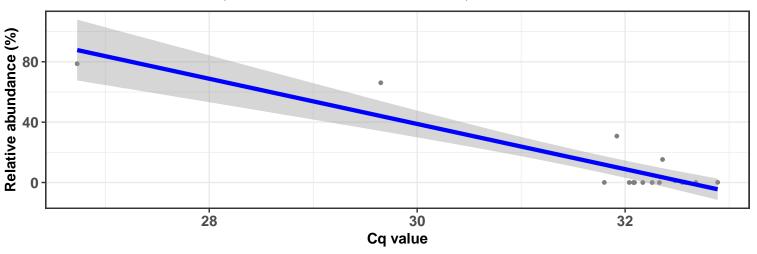
#### Correlation within: IM-DIC

 $log_e(S) = 7.297, p = 0.026, \hat{\rho}_{Spearman} = -0.523, Cl_{95\%} [-0.964, -0.128], n_{pairs} = 18$ 



#### Correlation within: IM-DIM

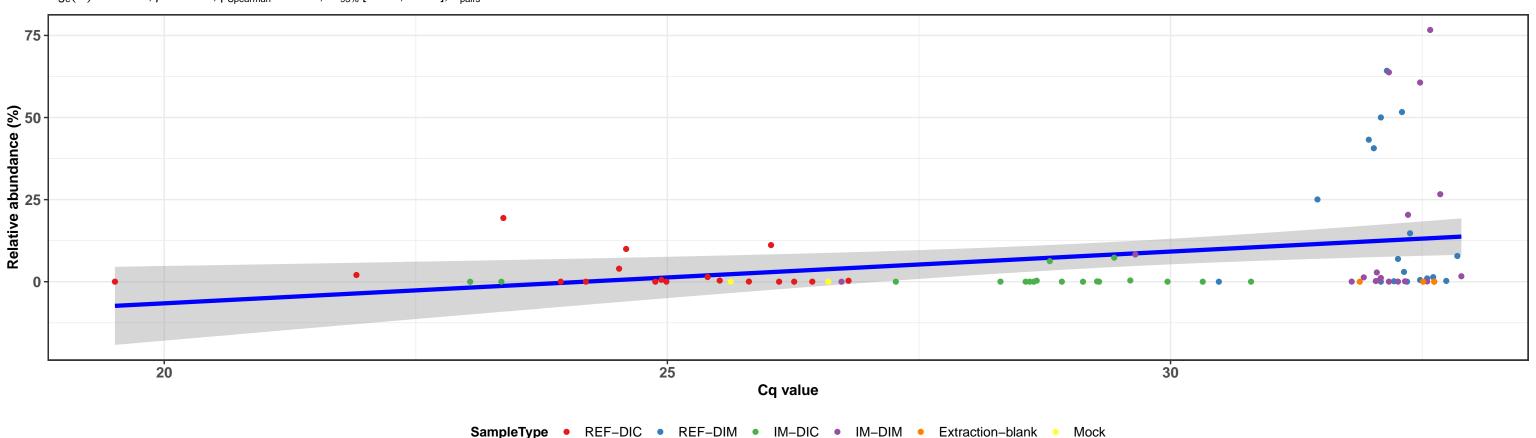
 $log_e(S) = 6.859, p = 0.125, \hat{\rho}_{Spearman} = -0.400, Cl_{95\%} [-0.945, 0.099], n_{pairs} = 16$ 



k\_Bacteria; p\_Spirochaetes; c\_Spirochaetia; o\_Brevinematales; f\_Brevinemataceae; g\_Brevinema; s\_Brevinema andersonii

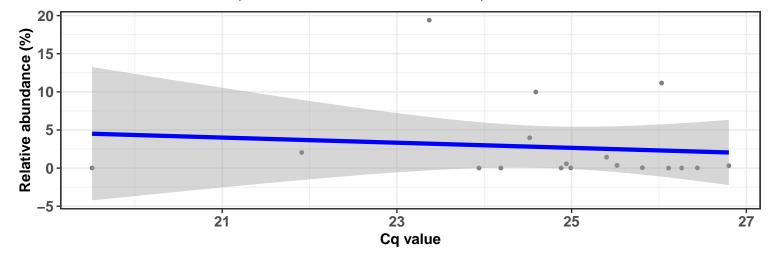


 $log_e(S) = 10.883, p = 0.004, \hat{\rho}_{Spearman} = 0.326, Cl_{95\%} [0.114, 0.554], n_{pairs} = 78$ 



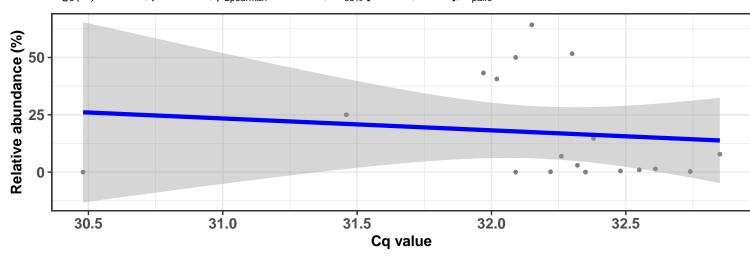
#### Correlation within: REF-DIC

 $log_e(S) = 7.063, p = 0.414, \hat{\rho}_{Spearman} = -0.205, Cl_{95\%} [-0.751, 0.291], n_{pairs} = 18$ 



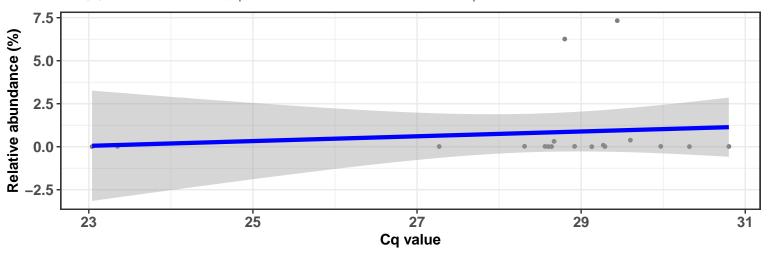
#### Correlation within: REF-DIM

 $log_e(S) = 7.044$ , p = 0.468,  $\hat{\rho}_{Spearman} = -0.183$ ,  $Cl_{95\%}$  [-0.747, 0.328],  $n_{pairs} = 18$ 



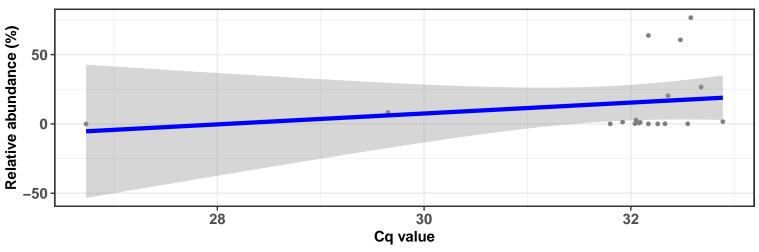
#### Correlation within: IM-DIC

 $log_e(S) = 6.631, p = 0.385, \hat{\rho}_{Spearman} = 0.218, Cl_{95\%} [-0.219, 0.694], n_{pairs} = 18$ 

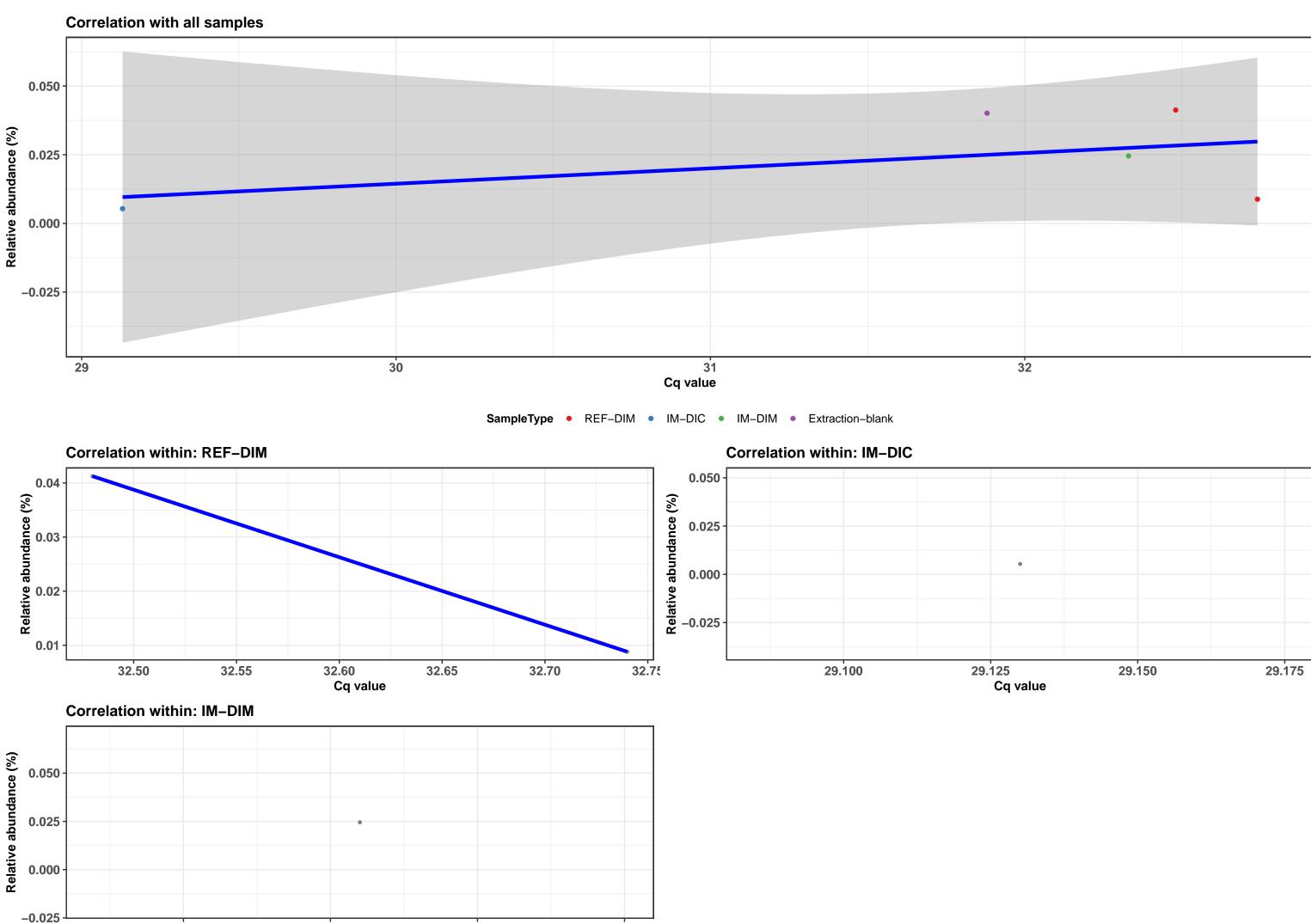


#### Correlation within: IM-DIM

 $log_e(S) = 6.359, p = 0.097, \hat{\rho}_{Spearman} = 0.404, Cl_{95\%} [0.050, 0.826], n_{pairs} = 18$ 



k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Alphaproteobacteria; o\_\_Rhizobiales; f\_\_Devosiaceae; g\_\_Devosia; NA



32.375

32.325

Cq value

32.350

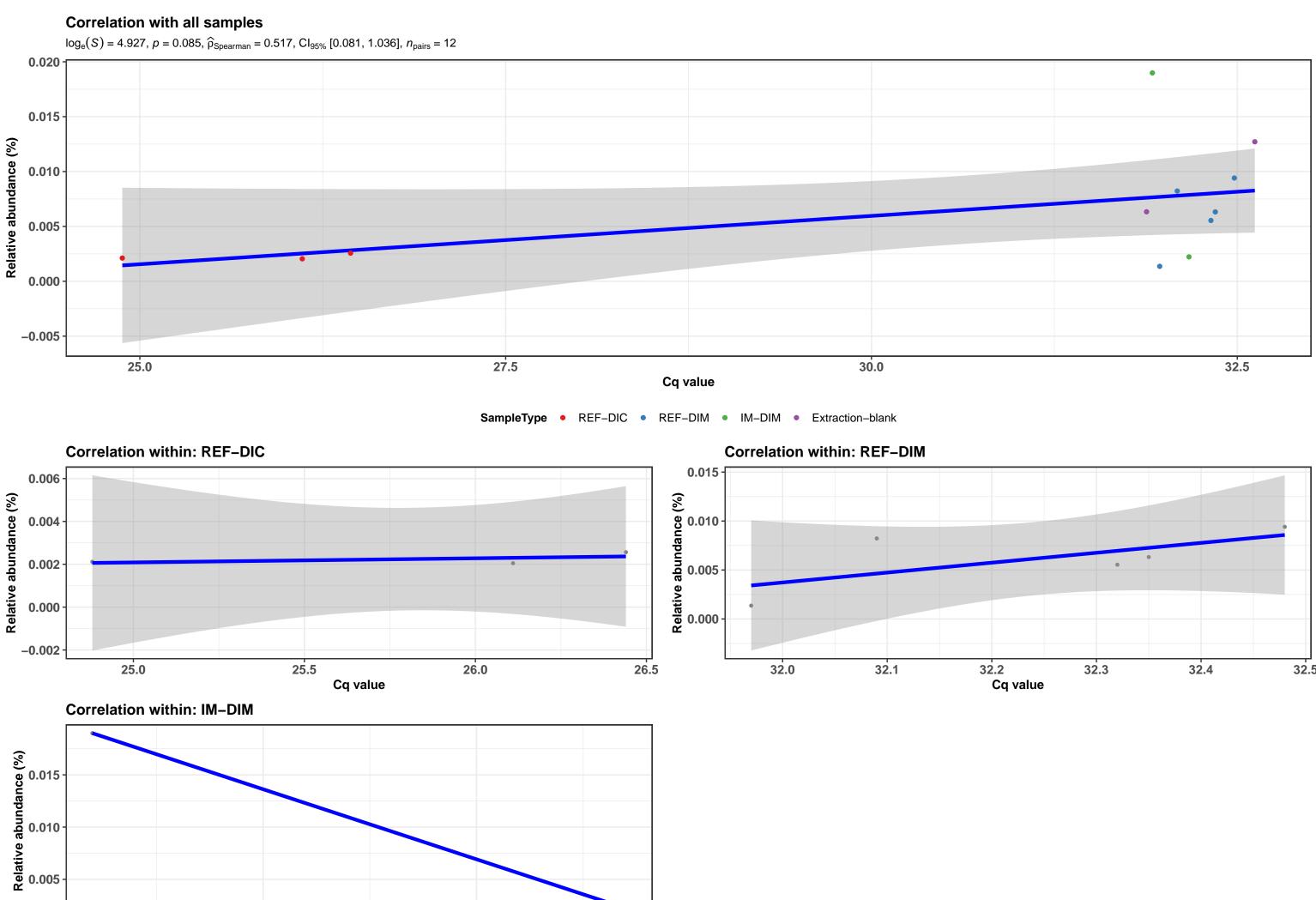
32.300

k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Alphaproteobacteria; o\_\_Sphingomonadales; f\_\_Sphingomonadaceae; g\_\_Sphingomonas; s\_\_Sphingomonas aurantiaca **Correlation with all samples**  $\log_{\rm e}(S) = 3.912, \, \rho = 0.320, \, \widehat{\rho}_{\rm Spearman} = 0.405, \, {\rm Cl}_{95\%} \, [-0.198, \, 1.167], \, n_{\rm pairs} = 8$ 0.0 -0.1 25.0 27.5 32.5 30.0 Cq value **SampleType** • REF-DIC • REF-DIM • IM-DIC • IM-DIM • Extraction-blank **Correlation within: REF-DIM** Correlation within: REF-DIC 0.125 Relative abundance (%) Relative abundance (%) 0.000 0.000 0.005 0.000 24 25 32.50 32.40 32.45 32.55 32.60 Cq value Cq value Correlation within: IM-DIC Correlation within: IM-DIM 0.050 0.16 Relative abundance (%) 0.025 0.000 -0.025 0.04 32.25 29.41 29.43 29.47 32.00 32.50 32.75 29.39 29.45 29.4 31.75 Cq value Cq value

Relative abundance (%)

Relative abundance (%)

k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Alphaproteobacteria; o\_\_Caulobacterales; f\_\_Caulobacteraceae; g\_\_Brevundimonas; Ambiguous\_taxa



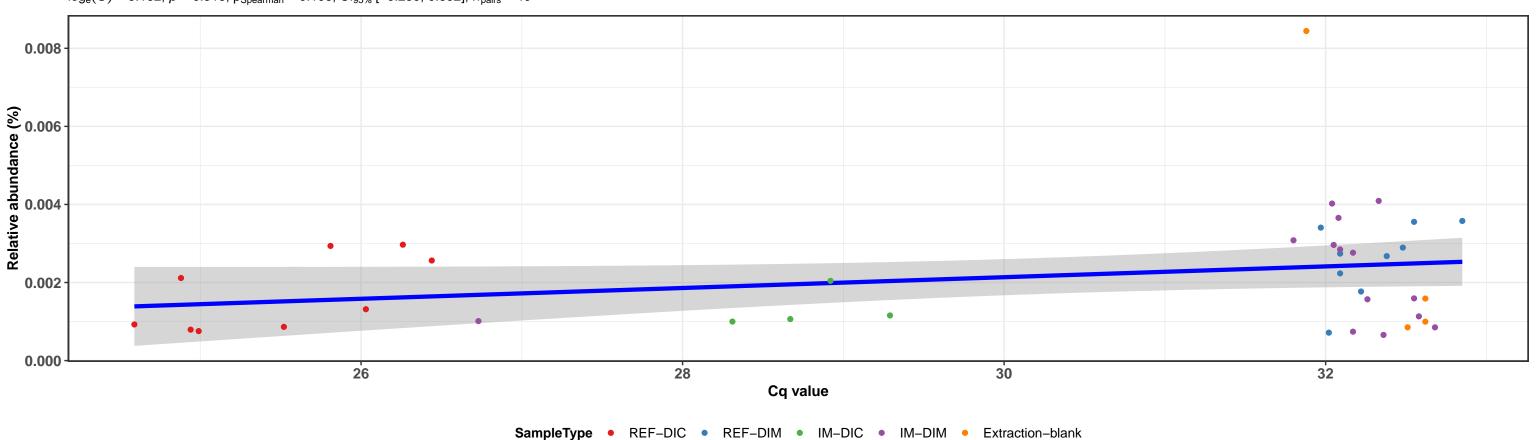
32.0

Cq value

32.1

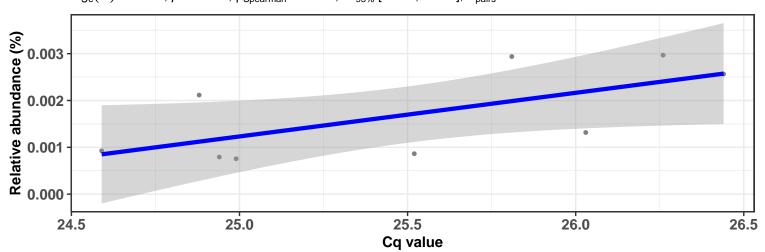


 $log_e(S) = 9.162$ , p = 0.516,  $\widehat{\rho}_{Spearman} = 0.106$ ,  $Cl_{95\%}$  [-0.259, 0.392],  $n_{pairs} = 40$ 



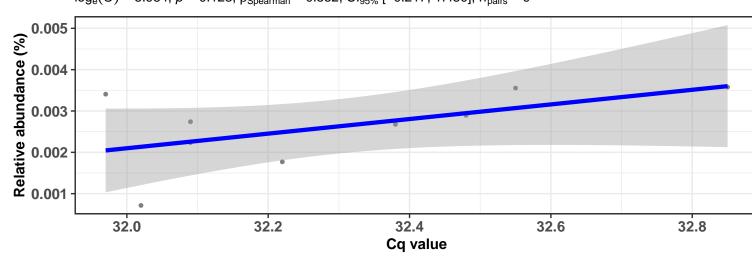


 $log_e(S) = 3.951, p = 0.112, \hat{\rho}_{Spearman} = 0.567, Cl_{95\%} [0.152, 1.039], n_{pairs} = 9$ 



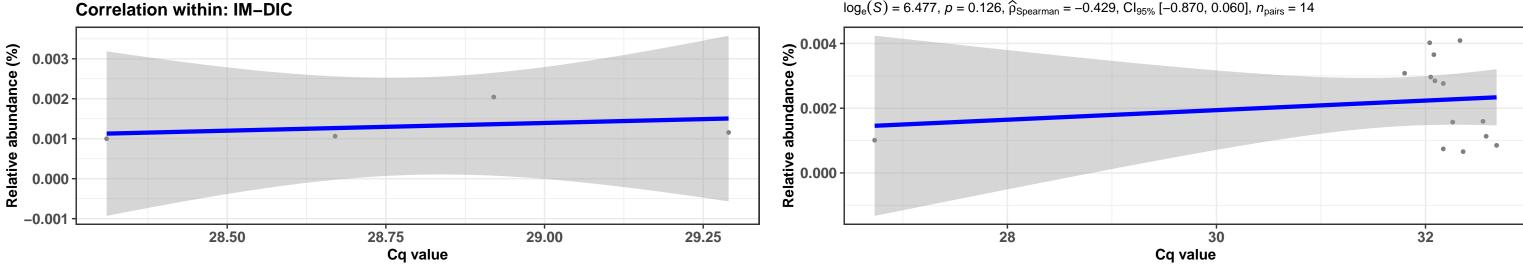
#### **Correlation within: REF-DIM**

 $\log_{\rm e}(S) = 3.984, \, p = 0.123, \, \widehat{\rho}_{\rm Spearman} = 0.552, \, {\rm CI}_{95\%} \, [-0.217, \, 1.450], \, n_{\rm pairs} = 9$ 

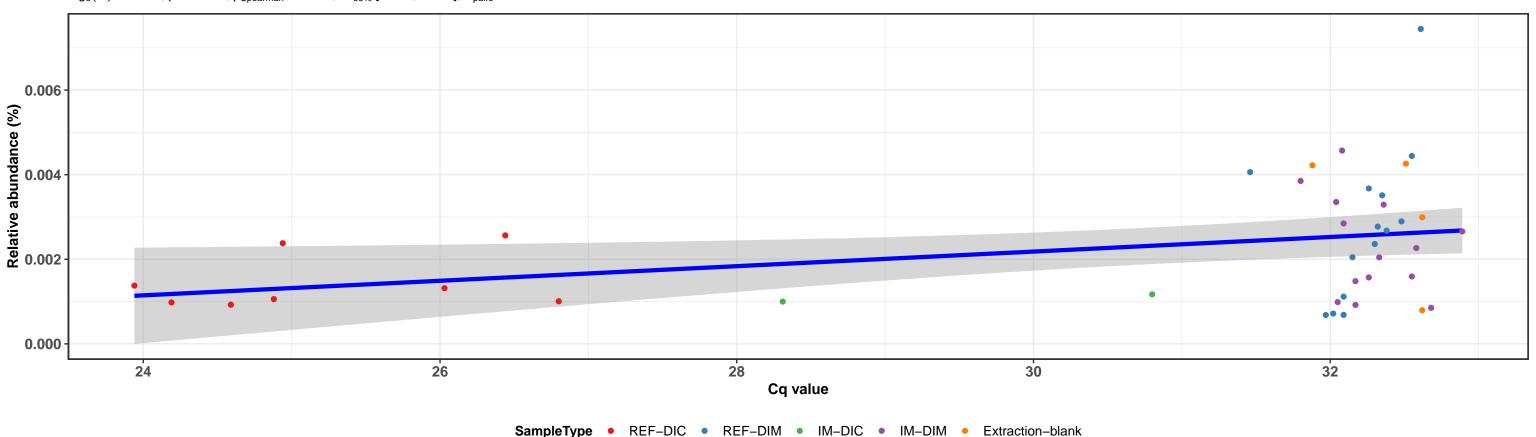


#### **Correlation within: IM-DIM**

 $\log_{e}(S) = 6.477, p = 0.126, \hat{\rho}_{Spearman} = -0.429, Cl_{95\%} [-0.870, 0.060], n_{pairs} = 14$ 

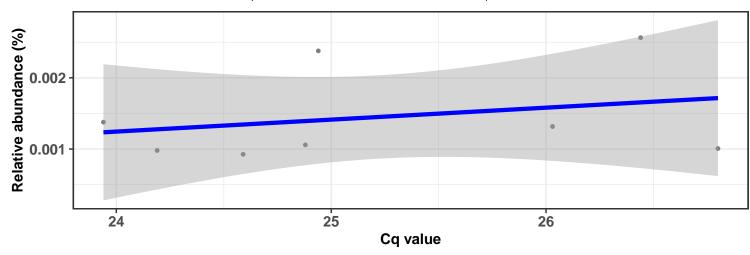


 $\log_{e}(S) = 9.077, p = 0.061, \hat{\rho}_{Spearman} = 0.291, Cl_{95\%} [0.052, 0.611], n_{pairs} = 42$ 



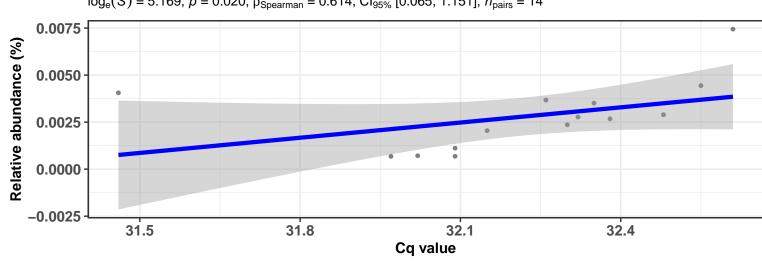
#### **Correlation within: REF-DIC**

 $log_e(S) = 4.094$ , p = 0.493,  $\hat{\rho}_{Spearman} = 0.286$ ,  $Cl_{95\%}$  [-0.420, 1.135],  $n_{pairs} = 8$ 



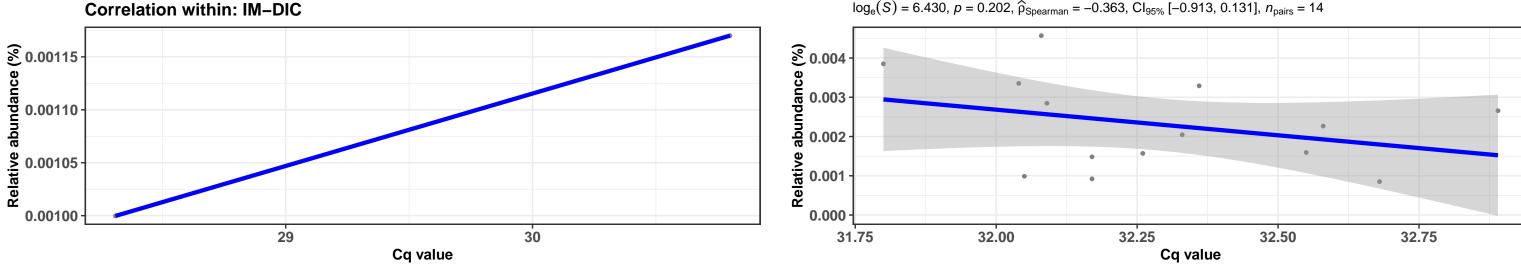
#### **Correlation within: REF-DIM**

 $\log_{e}(S) = 5.169, p = 0.020, \hat{\rho}_{Spearman} = 0.614, Cl_{95\%} [0.065, 1.151], n_{pairs} = 14$ 



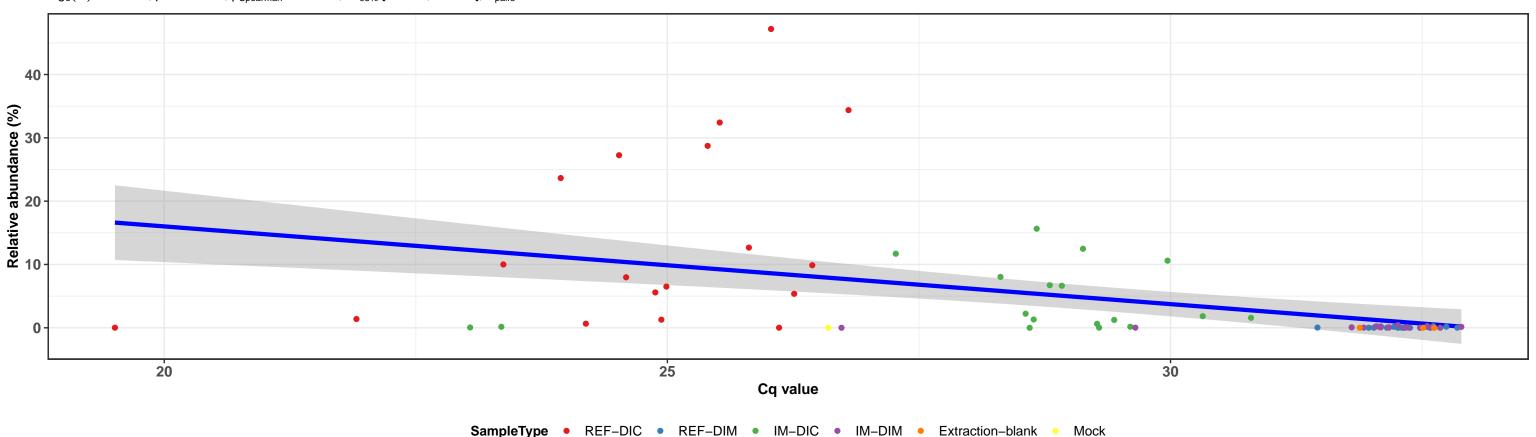
#### Correlation within: IM-DIM

 $\log_{\rm e}(S) = 6.430, \, p = 0.202, \, \widehat{\rho}_{\rm Spearman} = -0.363, \, {\rm Cl}_{95\%} \, [-0.913, \, 0.131], \, n_{\rm pairs} = 14$ 



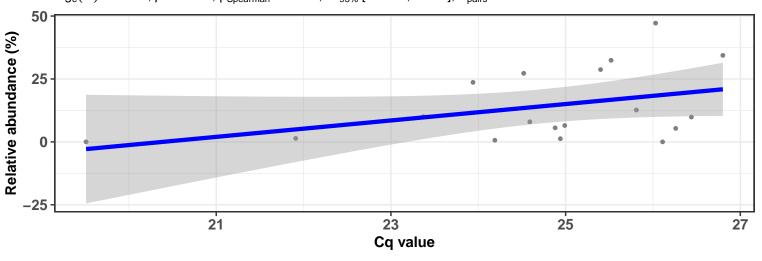
k\_\_Bacteria; p\_\_Tenericutes; c\_\_Mollicutes; o\_\_Mycoplasmatales; f\_\_Mycoplasmataceae; g\_\_Mycoplasma; s\_\_uncultured bacterium

 $log_e(S) = 11.658$ , p = < 0.001,  $\widehat{\rho}_{Spearman} = -0.581$ ,  $Cl_{95\%}$  [-0.724, -0.445],  $n_{pairs} = 76$ 

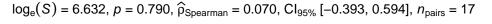


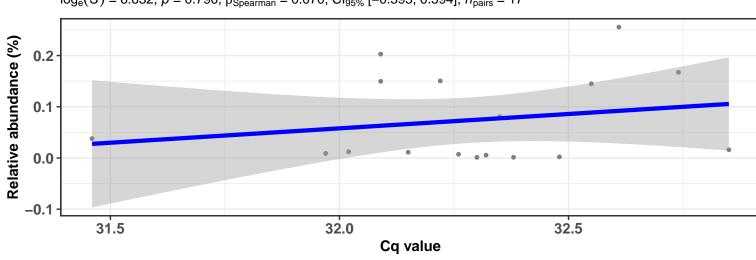


 $log_e(S) = 6.480, p = 0.185, \hat{\rho}_{Spearman} = 0.327, Cl_{95\%} [-0.146, 0.842], n_{pairs} = 18$ 



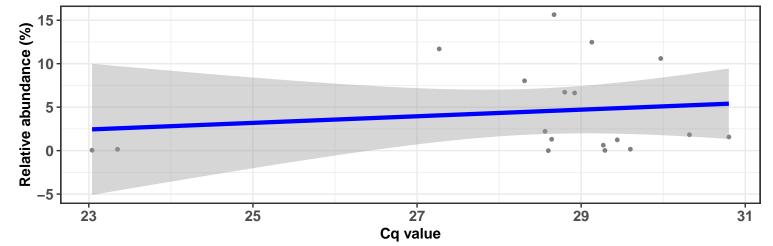
# **Correlation within: REF-DIM**





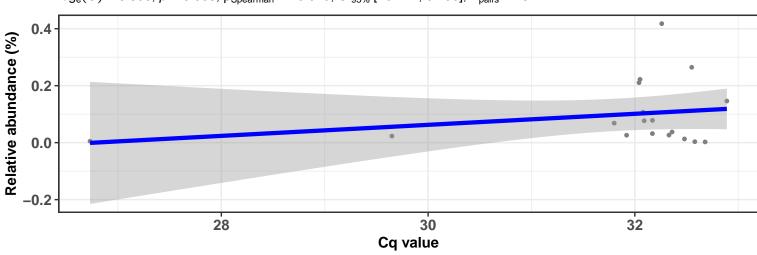
#### Correlation within: IM-DIC

 $log_e(S) = 6.837, p = 0.880, \hat{\rho}_{Spearman} = 0.038, Cl_{95\%} [-0.426, 0.524], n_{pairs} = 18$ 



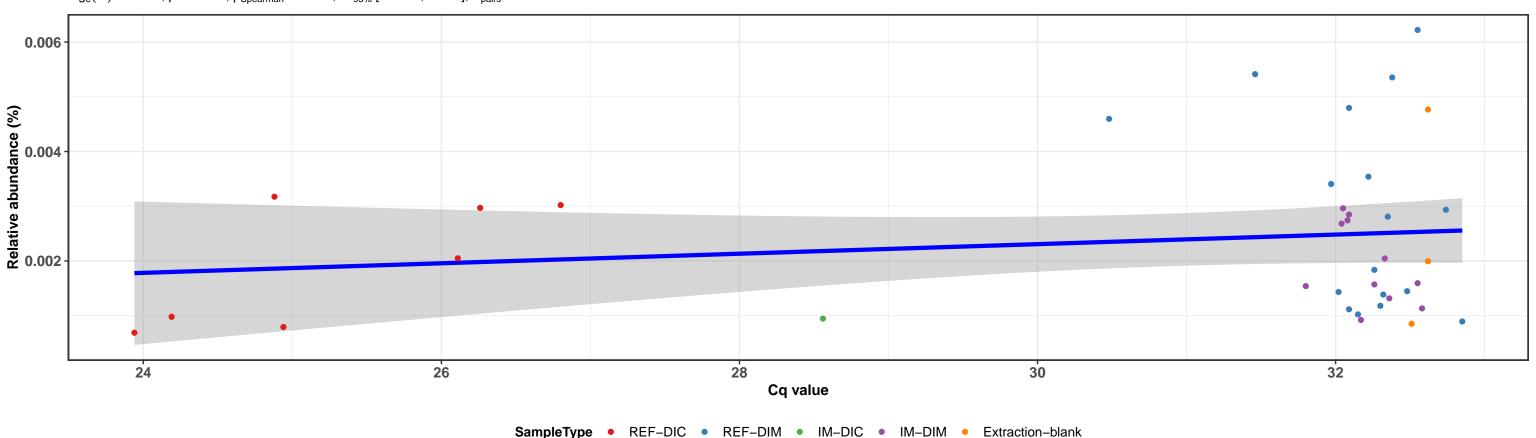
#### Correlation within: IM-DIM

$$log_e(S) = 6.890, p = 0.958, \hat{\rho}_{Spearman} = -0.013, Cl_{95\%} [-0.441, 0.455], n_{pairs} = 18$$



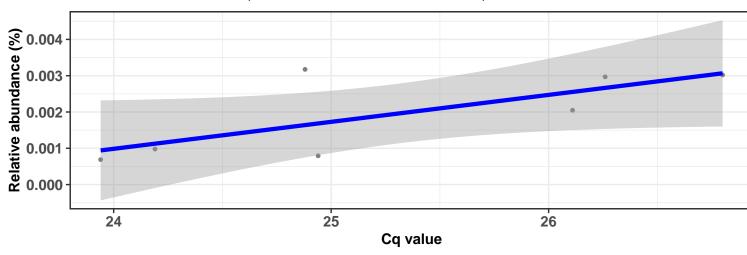


 $log_e(S) = 9.183, p = 0.927, \hat{\rho}_{Spearman} = 0.015, Cl_{95\%} [-0.383, 0.388], n_{pairs} = 39$ 

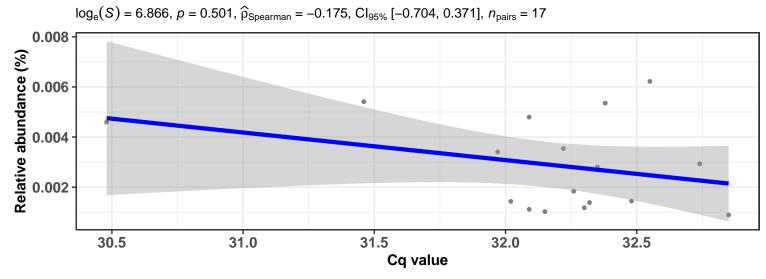


#### Correlation within: REF-DIC

 $log_e(S) = 3.178$ , p = 0.180,  $\hat{\rho}_{Spearman} = 0.571$ ,  $Cl_{95\%}$  [-0.276, 1.562],  $n_{pairs} = 7$ 

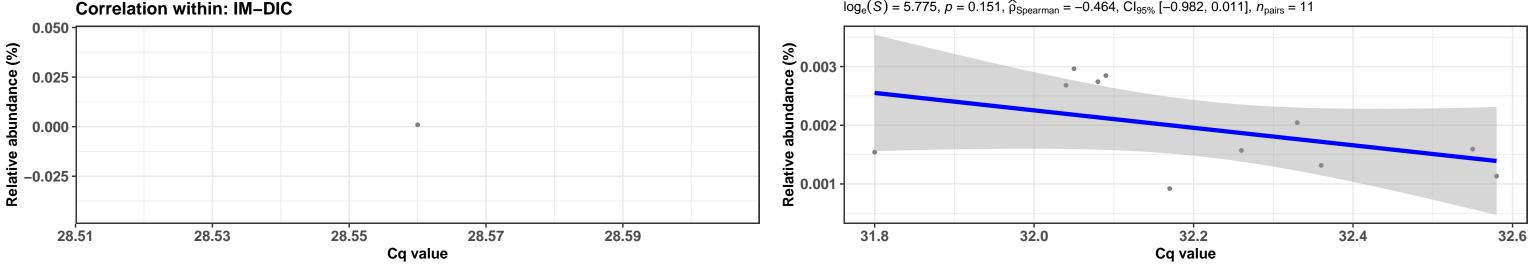


#### **Correlation within: REF-DIM**



#### **Correlation within: IM-DIM**

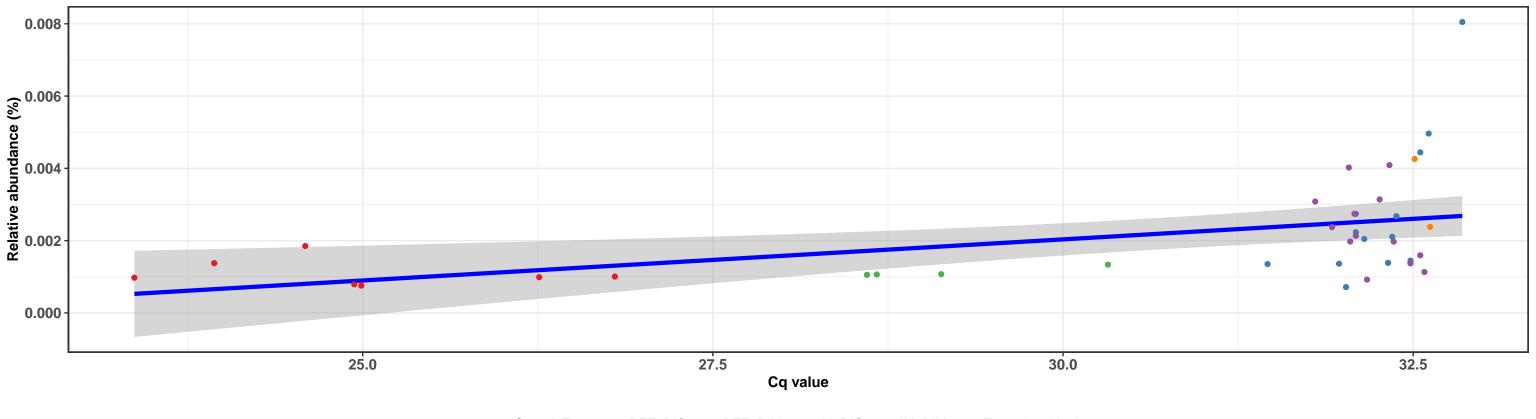
 $log_e(S) = 5.775$ , p = 0.151,  $\hat{\rho}_{Spearman} = -0.464$ ,  $Cl_{95\%}$  [-0.982, 0.011],  $n_{pairs} = 11$ 

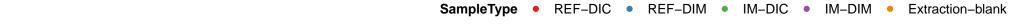


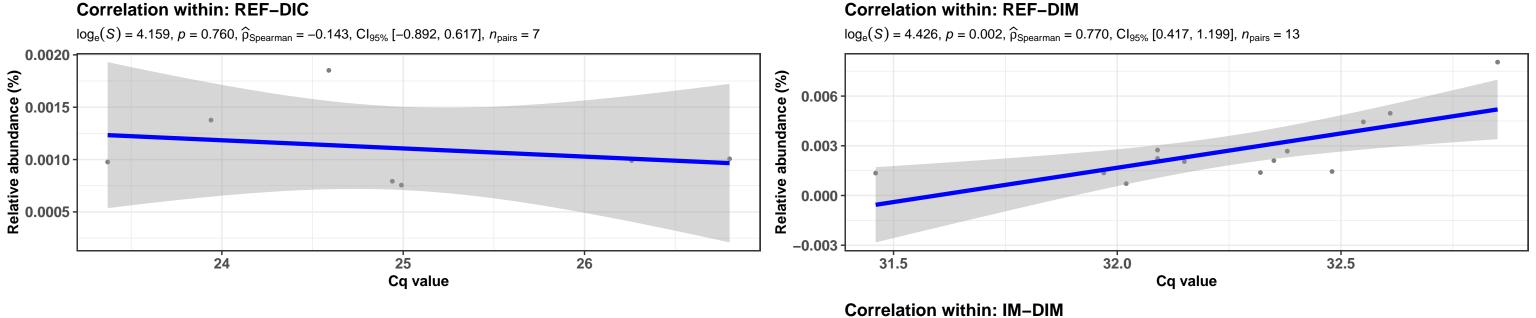
k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Gammaproteobacteria; o\_\_Pseudomonadales; f\_\_Pseudomonadaceae; g\_\_Pseudomonas; NA

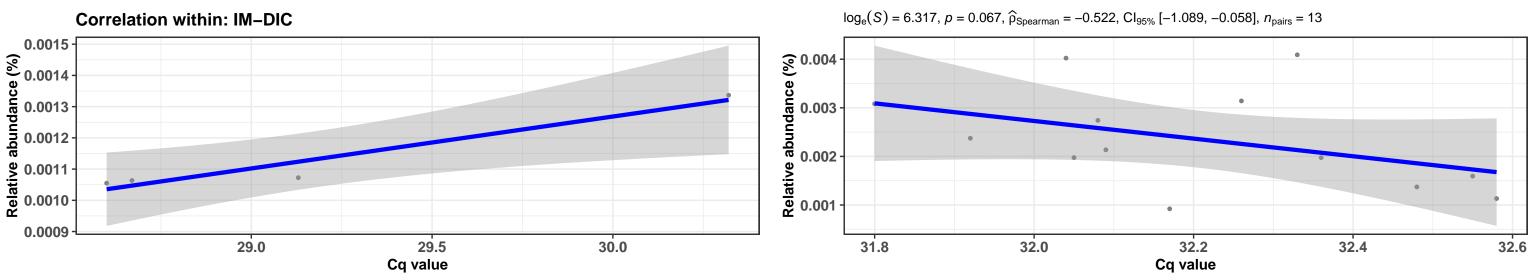


 $log_e(S) = 8.286, p = < 0.001, \hat{\rho}_{Spearman} = 0.598, Cl_{95\%} [0.393, 0.834], n_{pairs} = 39$ 



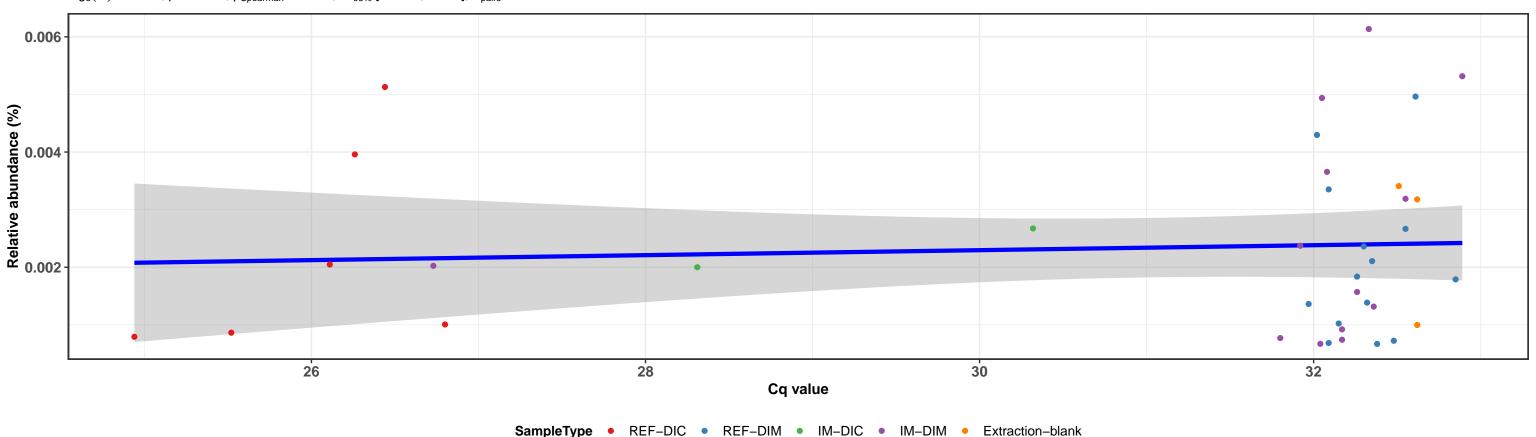






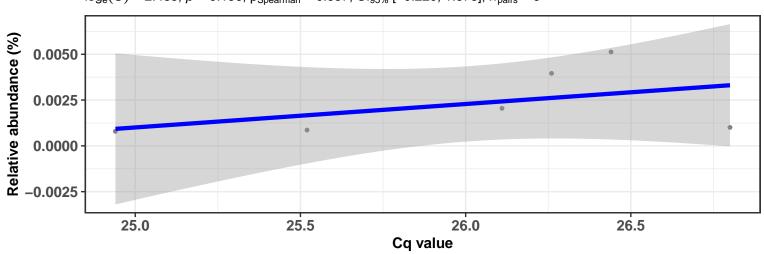


 $log_e(S) = 8.996$ , p = 0.483,  $\widehat{\rho}_{Spearman} = 0.117$ ,  $Cl_{95\%}$  [-0.210, 0.481],  $n_{pairs} = 38$ 



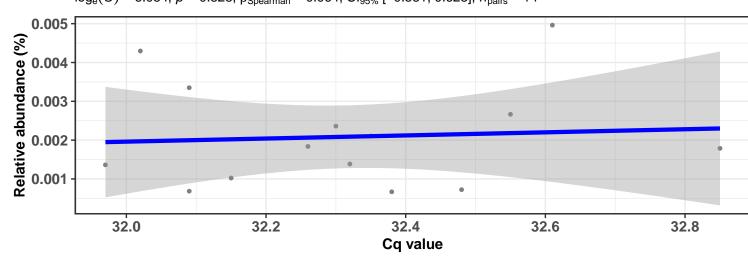
#### Correlation within: REF-DIC

 $log_e(S) = 2.485$ , p = 0.156,  $\hat{\rho}_{Spearman} = 0.657$ ,  $Cl_{95\%}$  [-0.220, 1.678],  $n_{pairs} = 6$ 



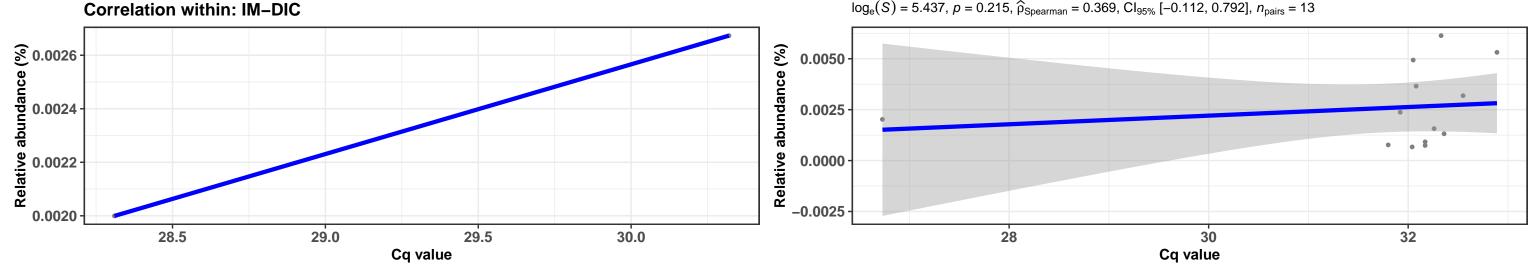
#### **Correlation within: REF-DIM**

 $log_e(S) = 6.054$ , p = 0.828,  $\widehat{\rho}_{Spearman} = 0.064$ ,  $Cl_{95\%}$  [-0.581, 0.623],  $n_{pairs} = 14$ 



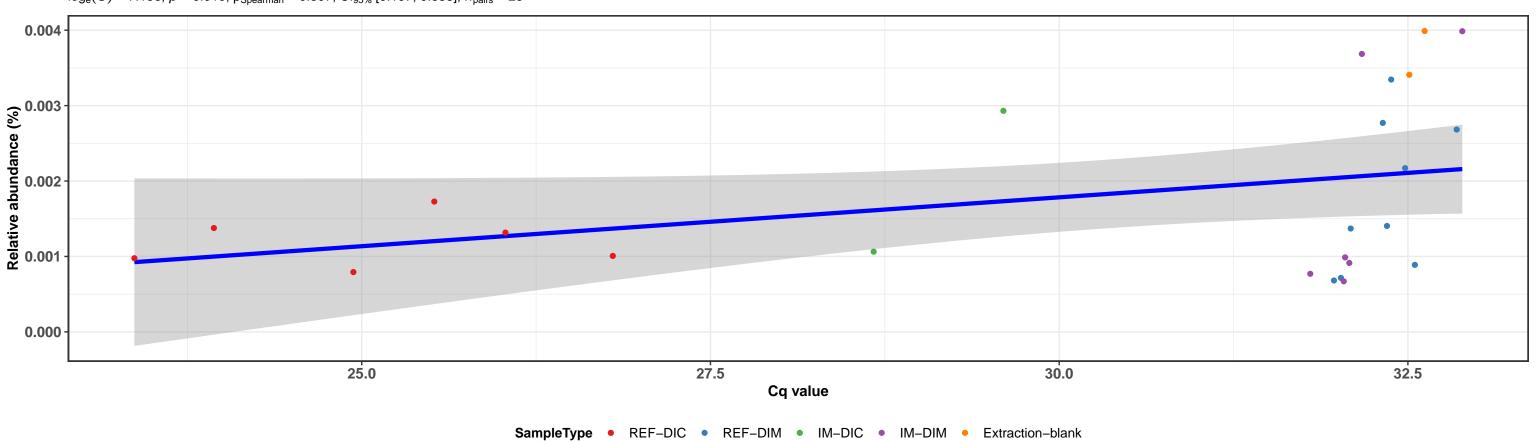
#### Correlation within: IM-DIM

 $log_e(S) = 5.437$ , p = 0.215,  $\widehat{\rho}_{Spearman} = 0.369$ ,  $Cl_{95\%}$  [-0.112, 0.792],  $n_{pairs} = 13$ 



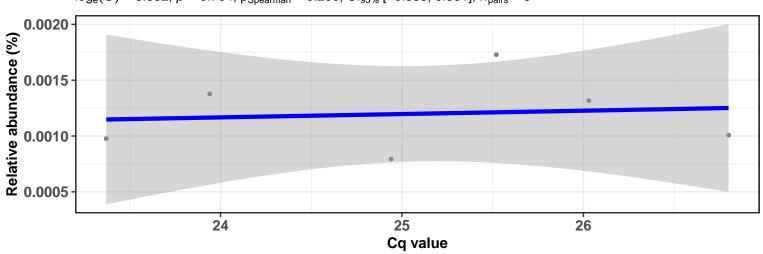


 $\log_{e}(S) = 7.156, p = 0.010, \hat{\rho}_{Spearman} = 0.507, Cl_{95\%} [0.197, 0.888], n_{pairs} = 25$ 



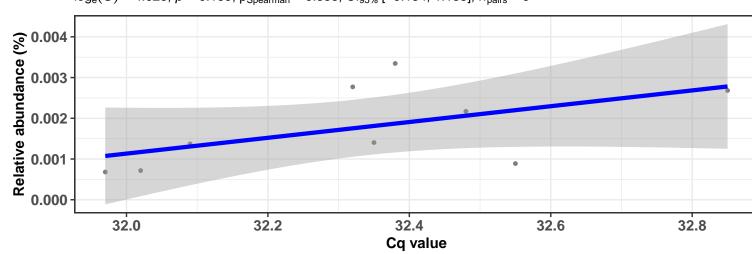


 $log_e(S) = 3.332, p = 0.704, \hat{\rho}_{Spearman} = 0.200, Cl_{95\%} [-0.585, 0.931], n_{pairs} = 6$ 



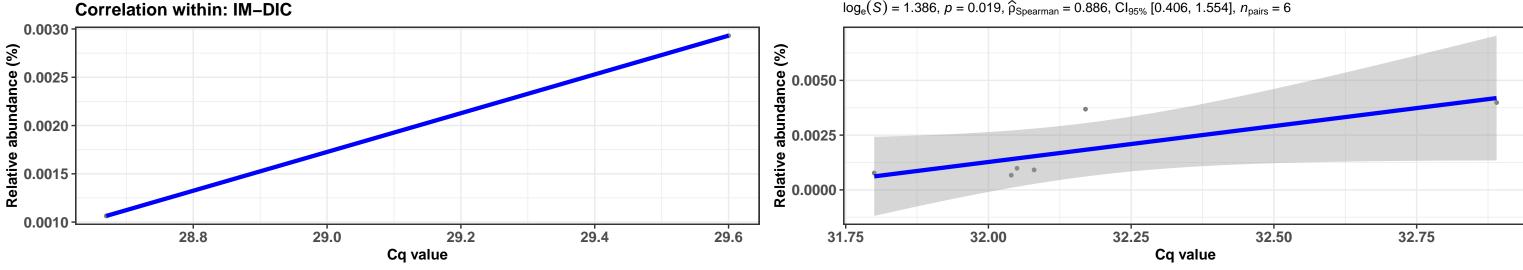
#### **Correlation within: REF-DIM**

 $log_e(S) = 4.025$ , p = 0.139,  $\widehat{\rho}_{Spearman} = 0.533$ ,  $Cl_{95\%}$  [-0.134, 1.158],  $n_{pairs} = 9$ 

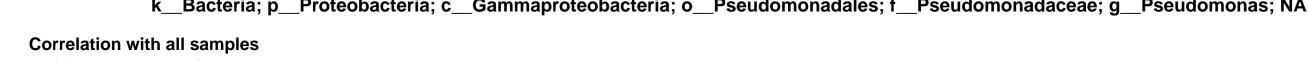


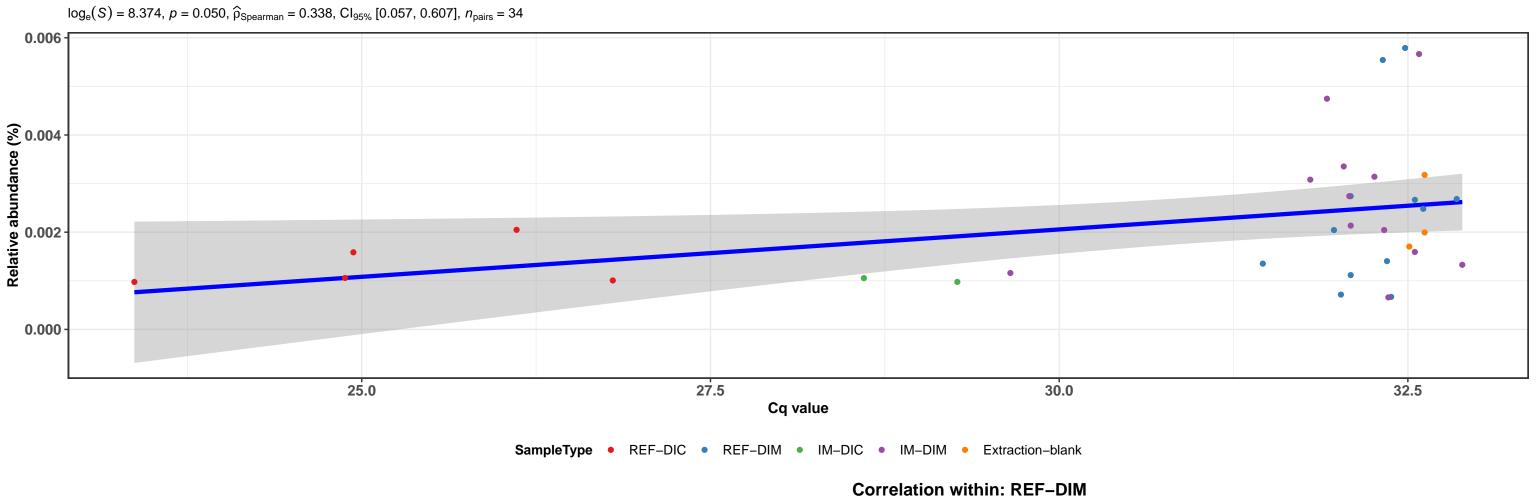
#### **Correlation within: IM-DIM**

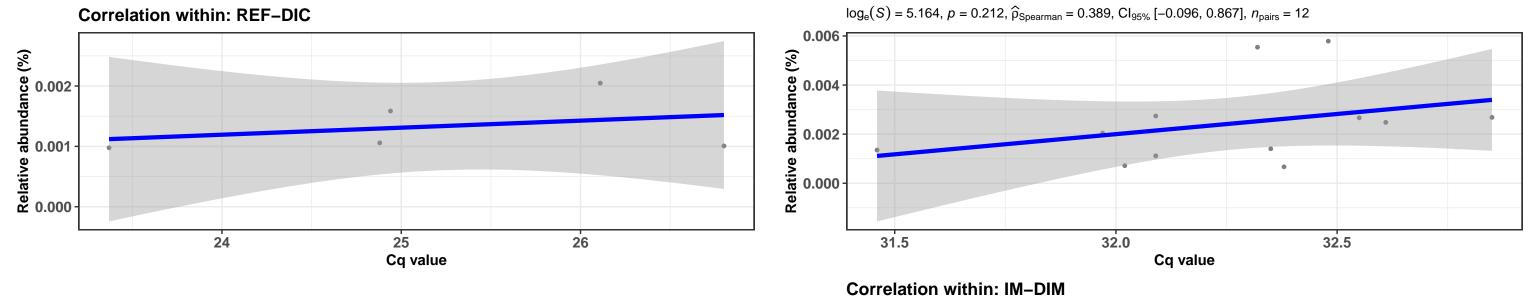
 $log_e(S) = 1.386$ , p = 0.019,  $\widehat{\rho}_{Spearman} = 0.886$ ,  $Cl_{95\%}$  [0.406, 1.554],  $n_{pairs} = 6$ 

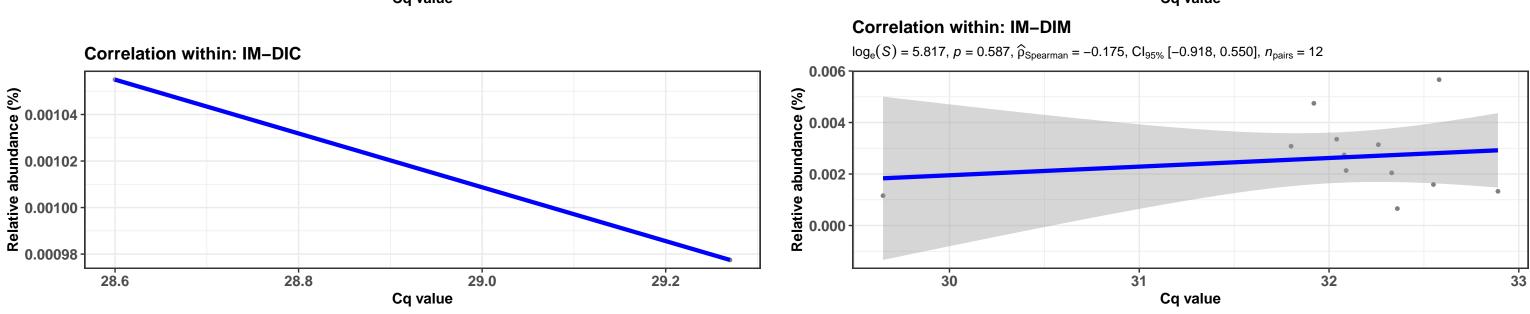


k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Gammaproteobacteria; o\_\_Pseudomonadales; f\_\_Pseudomonadaceae; g\_\_Pseudomonas; NA





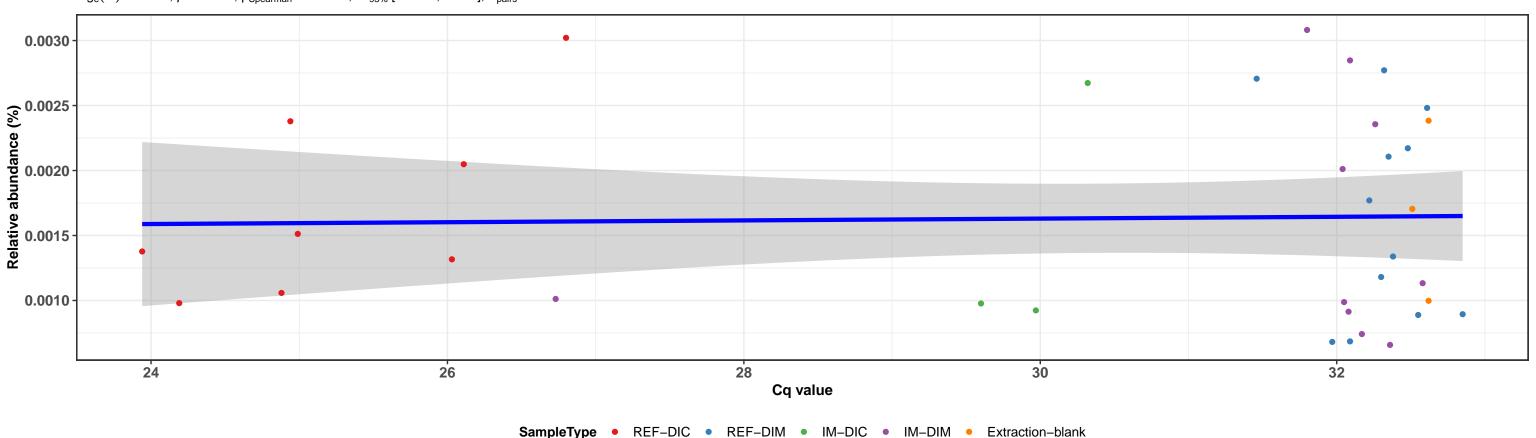




k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Gammaproteobacteria; o\_\_Pseudomonadales; f\_\_Pseudomonadaceae; g\_\_Pseudomonas; NA

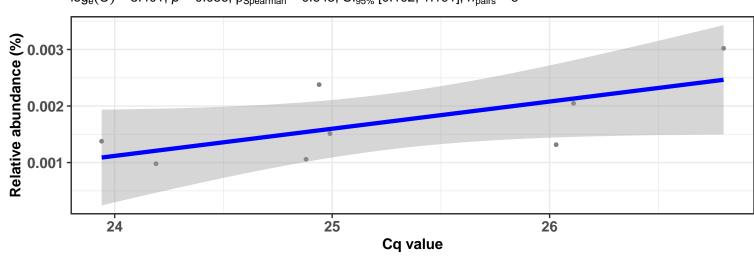


 $\log_{\rm e}(S) = 9.013, \ p = 0.745, \ \widehat{\rho}_{\rm Spearman} = -0.056, \ {\rm Cl}_{95\%} \ [-0.383, \ 0.252], \ n_{\rm pairs} = 36$ 



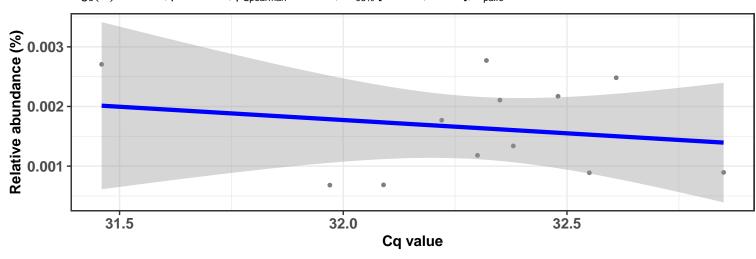


 $log_e(S) = 3.401$ , p = 0.086,  $\widehat{\rho}_{Spearman} = 0.643$ ,  $Cl_{95\%}$  [0.102, 1.191],  $n_{pairs} = 8$ 



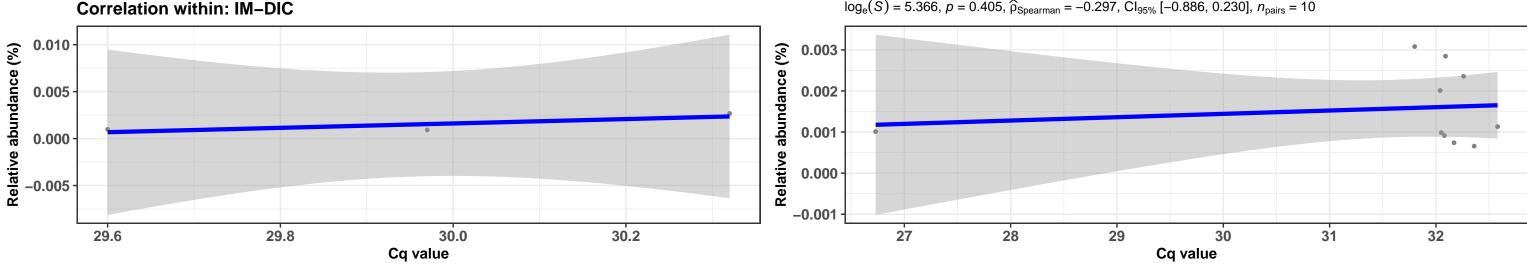
#### **Correlation within: REF-DIM**

 $log_e(S) = 5.583$ , p = 0.829,  $\hat{\rho}_{Spearman} = 0.070$ ,  $Cl_{95\%}$  [-0.620, 0.846],  $n_{pairs} = 12$ 



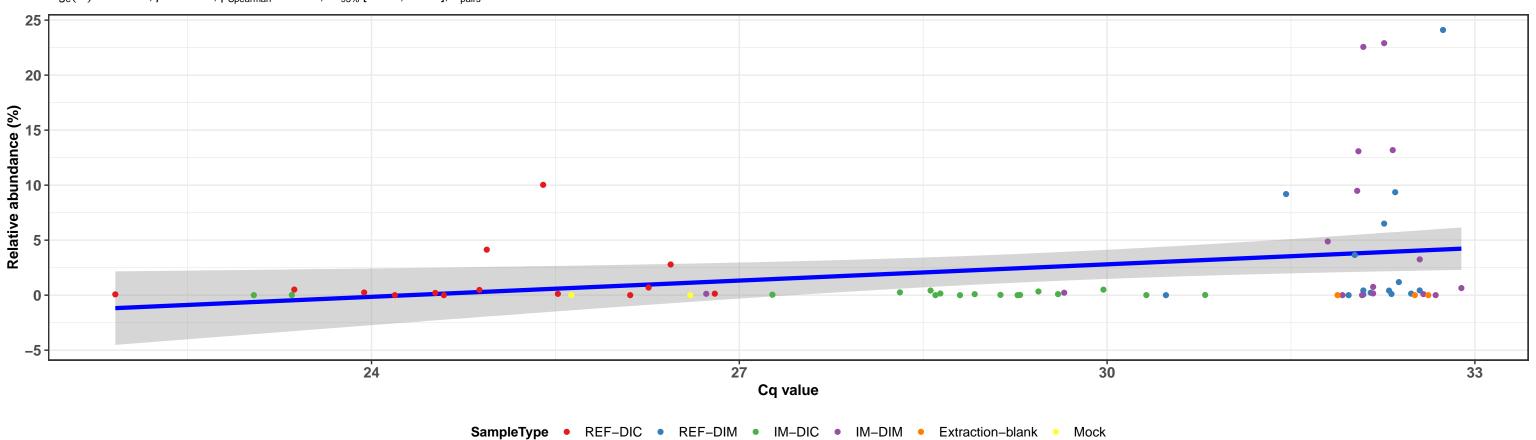
#### **Correlation within: IM-DIM**

 $log_e(S) = 5.366$ , p = 0.405,  $\widehat{\rho}_{Spearman} = -0.297$ ,  $Cl_{95\%}$  [-0.886, 0.230],  $n_{pairs} = 10$ 



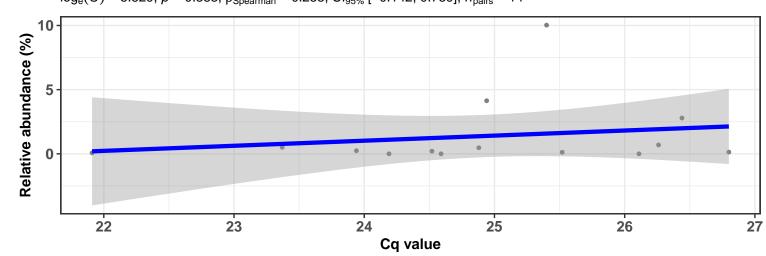


 $log_e(S) = 10.544$ , p = 0.048,  $\widehat{\rho}_{Spearman} = 0.243$ ,  $Cl_{95\%}$  [0.004, 0.438],  $n_{pairs} = 67$ 



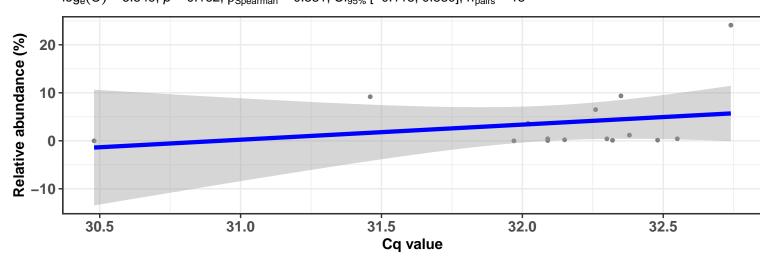


 $log_e(S) = 5.829, p = 0.383, \hat{\rho}_{Spearman} = 0.253, Cl_{95\%} [-0.142, 0.739], n_{pairs} = 14$ 



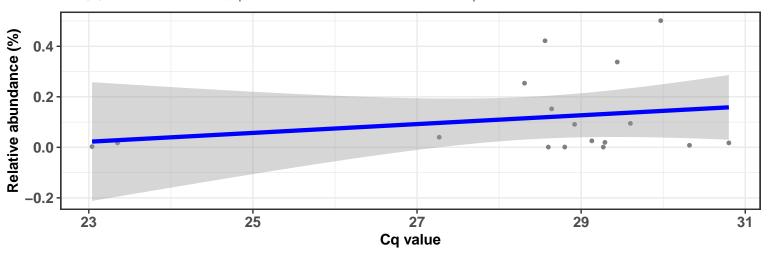
#### Correlation within: REF-DIM

 $log_e(S) = 5.849, p = 0.162, \hat{\rho}_{Spearman} = 0.381, Cl_{95\%} [-0.118, 0.880], n_{pairs} = 15$ 



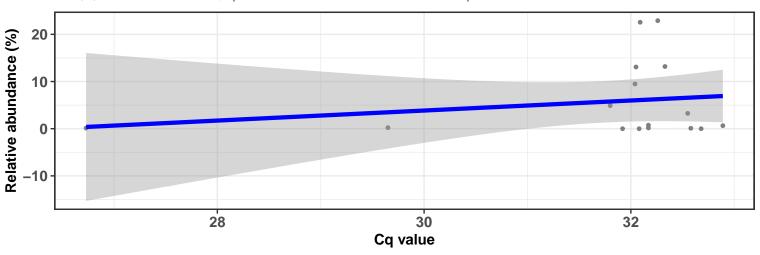
#### Correlation within: IM-DIC

 $log_e(S) = 6.628, p = 0.779, \hat{\rho}_{Spearman} = 0.074, Cl_{95\%} [-0.388, 0.539], n_{pairs} = 17$ 

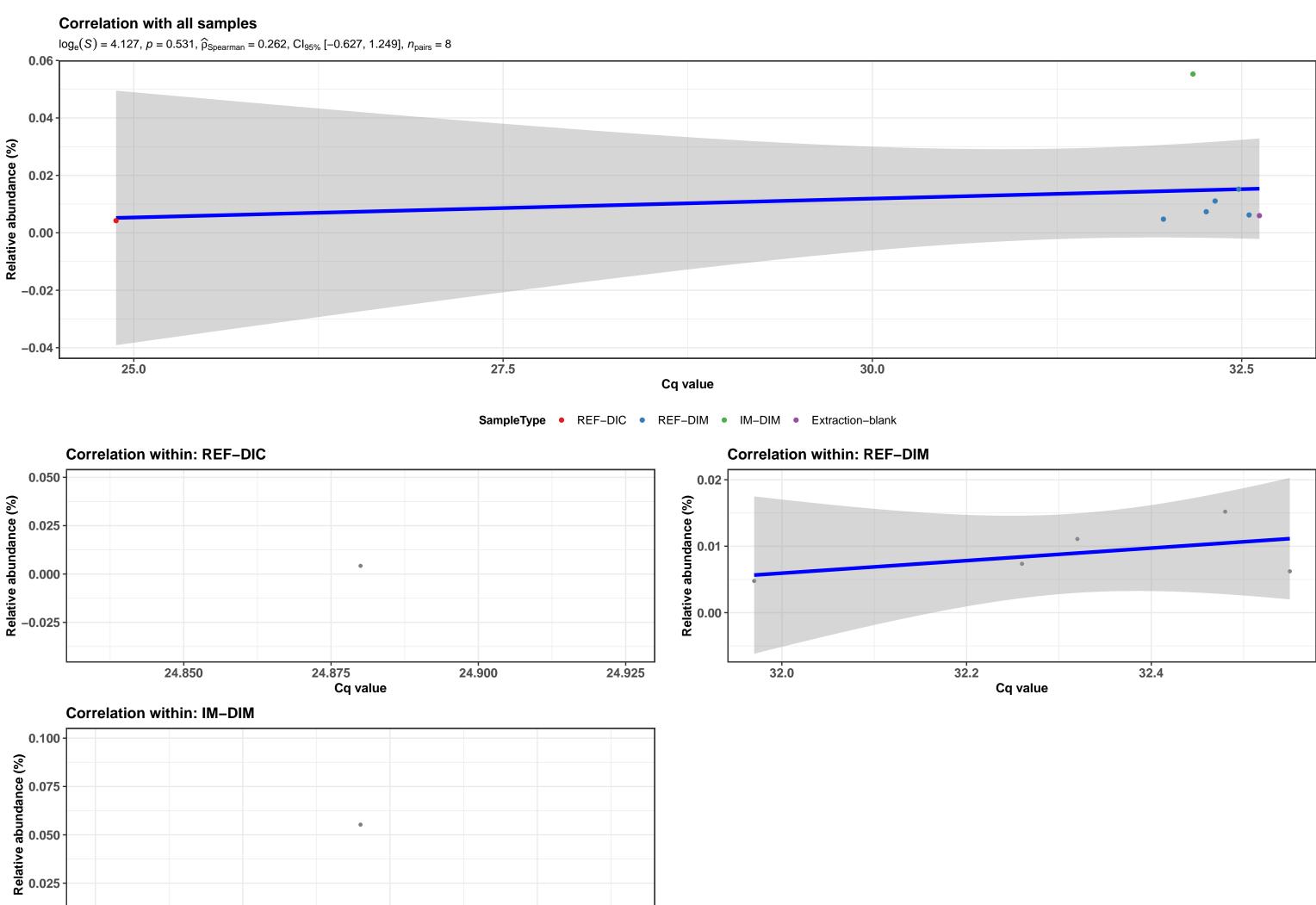


#### Correlation within: IM-DIM

 $log_e(S) = 6.494, p = 0.918, \hat{p}_{Spearman} = 0.028, Cl_{95\%} [-0.439, 0.524], n_{pairs} = 16$ 



k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Alphaproteobacteria; o\_\_Caulobacterales; f\_\_Caulobacteraceae; g\_\_Brevundimonas; NA



32.125

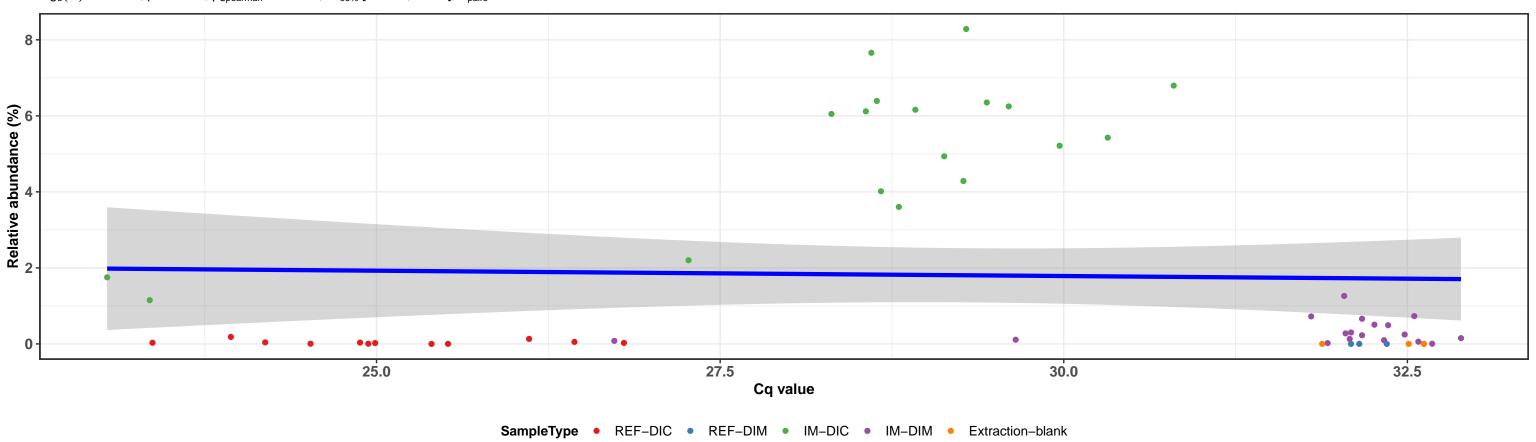
32.150

32.175

Cq value

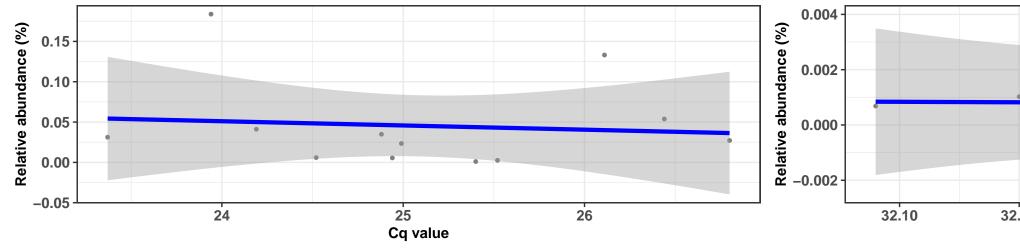
32.200

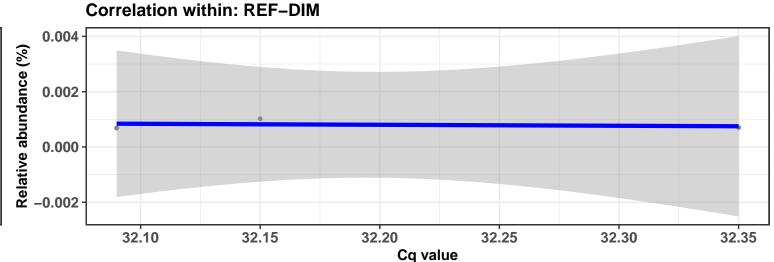
 $log_e(S) = 10.372, p = 0.267, \hat{\rho}_{Spearman} = -0.152, Cl_{95\%} [-0.420, 0.115], n_{pairs} = 55$ 



#### Correlation within: REF-DIC

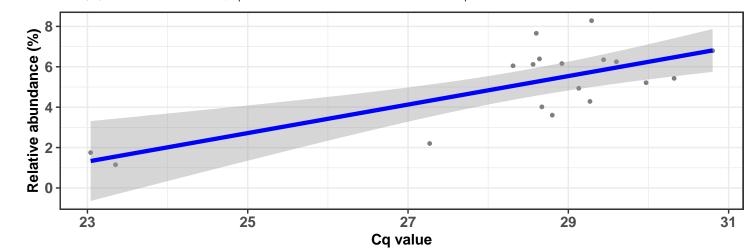
 $log_e(S) = 5.799, p = 0.633, \hat{\rho}_{Spearman} = -0.154, Cl_{95\%} [-0.805, 0.472], n_{pairs} = 12$ 





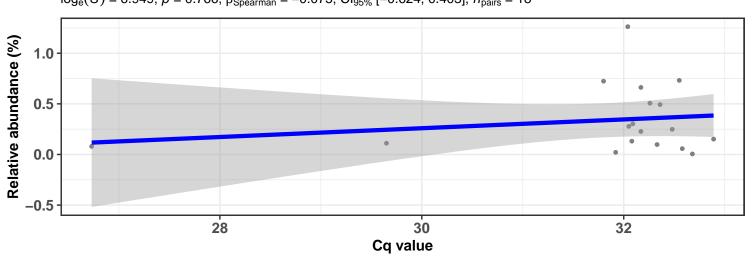
#### Correlation within: IM-DIC

 $\log_{e}(S) = 6.234, p = 0.047, \hat{\rho}_{Spearman} = 0.474, Cl_{95\%} [0.065, 0.883], n_{pairs} = 18$ 



#### Correlation within: IM-DIM

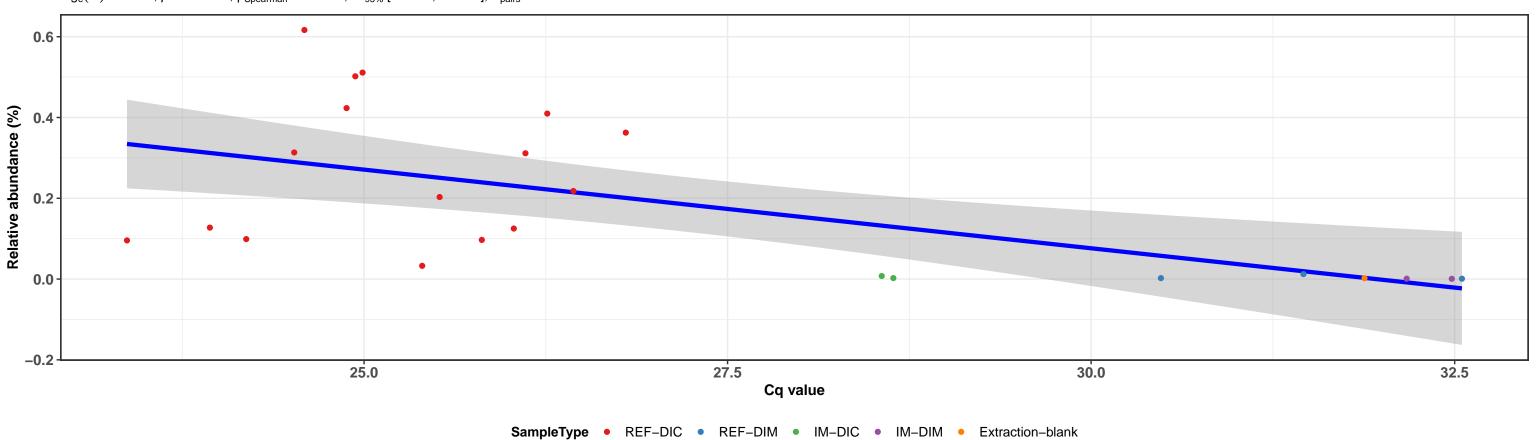
 $log_e(S) = 6.949, p = 0.766, \hat{\rho}_{Spearman} = -0.075, Cl_{95\%} [-0.624, 0.403], n_{pairs} = 18$ 



k\_\_Bacteria; p\_\_Firmicutes; c\_\_Clostridia; o\_\_Clostridiales; f\_\_Family XI; g\_\_Tepidimicrobium; s\_\_Tepidimicrobium sp. GRC1

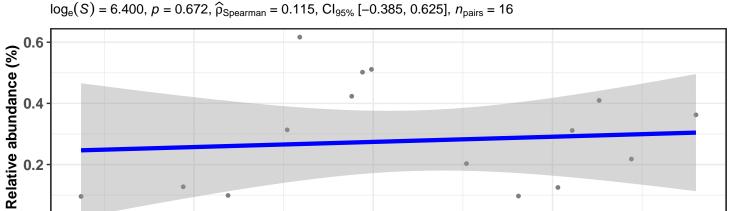


 $log_e(S) = 8.250, p = < 0.001, \widehat{\rho}_{Spearman} = -0.664, Cl_{95\%} [-1.018, -0.311], n_{pairs} = 24$ 



# Correlation within: REF-DIC

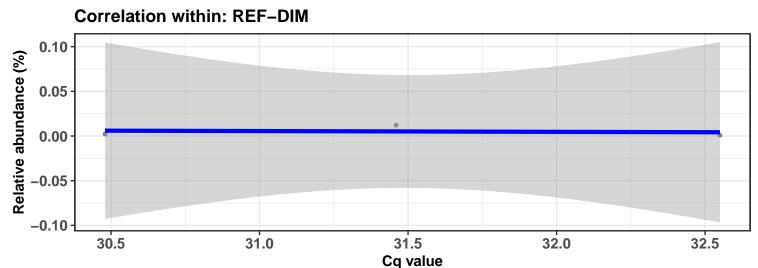
24

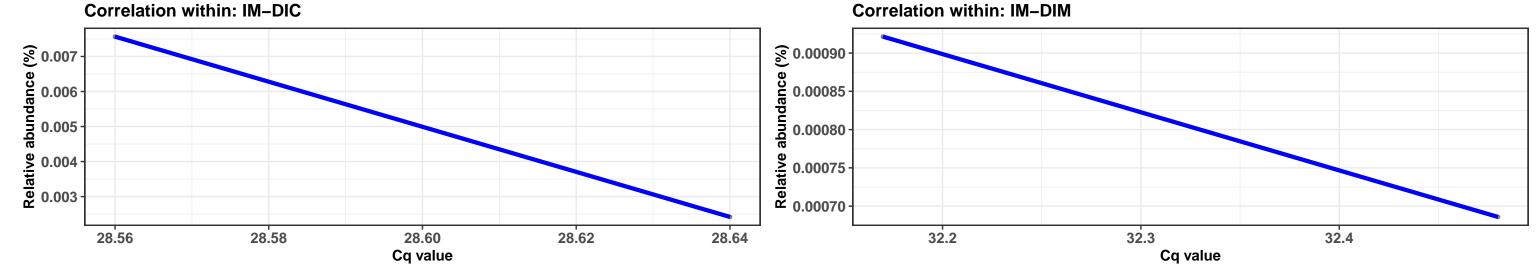


25

Cq value

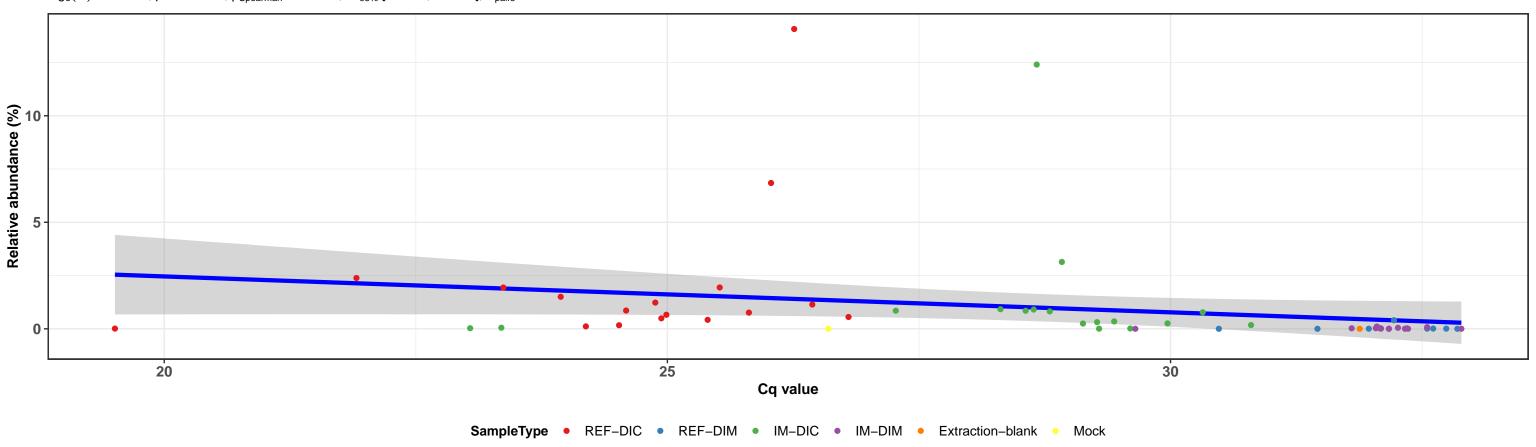
26



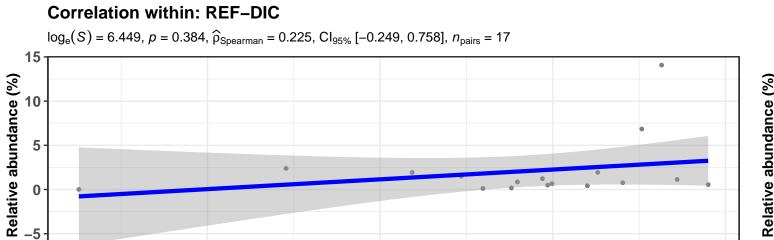


k\_\_Bacteria; p\_\_Tenericutes; c\_\_Mollicutes; o\_\_Mycoplasmatales; f\_\_Mycoplasmataceae; g\_\_Mycoplasma; s\_\_uncultured bacterium

 $log_e(S) = 10.967$ , p = < 0.001,  $\widehat{\rho}_{Spearman} = -0.609$ ,  $Cl_{95\%}$  [-0.780, -0.451],  $n_{pairs} = 60$ 



27



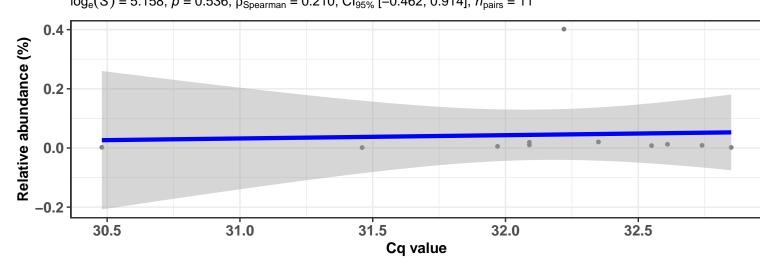
23

Cq value

25

# **Correlation within: REF-DIM**

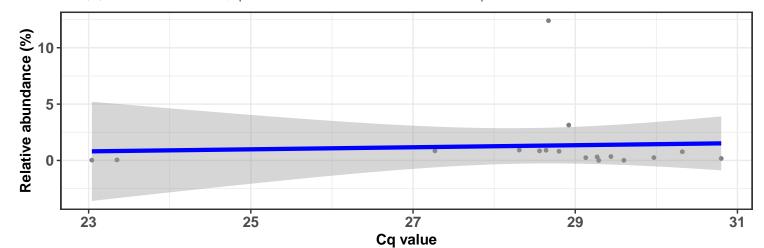
 $log_e(S) = 5.158$ , p = 0.536,  $\widehat{\rho}_{Spearman} = 0.210$ ,  $Cl_{95\%}$  [-0.462, 0.914],  $n_{pairs} = 11$ 



# Correlation within: IM-DIC

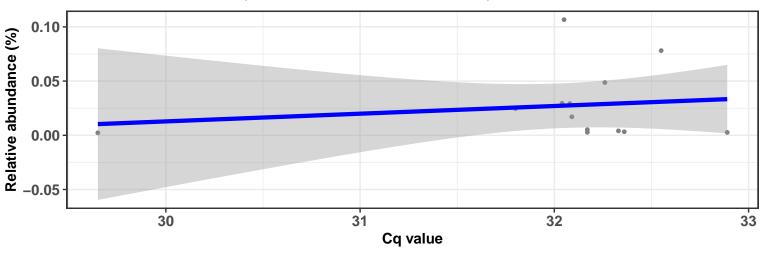
21

 $log_e(S) = 6.957$ , p = 0.264,  $\hat{\rho}_{Spearman} = -0.287$ ,  $Cl_{95\%}$  [-0.790, 0.244],  $n_{pairs} = 17$ 

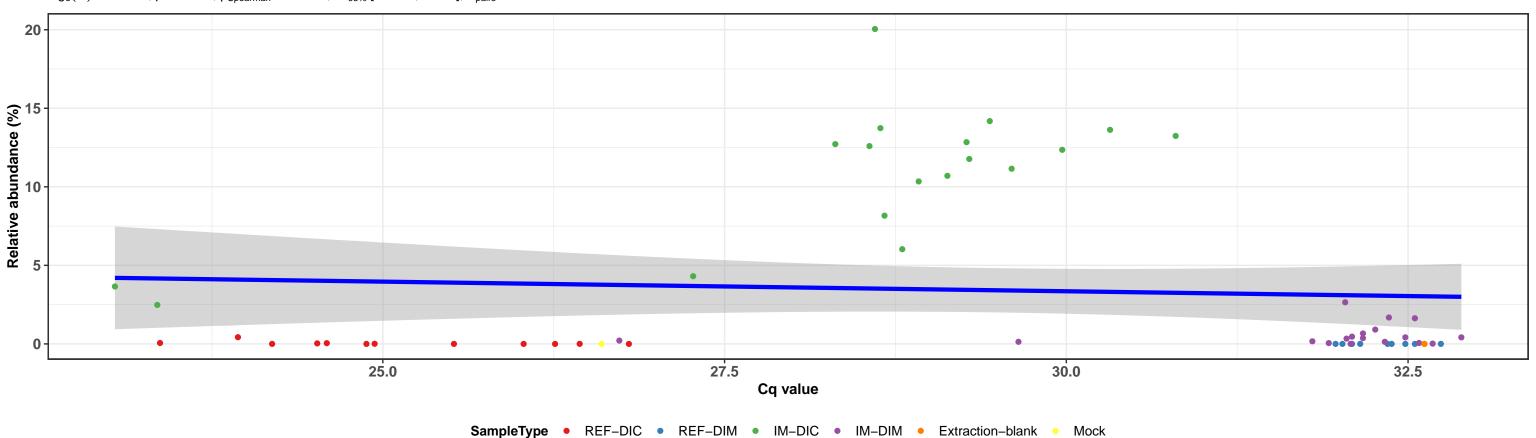


# Correlation within: IM-DIM

 $log_e(S) = 6.004$ , p = 0.714,  $\hat{\rho}_{Spearman} = -0.113$ ,  $Cl_{95\%}$  [-0.817, 0.702],  $n_{pairs} = 13$ 

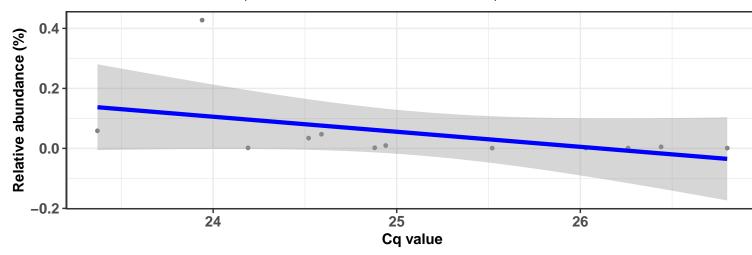


 $log_e(S) = 10.613$ , p = 0.324,  $\hat{\rho}_{Spearman} = -0.130$ ,  $Cl_{95\%}$  [-0.400, 0.128],  $n_{pairs} = 60$ 



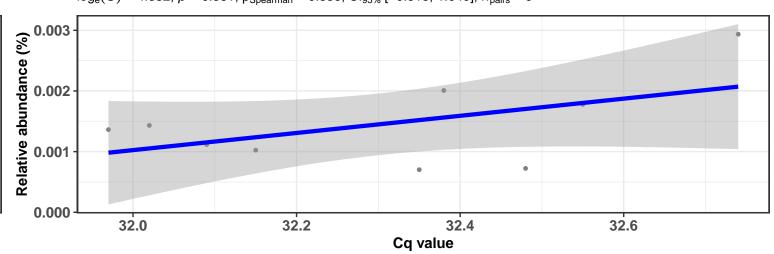
#### **Correlation within: REF-DIC**

 $log_e(S) = 6.194$ , p = 0.009,  $\hat{\rho}_{Spearman} = -0.713$ ,  $Cl_{95\%}$  [-1.113, -0.376],  $n_{pairs} = 12$ 



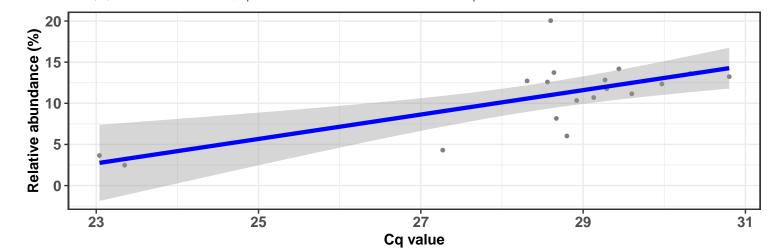
#### **Correlation within: REF-DIM**

 $log_e(S) = 4.382, p = 0.381, \hat{\rho}_{Spearman} = 0.333, Cl_{95\%} [-0.313, 1.040], n_{pairs} = 9$ 



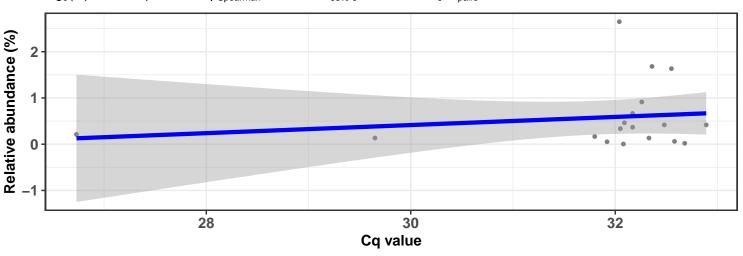
#### **Correlation within: IM-DIC**

 $log_e(S) = 6.261, p = 0.055, \hat{\rho}_{Spearman} = 0.459, Cl_{95\%} [0.005, 0.876], n_{pairs} = 18$ 

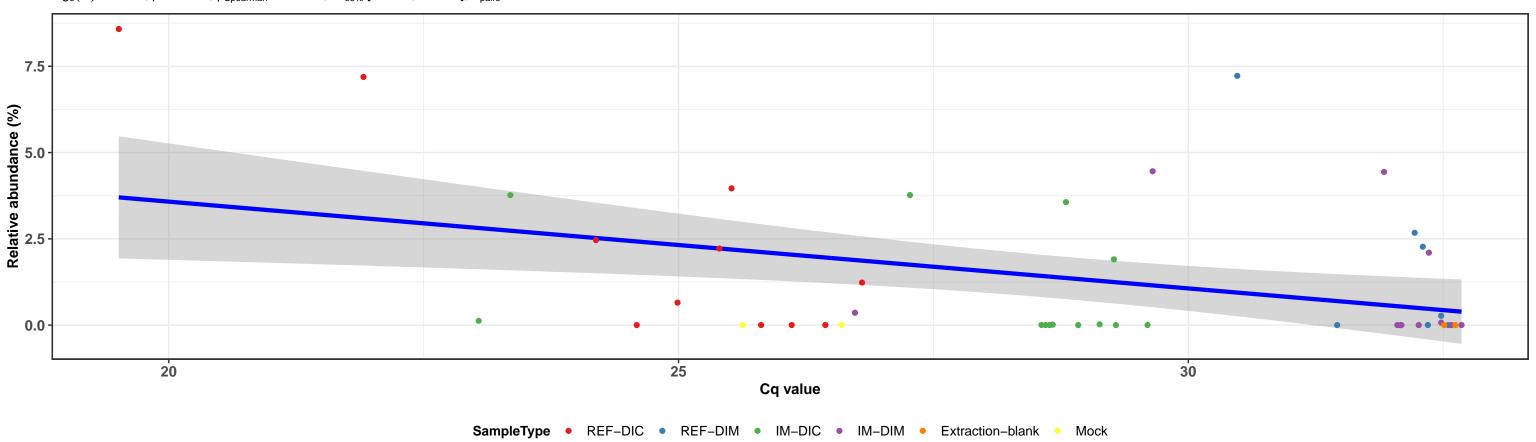


#### Correlation within: IM-DIM

 $log_e(S) = 6.740, p = 0.616, \hat{\rho}_{Spearman} = 0.127, Cl_{95\%} [-0.303, 0.520], n_{pairs} = 18$ 

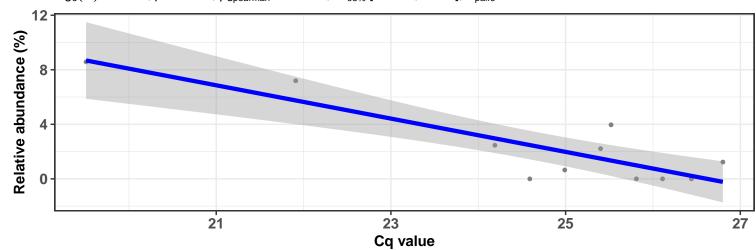


 $\log_{e}(S) = 9.993, p = 0.017, \widehat{\rho}_{Spearman} = -0.349, Cl_{95\%} [-0.592, -0.116], n_{pairs} = 46$ 



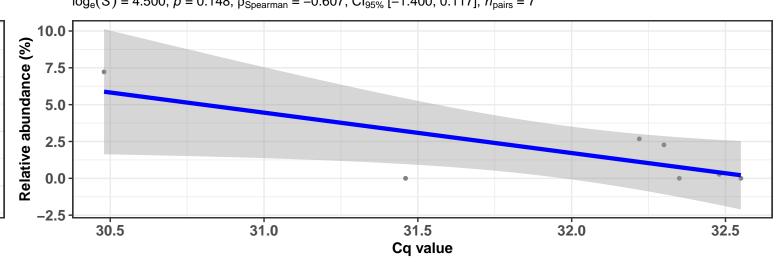


 $log_e(S) = 5.835, p = 0.077, \hat{\rho}_{Spearman} = -0.555, Cl_{95\%} [-1.241, 0.032], n_{pairs} = 11$ 



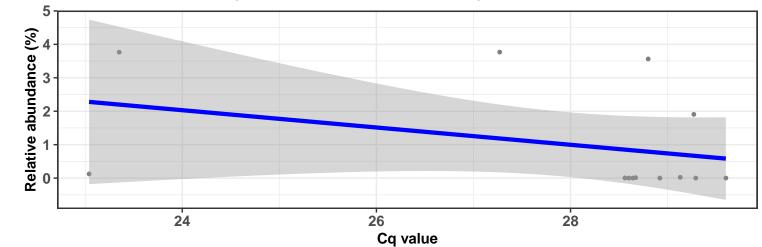
#### **Correlation within: REF-DIM**

 $log_e(S) = 4.500, p = 0.148, \hat{\rho}_{Spearman} = -0.607, Cl_{95\%} [-1.400, 0.117], n_{pairs} = 7$ 



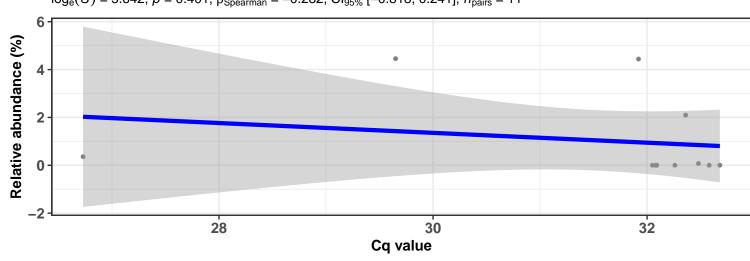
#### Correlation within: IM-DIC

 $log_e(S) = 6.223, p = 0.194, \hat{\rho}_{Spearman} = -0.385, Cl_{95\%} [-0.886, 0.060], n_{pairs} = 13$ 



#### **Correlation within: IM-DIM**

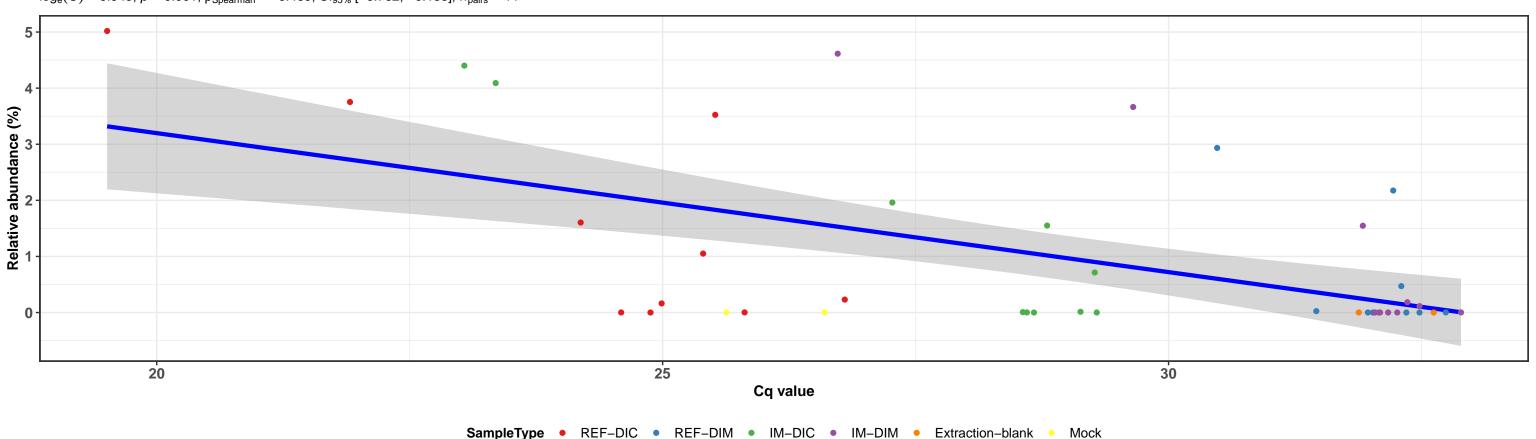
 $log_e(S) = 5.642, p = 0.401, \hat{\rho}_{Spearman} = -0.282, Cl_{95\%} [-0.818, 0.241], n_{pairs} = 11$ 



k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Gammaproteobacteria; o\_\_Vibrionales; f\_\_Vibrionaceae; g\_\_Aliivibrio; s\_\_uncultured bacterium

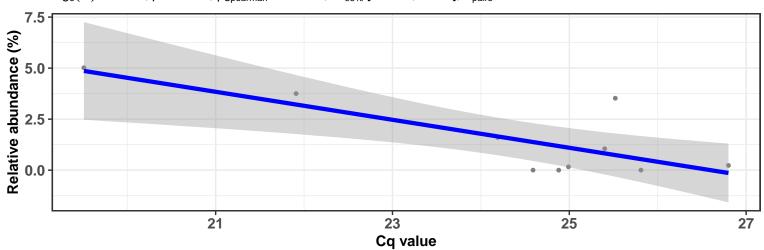


 $log_e(S) = 9.945$ , p = 0.001,  $\hat{\rho}_{Spearman} = -0.469$ ,  $Cl_{95\%}$  [-0.762, -0.183],  $n_{pairs} = 44$ 



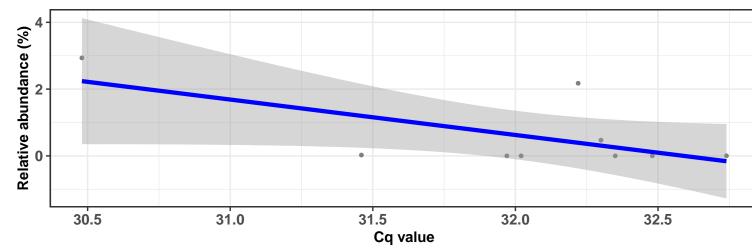
#### Correlation within: REF-DIC

 $log_e(S) = 5.447$ , p = 0.244,  $\widehat{\rho}_{Spearman} = -0.406$ ,  $Cl_{95\%}$  [-1.146, 0.194],  $n_{pairs} = 10$ 



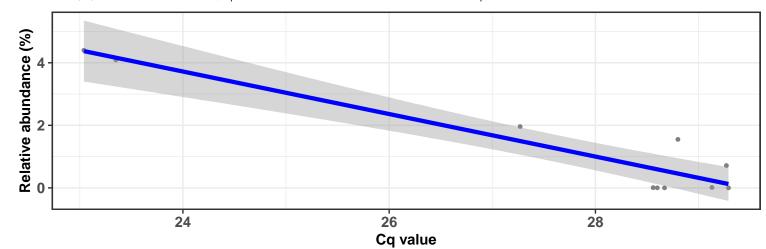
#### Correlation within: REF-DIM

 $log_e(S) = 5.147$ , p = 0.244,  $\hat{\rho}_{Spearman} = -0.433$ ,  $Cl_{95\%}$  [-1.056, 0.126],  $n_{pairs} = 9$ 



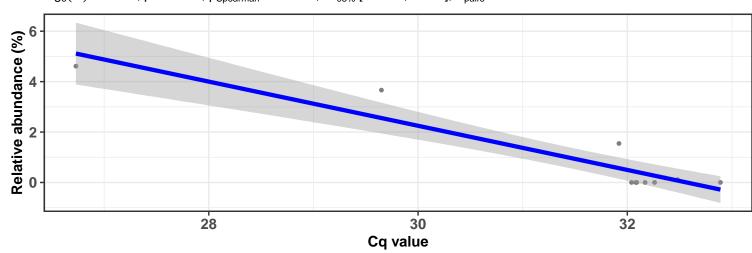
#### Correlation within: IM-DIC

 $log_e(S) = 5.583$ , p = 0.060,  $\hat{\rho}_{Spearman} = -0.612$ ,  $Cl_{95\%}$  [-1.121, -0.106],  $n_{pairs} = 10$ 

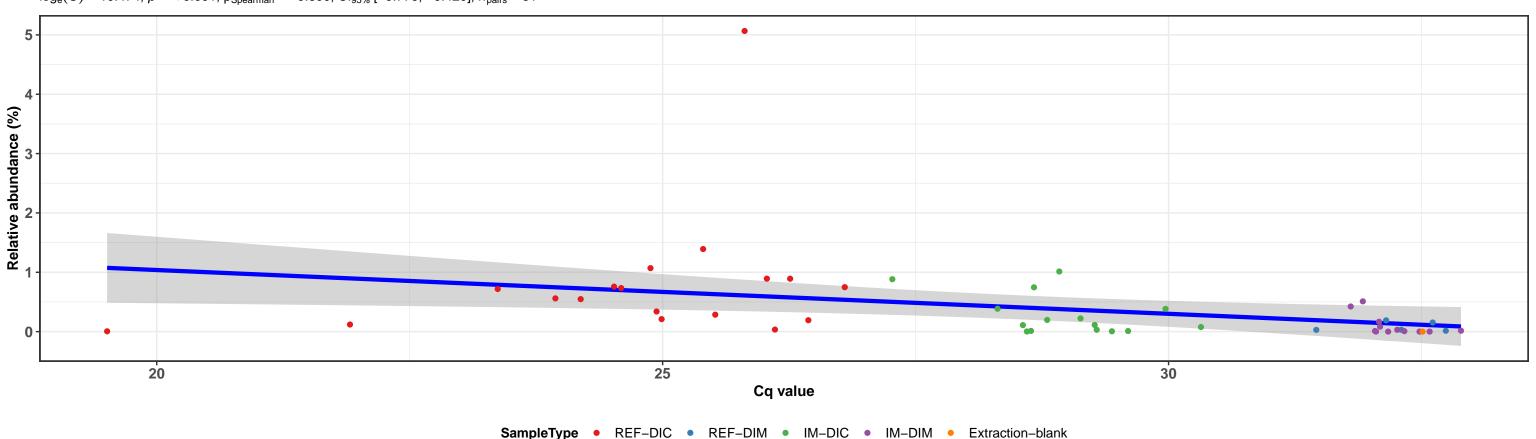


#### Correlation within: IM-DIM

 $log_e(S) = 5.710$ , p = 0.259,  $\widehat{\rho}_{Spearman} = -0.373$ ,  $Cl_{95\%}$  [-1.066, 0.304],  $n_{pairs} = 11$ 

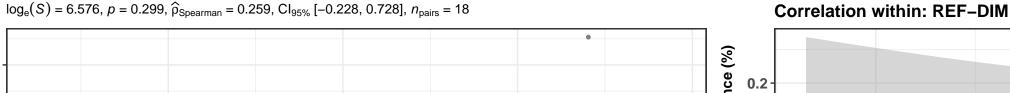


 $\log_{\rm e}(\rm S) = 10.474, \ p = <0.001, \ \widehat{\rho}_{\rm Spearman} = -0.600, \ {\rm CI}_{95\%} \ [-0.779, \ -0.420], \ n_{\rm pairs} = 51$ 

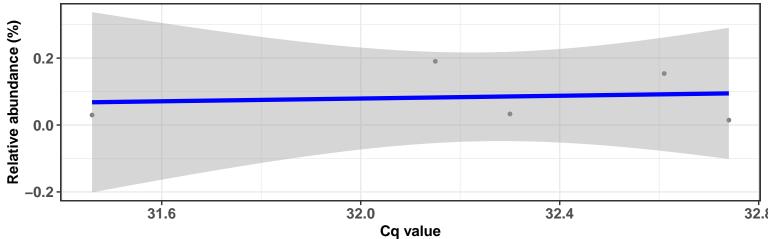


27

#### Correlation within: REF-DIC



25

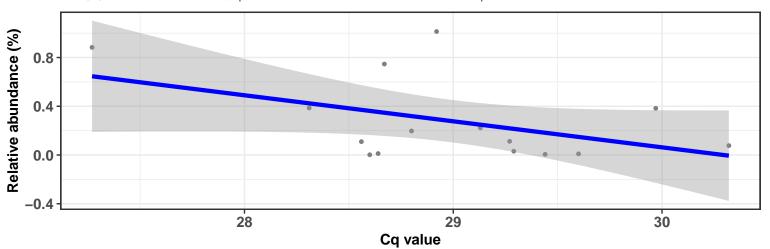


#### Correlation within: IM-DIC

21

Relative abundance (%)

 $log_e(S) = 6.590, p = 0.277, \hat{\rho}_{Spearman} = -0.300, Cl_{95\%} [-0.824, 0.199], n_{pairs} = 15$ 

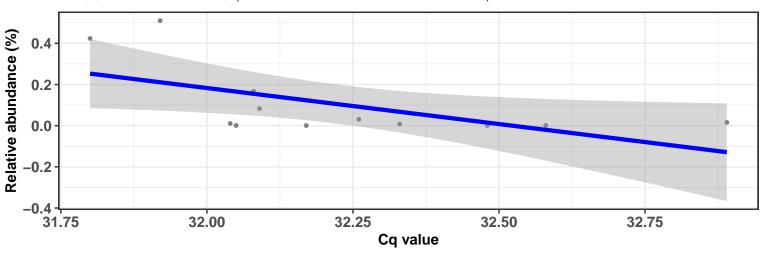


23

Cq value

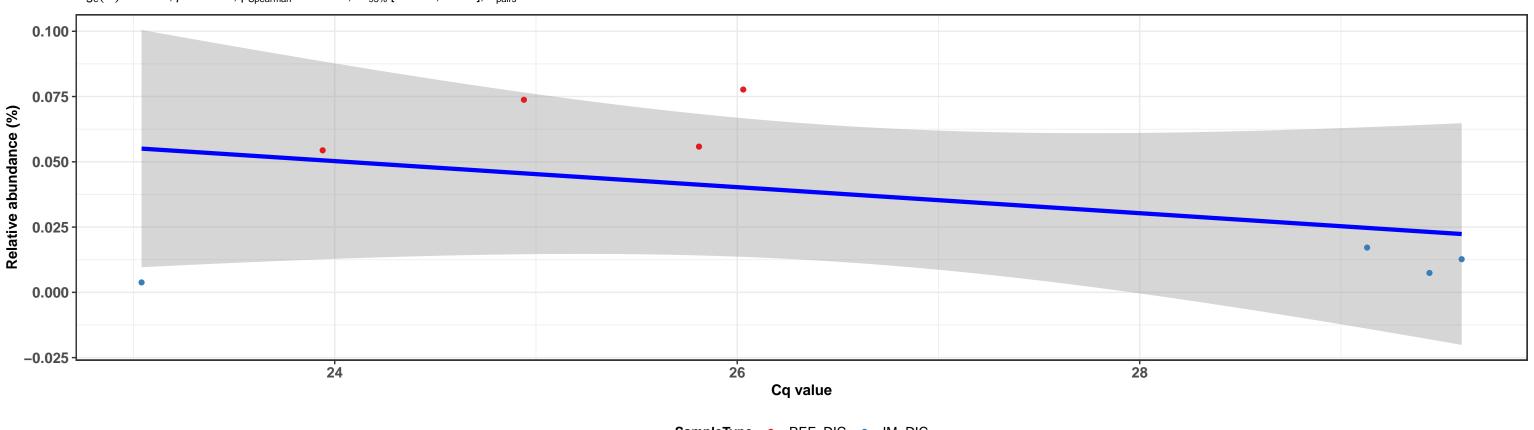
#### Correlation within: IM-DIM

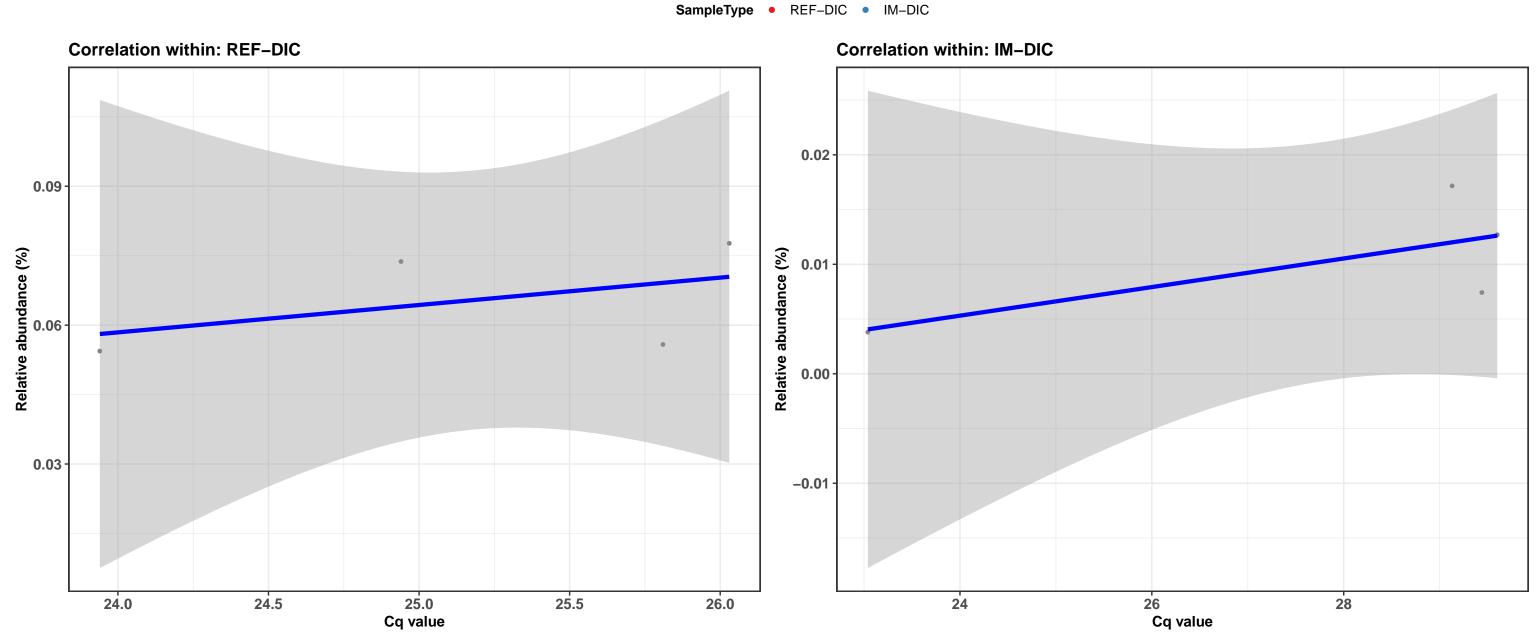
 $log_e(S) = 6.087, p = 0.071, \hat{\rho}_{Spearman} = -0.538, Cl_{95\%} [-1.030, -0.161], n_{pairs} = 12$ 



k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Bacillales; f\_\_Bacillaceae; g\_\_Bacillus; NA

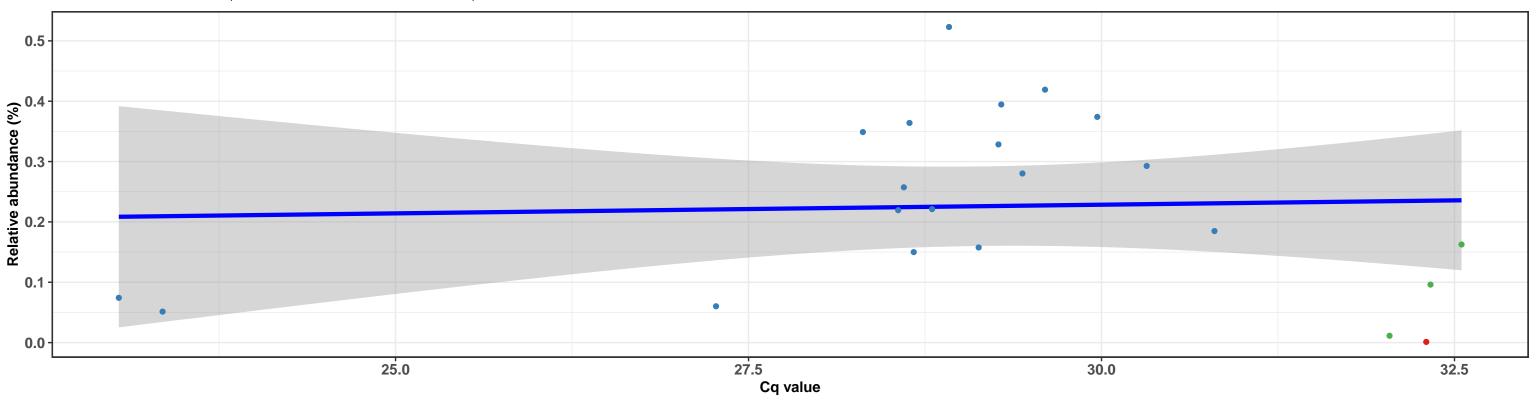
 $log_e(S) = 4.522, p = 0.823, \hat{\rho}_{Spearman} = -0.095, Cl_{95\%} [-1.033, 0.821], n_{pairs} = 8$ 



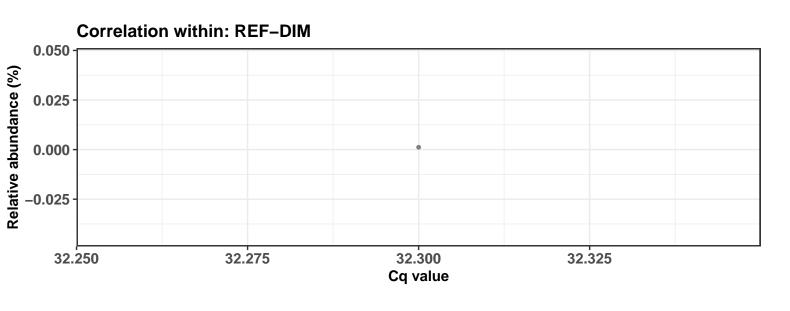


k\_\_Bacteria; p\_\_Actinobacteria; c\_\_Actinobacteria; o\_\_Micrococcales; f\_\_Brevibacteriaceae; g\_\_Brevibacterium; s\_\_Brevibacterium album

 $log_e(S) = 7.483$ , p = 0.986,  $\hat{\rho}_{Spearman} = -0.004$ ,  $Cl_{95\%}$  [-0.469, 0.515],  $n_{pairs} = 22$ 

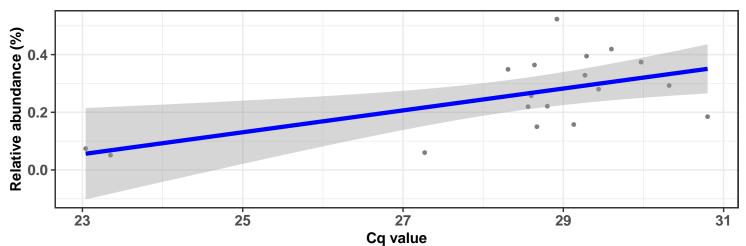


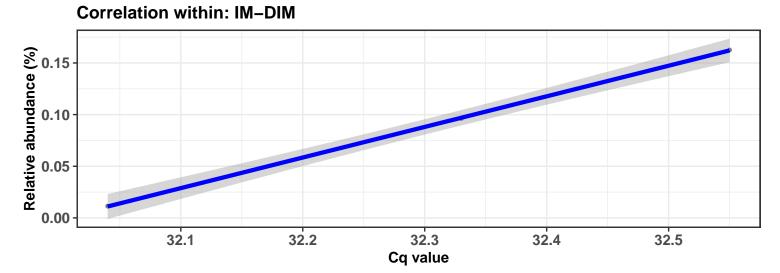




#### Correlation within: IM-DIC

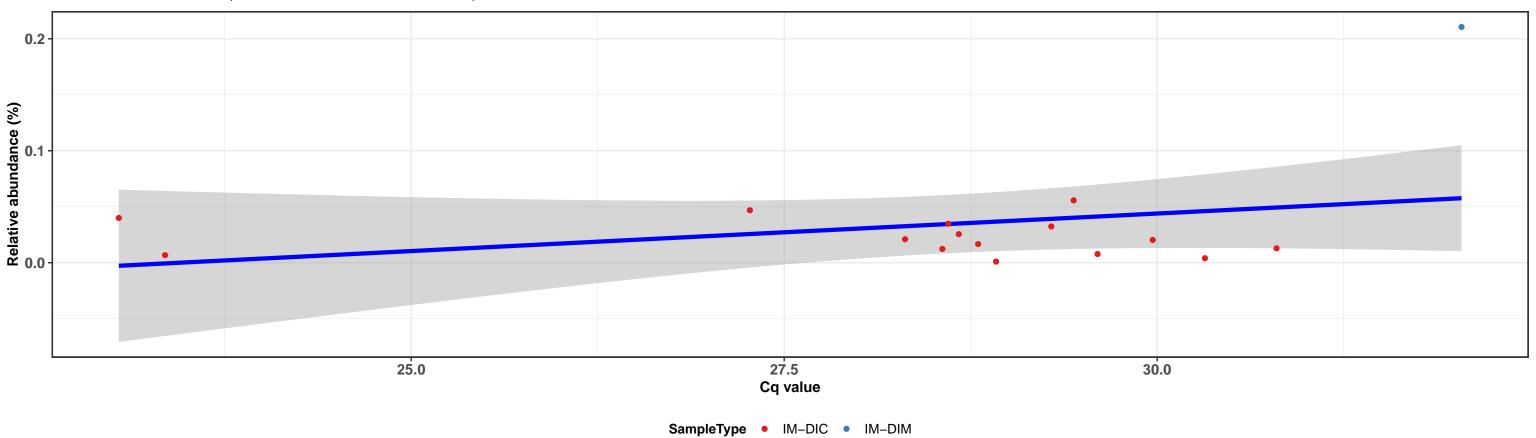
 $log_e(S) = 6.165$ , p = 0.031,  $\widehat{\rho}_{Spearman} = 0.509$ ,  $Cl_{95\%}$  [0.130, 0.874],  $n_{pairs} = 18$ 



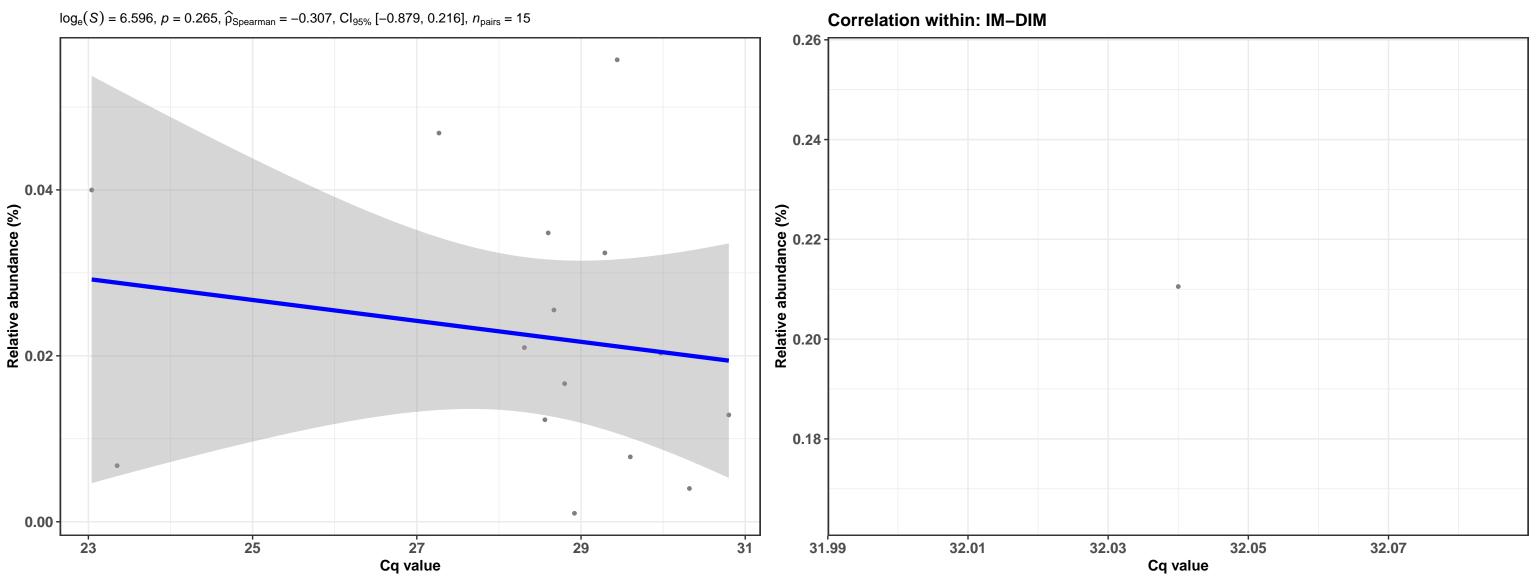


k\_Bacteria; p\_Actinobacteria; c\_Actinobacteria; o\_Actinomycetales; f\_Actinomycetaceae; g\_Actinomyces; s\_uncultured Actinomycetales bacterium

 $\log_{e}(S) = 6.596, p = 0.778, \hat{\rho}_{Spearman} = -0.076, Cl_{95\%} [-0.595, 0.528], n_{pairs} = 16$ 



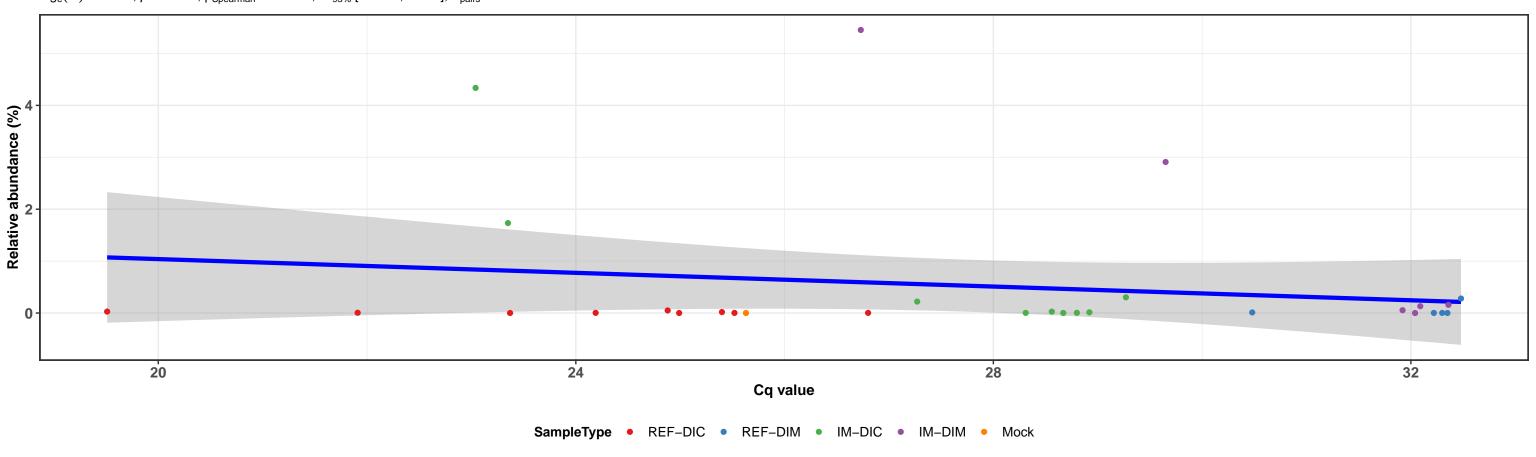




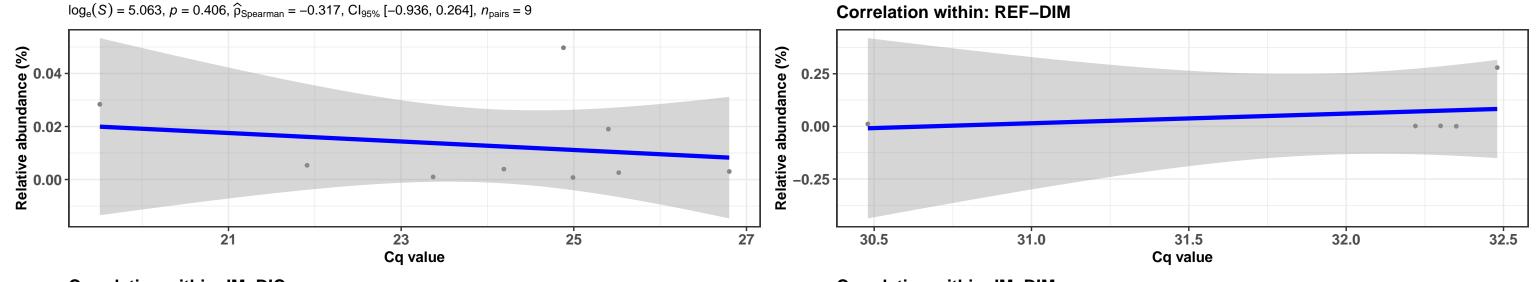
k\_Bacteria; p\_Proteobacteria; c\_Gammaproteobacteria; o\_Alteromonadales; f\_Marinobacteraceae; g\_Marinobacter; s\_Marinobacter adhaerens **Correlation with all samples** 0.0015 Relative abundance (%) 0.0005 32 26 28 30 Cq value SampleType • REF-DIC • REF-DIM • IM-DIC • IM-DIM **Correlation within: REF-DIC Correlation within: REF-DIM** 0.050 0.050 Relative abundance (%) Relative abundance (%) 0.025 0.000 -0.025 24.875 32.06 32.10 32.12 24.850 24.900 24.925 32.08 32. Cq value Cq value Correlation within: IM-DIC Correlation within: IM-DIM 0.050 Relative abundance (%) 0.0000 0.00000 0.00000 Relative abundance (%) 32.5 28.775 32.3 32.9 28.750 28.800 28.825 28.8 32.7 Cq value Cq value

k\_Bacteria; p\_Proteobacteria; c\_Gammaproteobacteria; o\_Vibrionales; f\_Vibrionaceae; g\_Aliivibrio; s\_uncultured bacterium

 $log_e(S) = 8.469, p = 0.753, \hat{\rho}_{Spearman} = -0.060, Cl_{95\%} [-0.404, 0.327], n_{pairs} = 30$ 

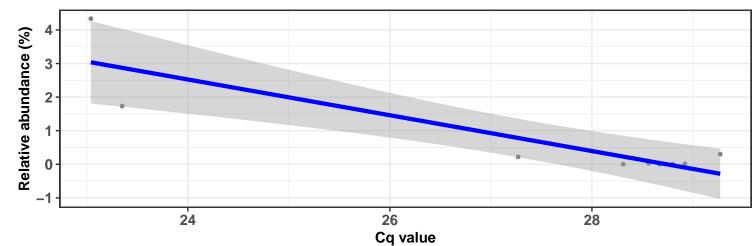




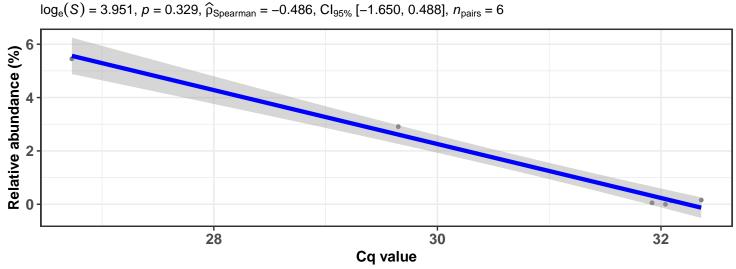




 $log_e(S) = 5.159, p = 0.224, \hat{\rho}_{Spearman} = -0.450, Cl_{95\%}$  [-1.339, 0.340],  $n_{pairs} = 9$ 

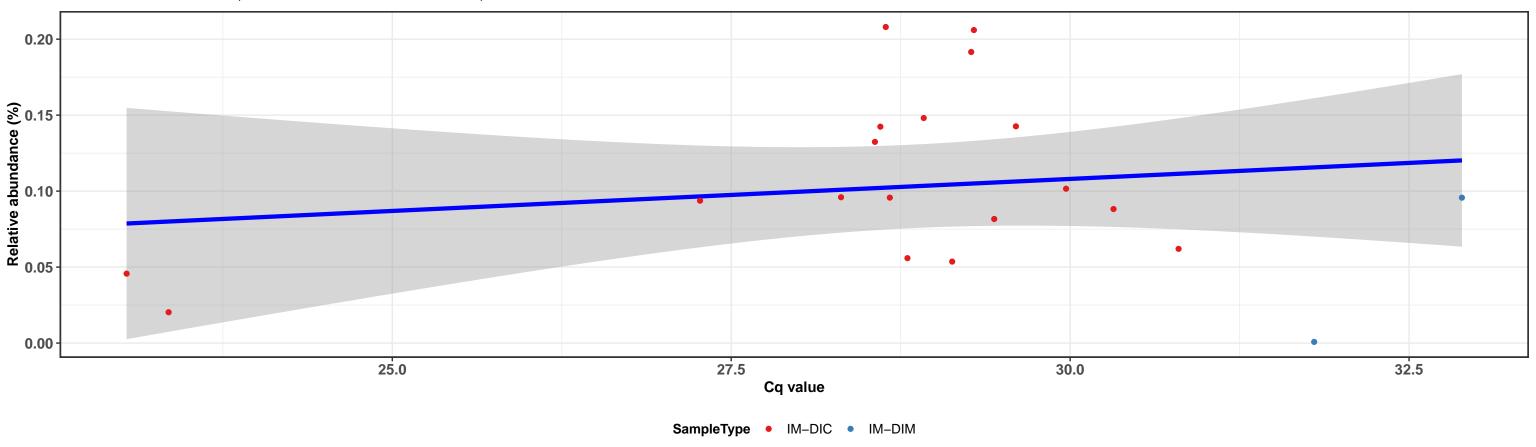


# Correlation within: IM-DIM

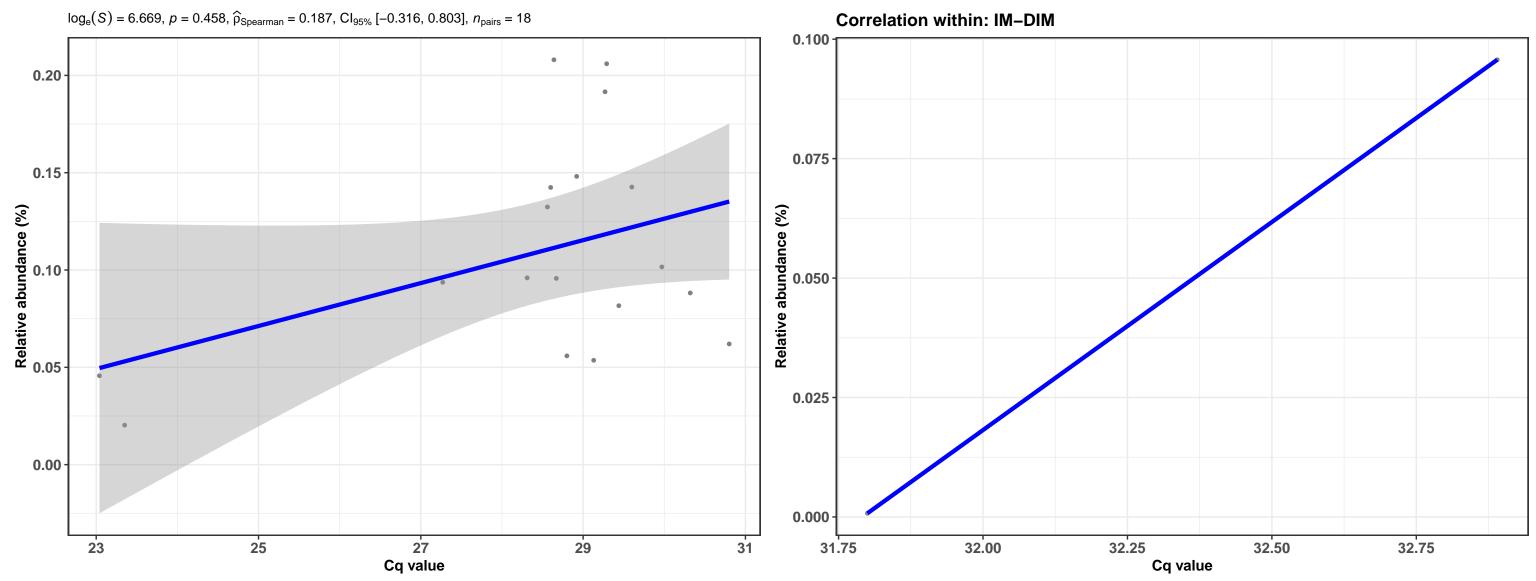


k\_\_Bacteria; p\_\_Actinobacteria; c\_\_Actinobacteria; o\_\_Micrococcales; f\_\_Brevibacteriaceae; g\_\_Brevibacterium; NA

 $log_e(S) = 7.199, p = 0.980, \hat{\rho}_{Spearman} = -0.006, Cl_{95\%} [-0.548, 0.425], n_{pairs} = 20$ 

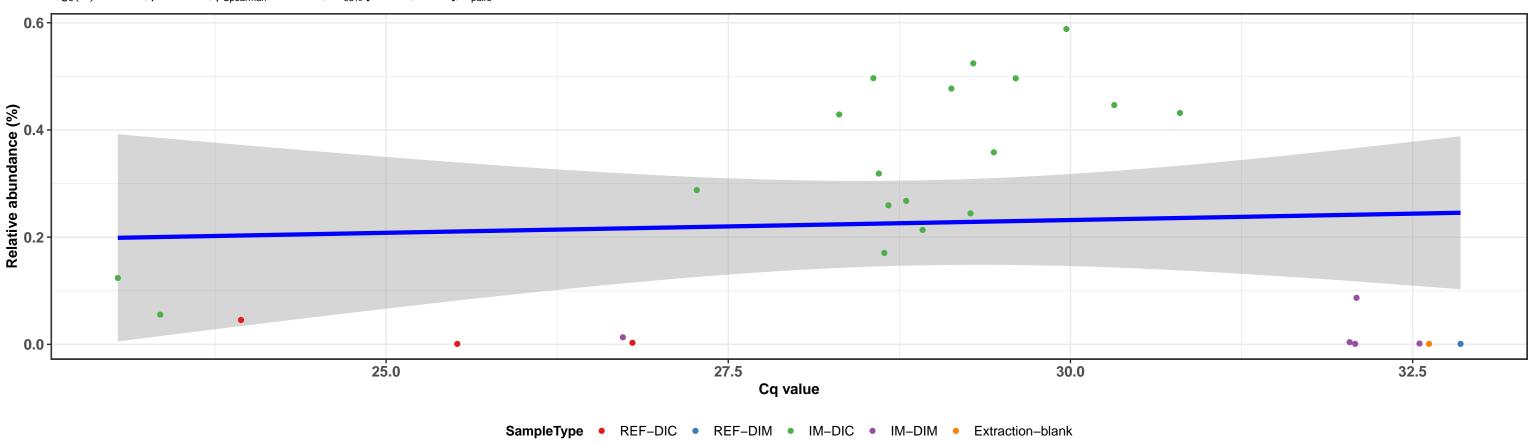


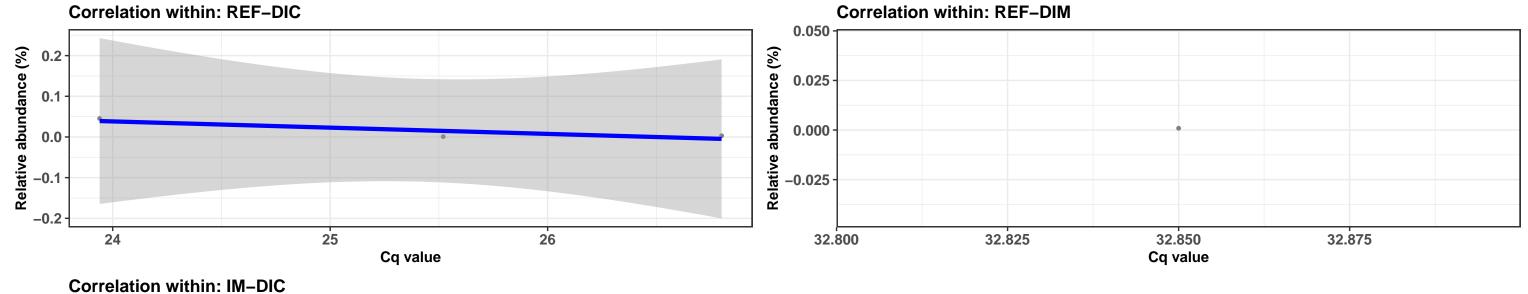




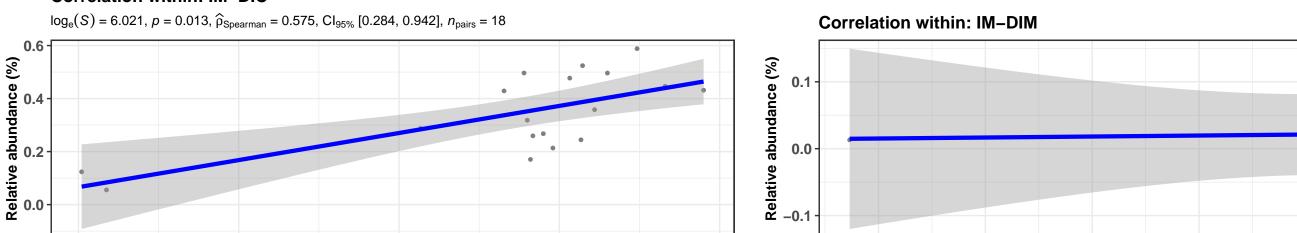
 $log_e(S) = 8.233, p = 0.879, \hat{\rho}_{Spearman} = -0.030, Cl_{95\%} [-0.474, 0.456], n_{pairs} = 28$ 

Cq value



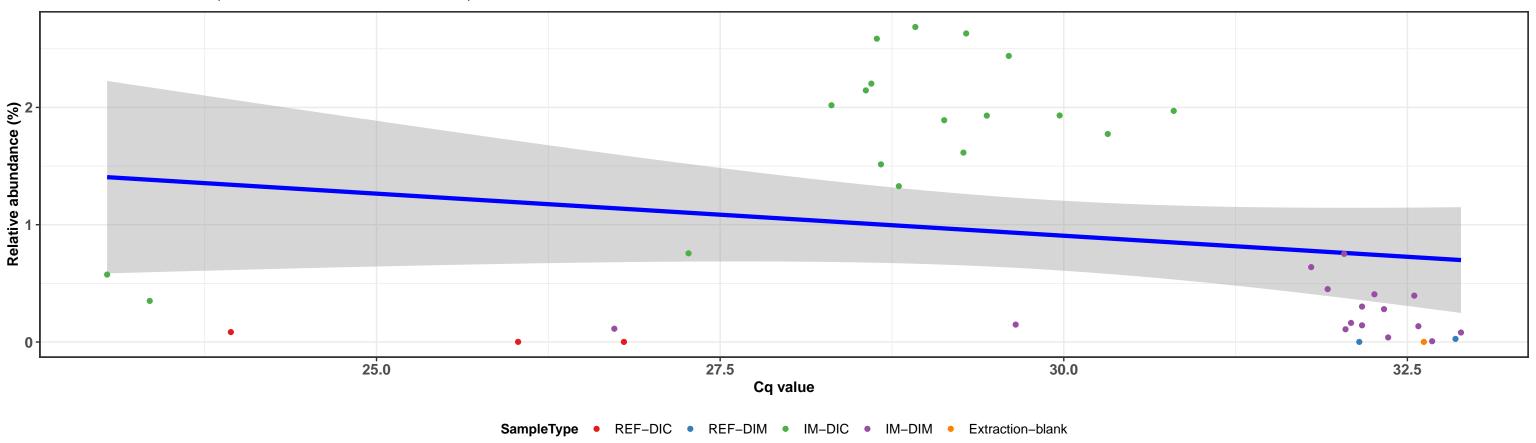


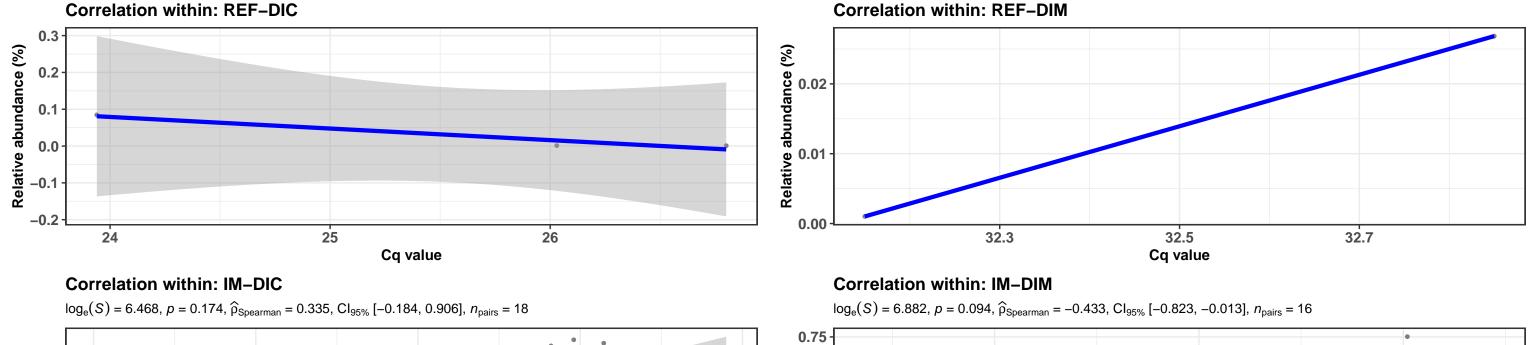
Cq value

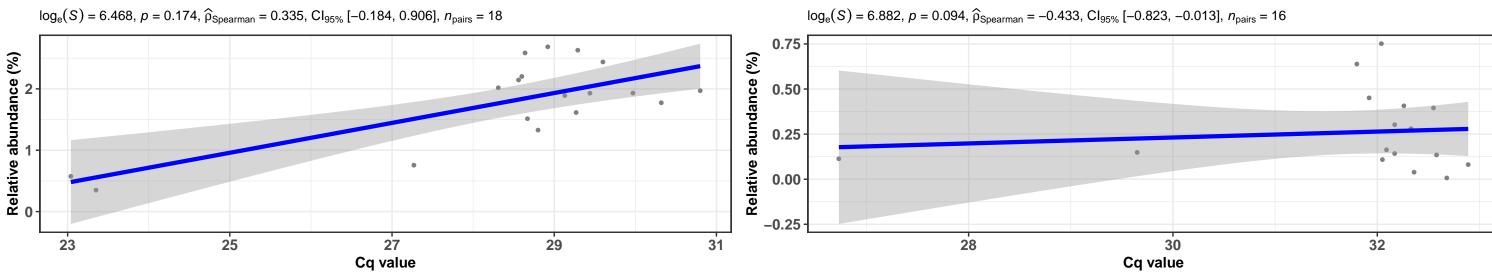


k\_Bacteria; p\_Actinobacteria; c\_Actinobacteria; o\_Actinomycetales; f\_Actinomycetaceae; g\_Actinomyces; s\_uncultured Actinomycetales bacterium

 $log_e(S) = 9.597, p = 0.015, \hat{\rho}_{Spearman} = -0.381, Cl_{95\%} [-0.770, -0.037], n_{pairs} = 40$ 

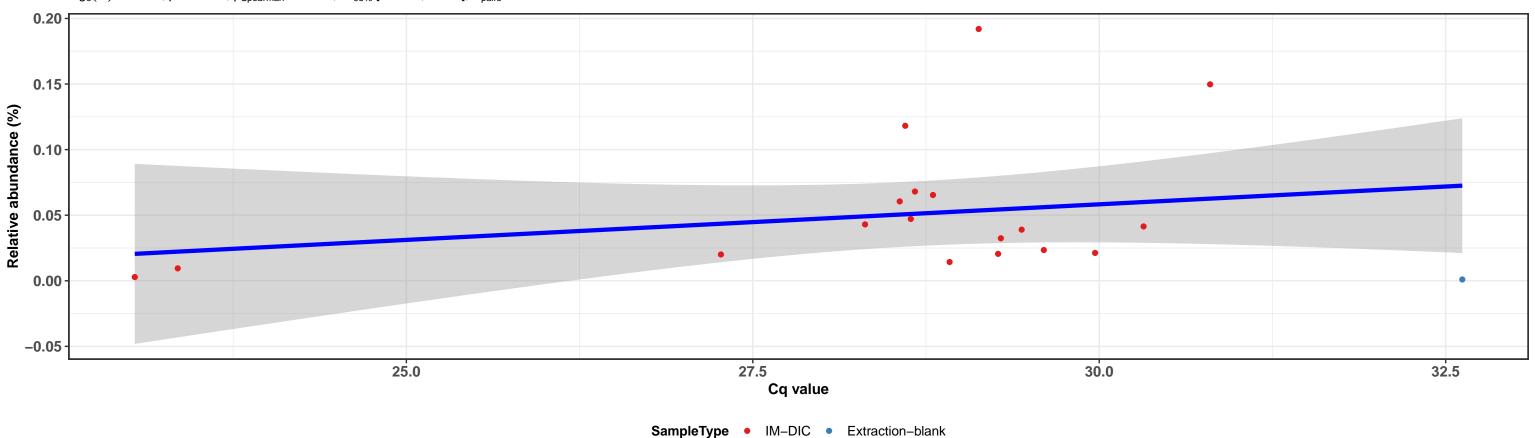






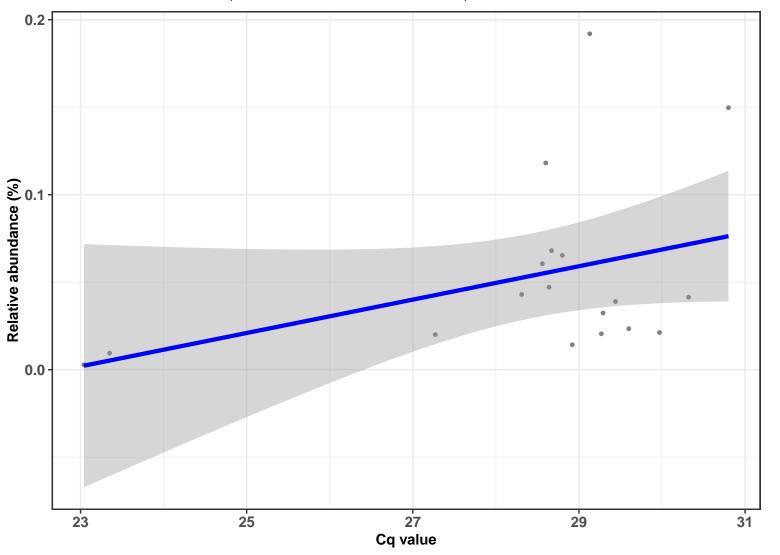
k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Lactobacillaceae; g\_\_Lactobacillus; Ambiguous\_taxa

 $log_e(S) = 6.972$ , p = 0.792,  $\hat{\rho}_{Spearman} = 0.065$ ,  $Cl_{95\%}$  [-0.550, 0.644],  $n_{pairs} = 19$ 

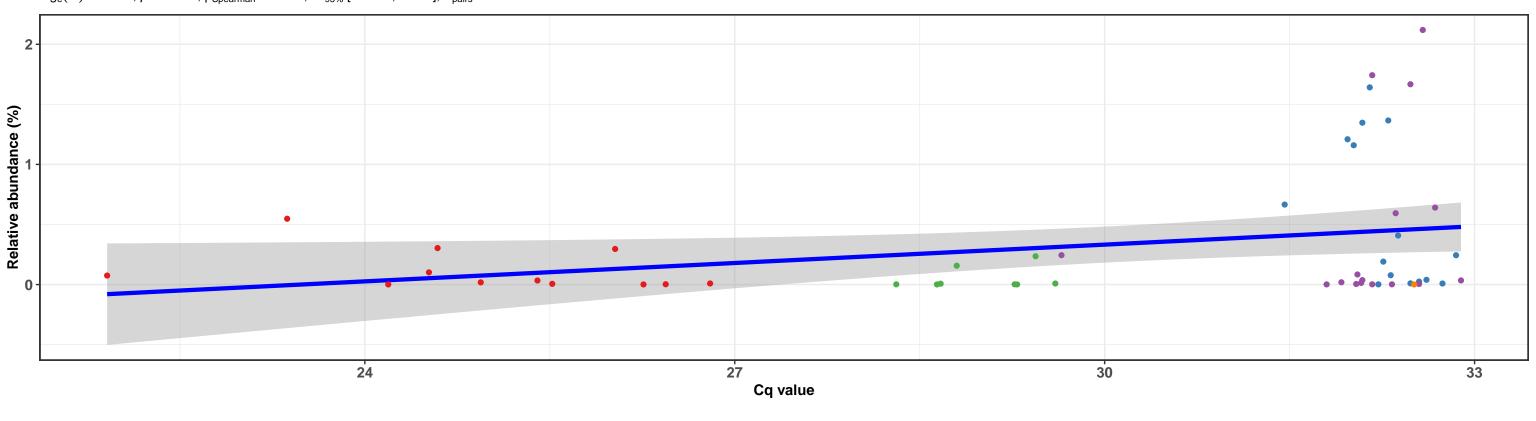


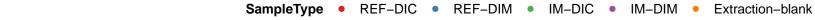
# Correlation within: IM-DIC

 $log_e(S) = 6.585$ , p = 0.311,  $\hat{\rho}_{Spearman} = 0.253$ ,  $Cl_{95\%}$  [-0.267, 0.801],  $n_{pairs} = 18$ 



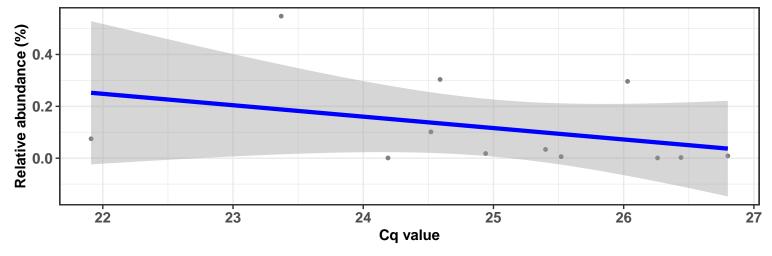
 $log_e(S) = 9.818$ , p = 0.124,  $\widehat{\rho}_{Spearman} = 0.216$ ,  $Cl_{95\%}$  [-0.006, 0.502],  $n_{pairs} = 52$ 





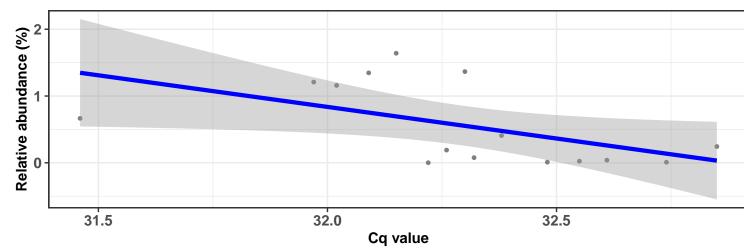
# Correlation within: REF-DIC

 $log_e(S) = 6.011, p = 0.167, \hat{\rho}_{Spearman} = -0.427, Cl_{95\%} [-1.038, 0.118], n_{pairs} = 12$ 



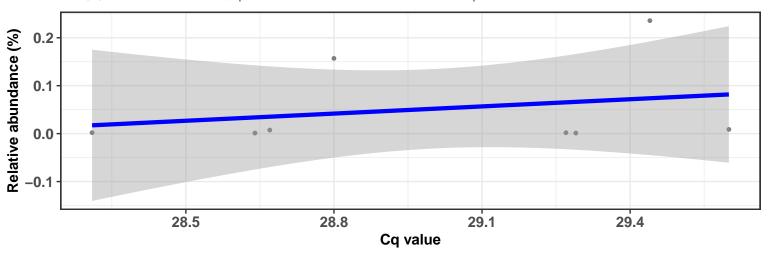
# Correlation within: REF-DIM

 $log_e(S) = 6.782, p = 0.025, \hat{\rho}_{Spearman} = -0.575, Cl_{95\%} [-0.922, -0.243], n_{pairs} = 15$ 



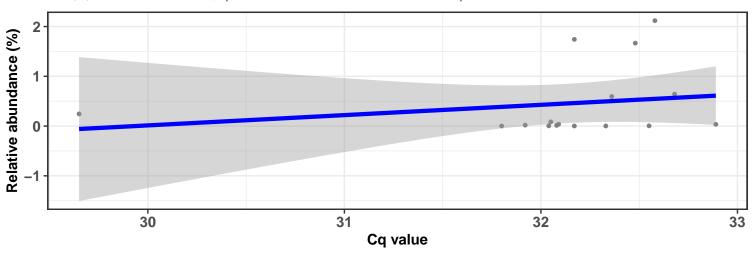
#### Correlation within: IM-DIC

 $log_e(S) = 4.025$ , p = 0.420,  $\hat{\rho}_{Spearman} = 0.333$ ,  $Cl_{95\%}$  [-0.383, 1.184],  $n_{pairs} = 8$ 



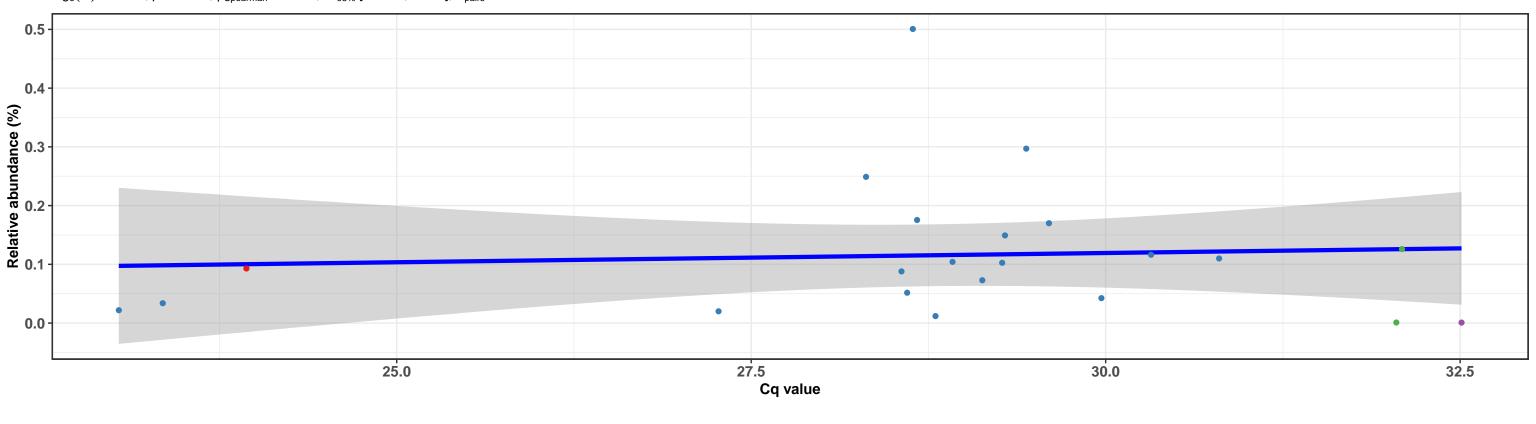
#### Correlation within: IM-DIM

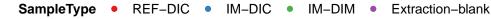
 $log_e(S) = 6.042, p = 0.145, \hat{p}_{Spearman} = 0.381, Cl_{95\%} [-0.065, 0.799], n_{pairs} = 16$ 



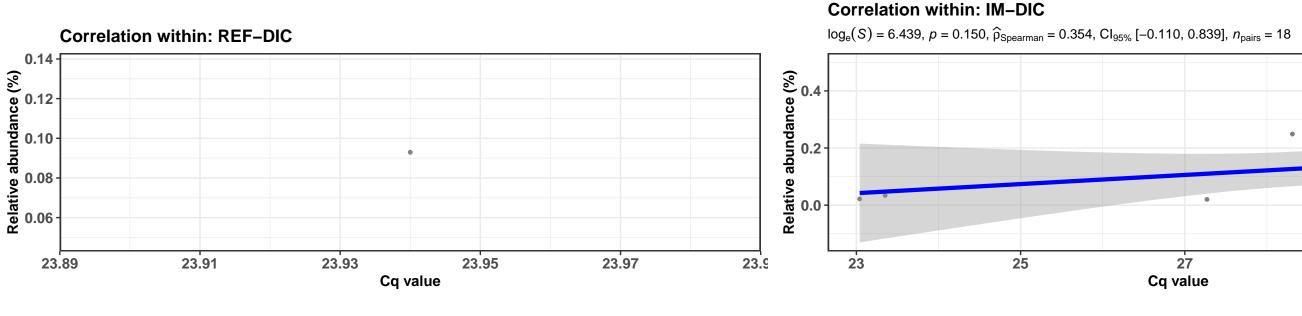
k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Gammaproteobacteria; o\_\_Pseudomonadales; f\_\_Pseudomonadaceae; g\_\_Pseudomonas; s\_\_uncultured bacterium

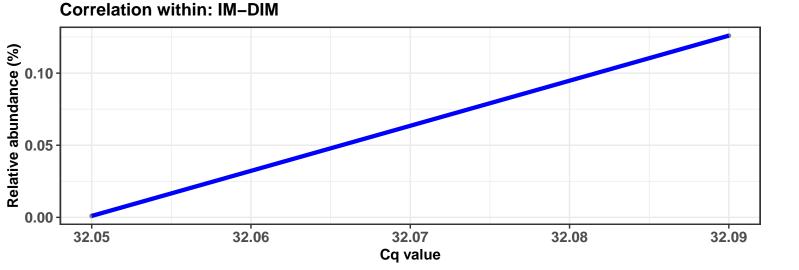
 $log_e(S) = 7.421$ , p = 0.801,  $\widehat{\rho}_{Spearman} = 0.057$ ,  $Cl_{95\%}$  [-0.472, 0.630],  $n_{pairs} = 22$ 





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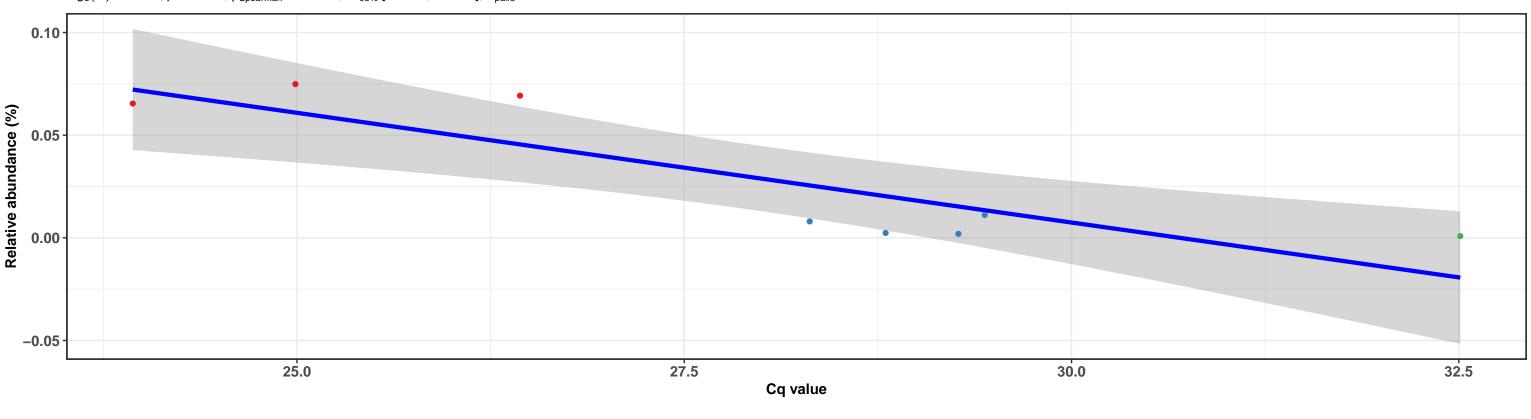


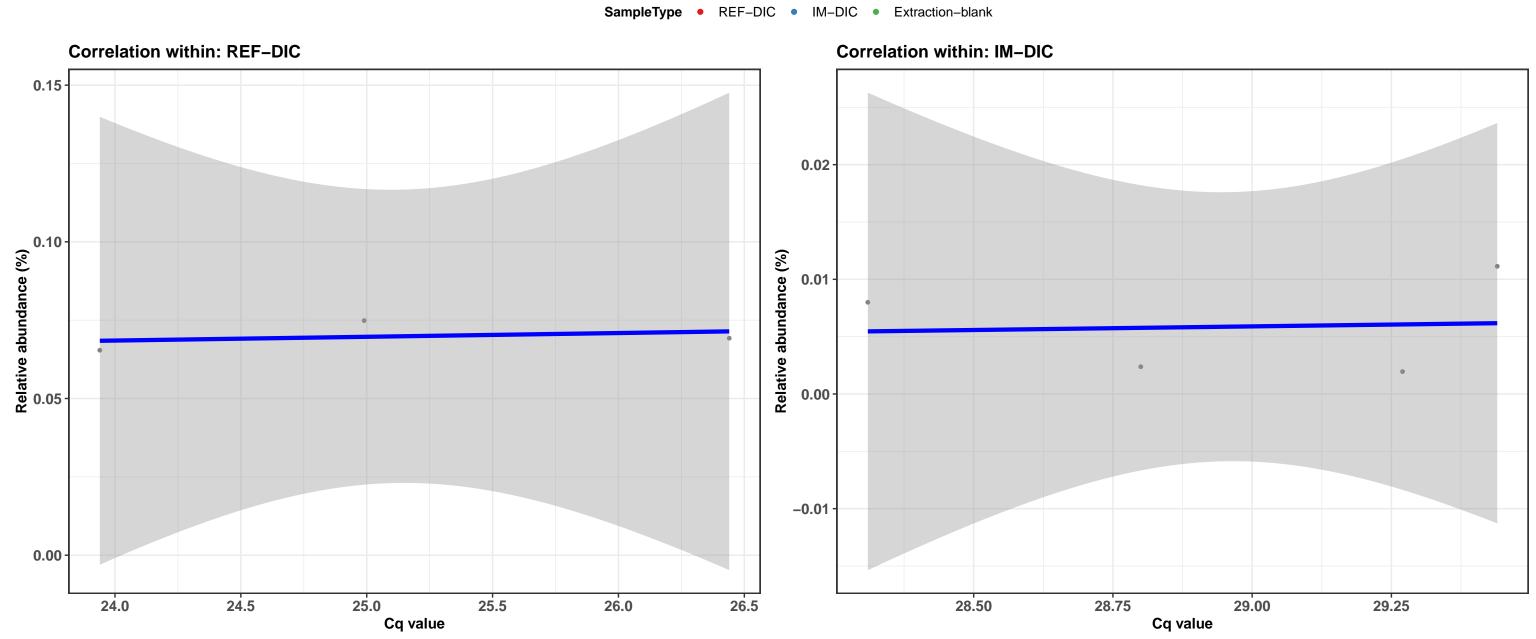


k\_\_Bacteria; p\_\_Firmicutes; c\_\_Erysipelotrichia; o\_\_Erysipelotrichales; f\_\_Erysipelotrichaceae; NA; NA



 $log_e(S) = 5.011$ , p = 0.021,  $\hat{\rho}_{Spearman} = -0.786$ ,  $Cl_{95\%}$  [-1.354, -0.331],  $n_{pairs} = 8$ 

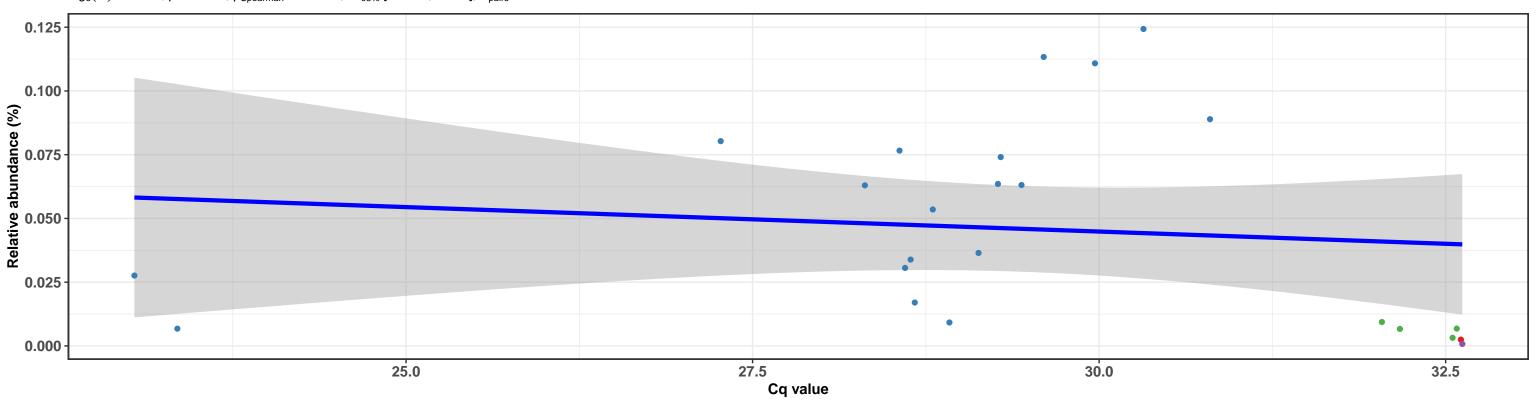


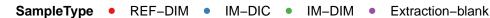


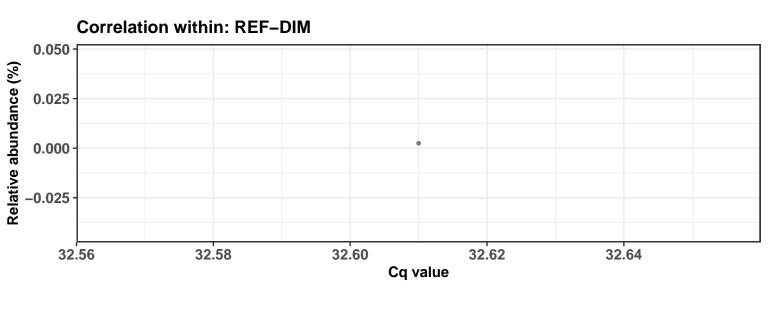
k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Bacillales; f\_\_Bacillaceae; g\_\_Oceanobacillus; Ambiguous\_taxa



 $log_e(S) = 7.981$ , p = 0.200,  $\hat{\rho}_{Spearman} = -0.271$ ,  $Cl_{95\%}$  [-0.808, 0.236],  $n_{pairs} = 24$ 

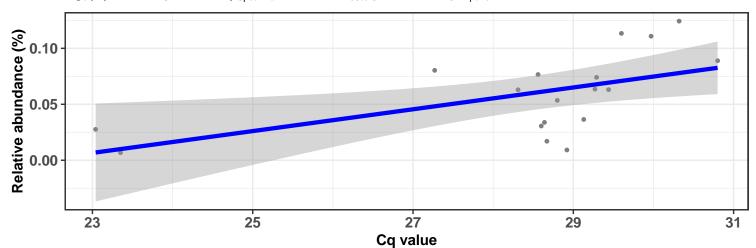


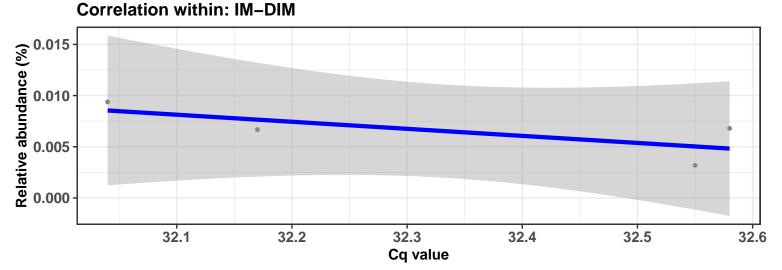




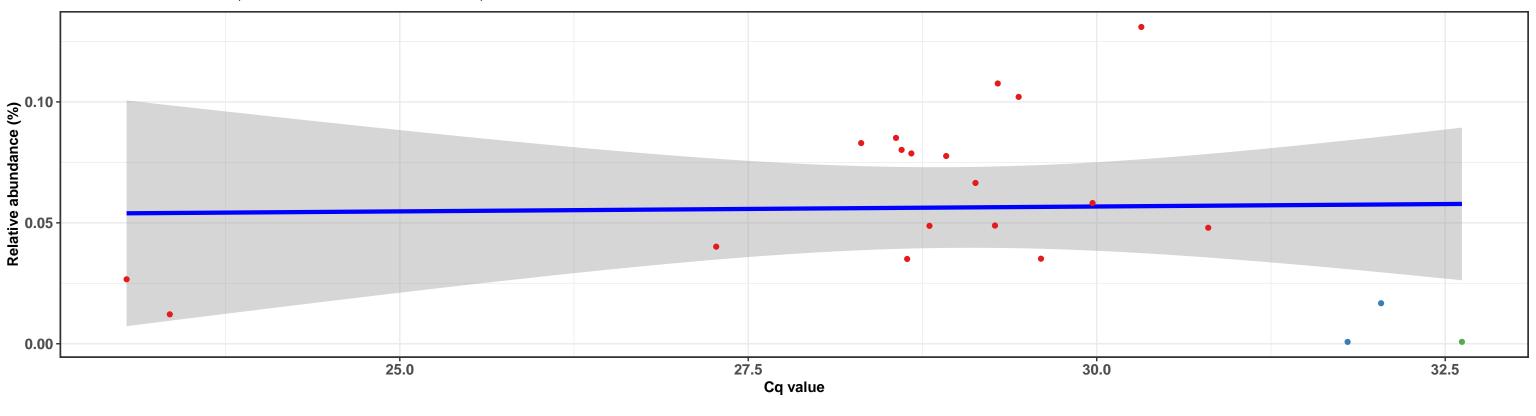
#### Correlation within: IM-DIC

 $log_e(S) = 5.886, p = 0.005, \widehat{\rho}_{Spearman} = 0.628, Cl_{95\%} [0.242, 1.090], n_{pairs} = 18$ 



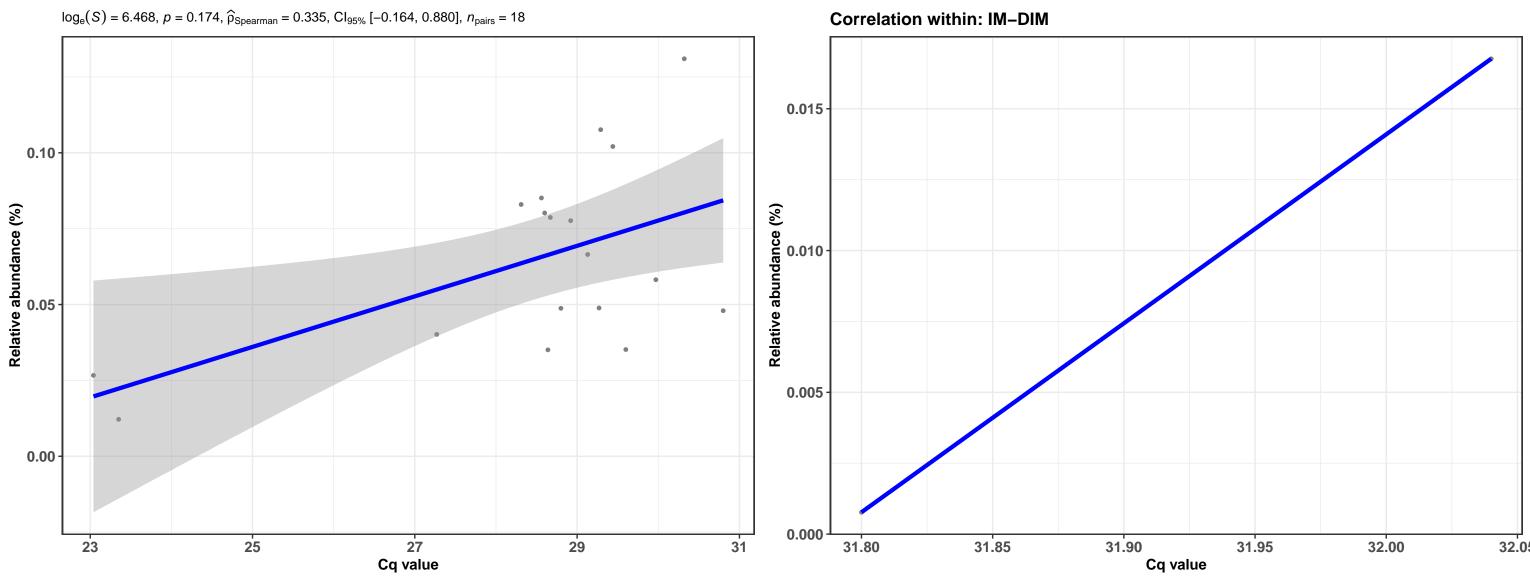


 $log_e(S) = 7.464$ , p = 0.567,  $\widehat{\rho}_{Spearman} = -0.132$ ,  $Cl_{95\%}$  [-0.716, 0.425],  $n_{pairs} = 21$ 



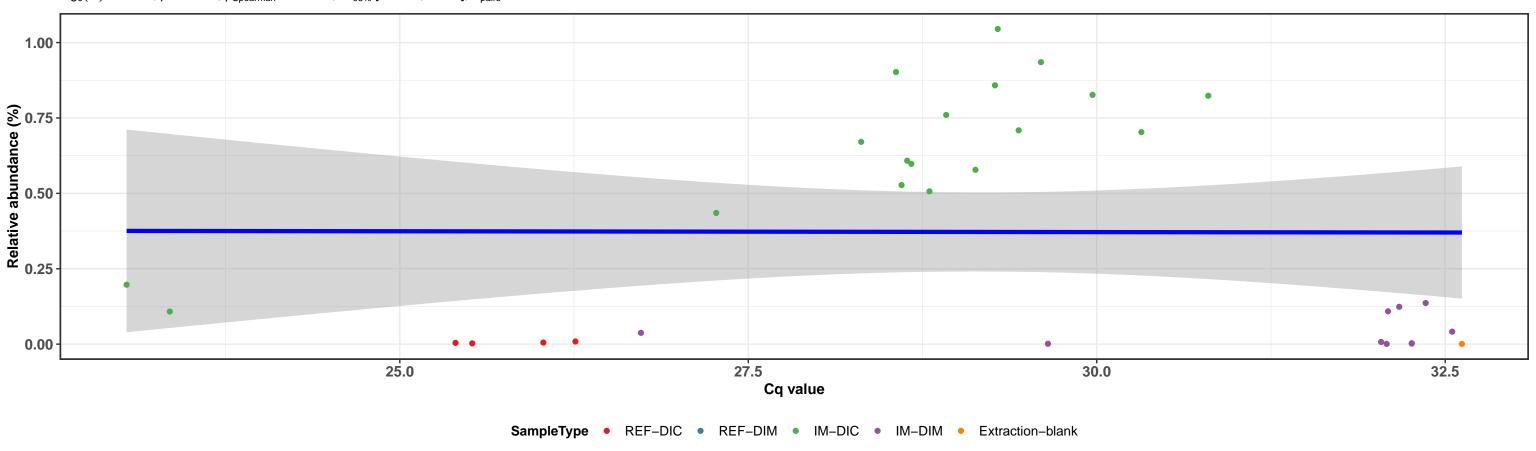


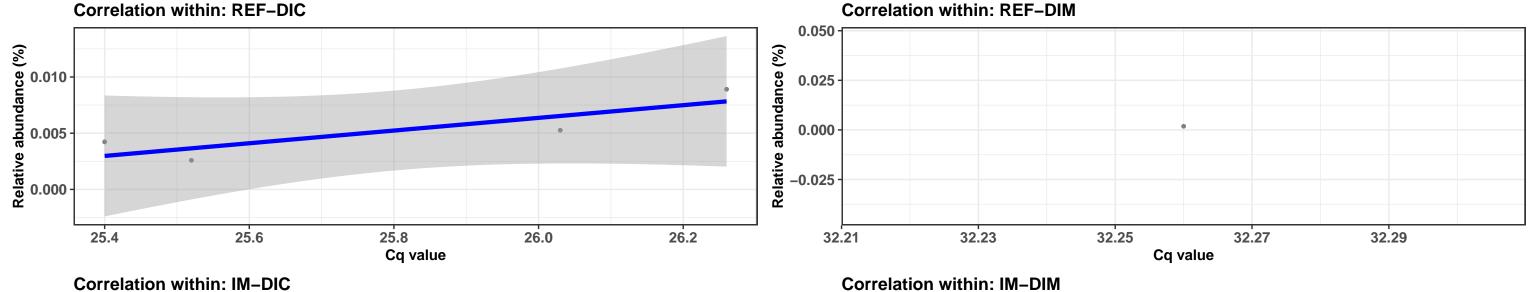
# Correlation within: IM-DIC

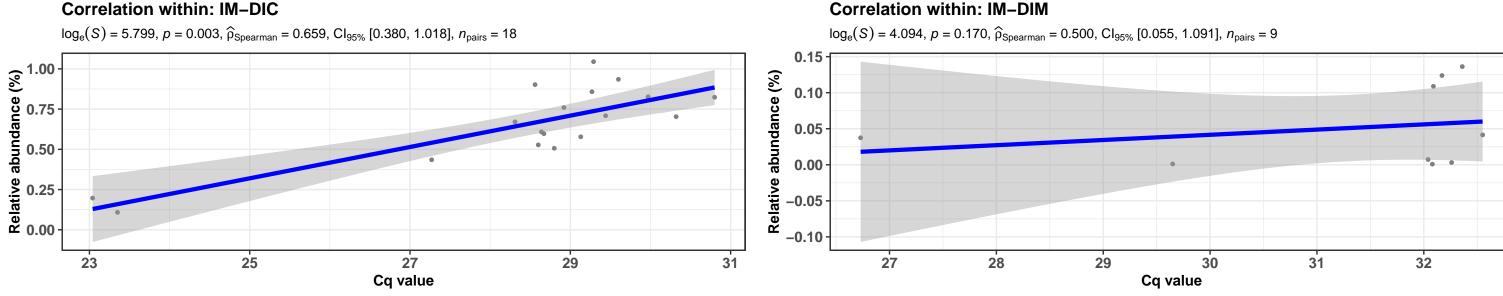


k\_Bacteria; p\_Firmicutes; c\_Bacilli; o\_Bacillales; f\_Bacillaceae; g\_Oceanobacillus; s\_Oceanobacillus caeni

 $log_e(S) = 8.807$ , p = 0.519,  $\hat{\rho}_{Spearman} = -0.116$ ,  $Cl_{95\%}$  [-0.468, 0.290],  $n_{pairs} = 33$ 

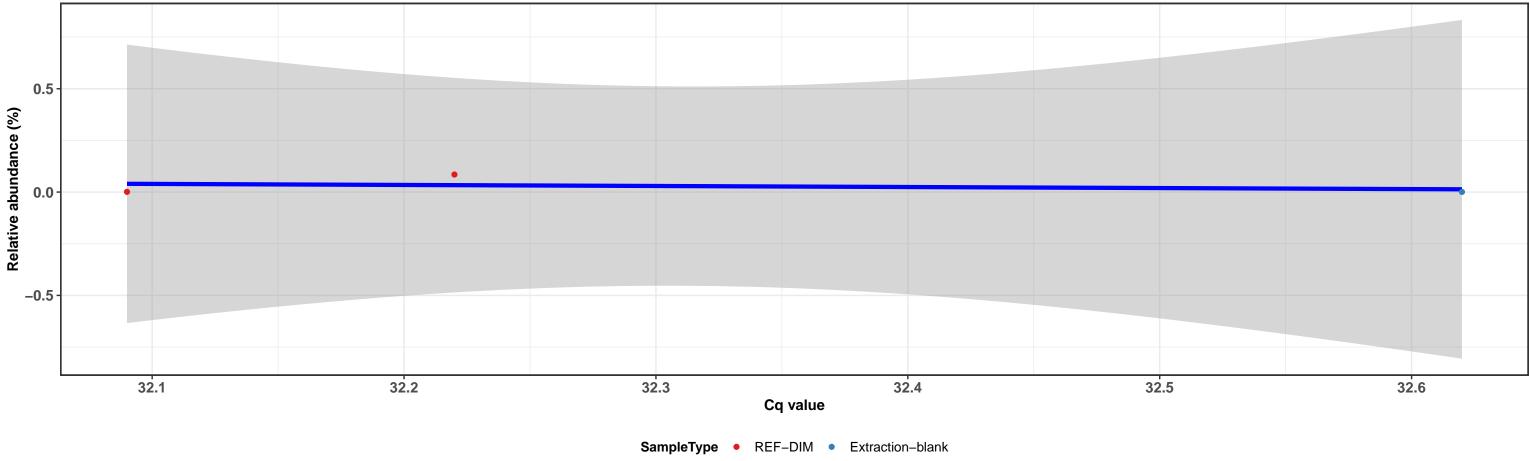




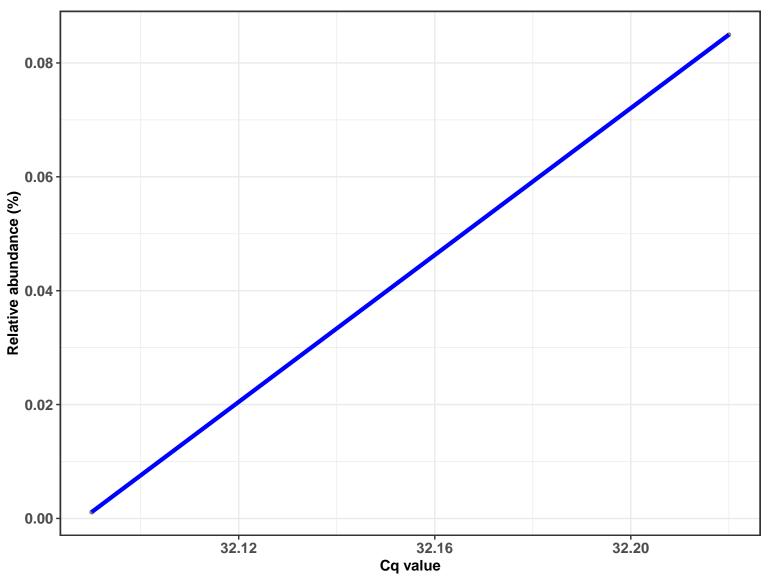


k\_\_Bacteria; p\_\_Actinobacteria; c\_\_Actinobacteria; o\_\_Propionibacteriales; f\_\_Propionibacteriaceae; g\_\_Cutibacterium; NA

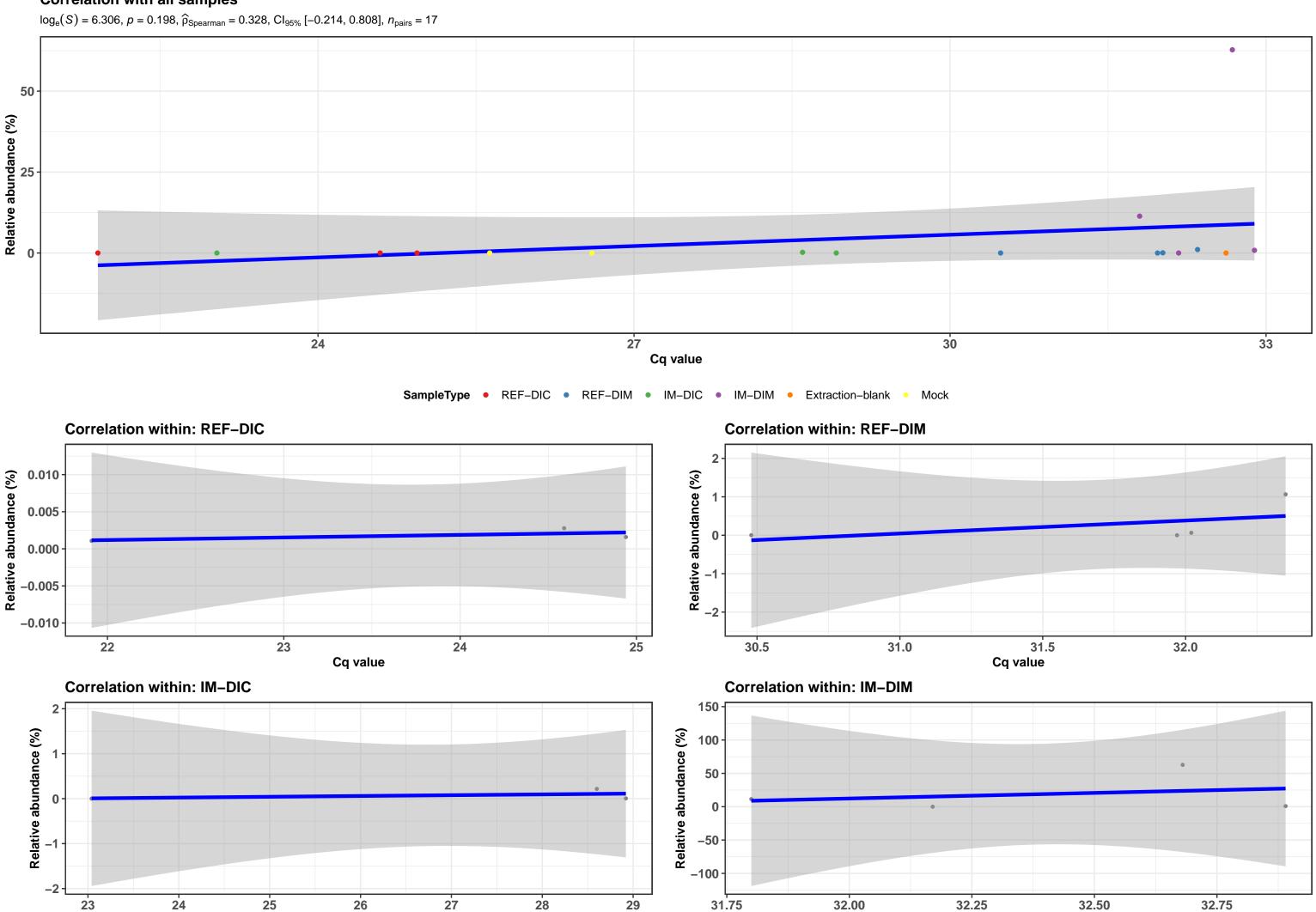








k\_\_Bacteria; p\_\_Tenericutes; c\_\_Mollicutes; o\_\_Mycoplasmatales; f\_\_Mycoplasmataceae; g\_\_Mycoplasma; s\_\_uncultured Mycoplasma sp. Correlation with all samples

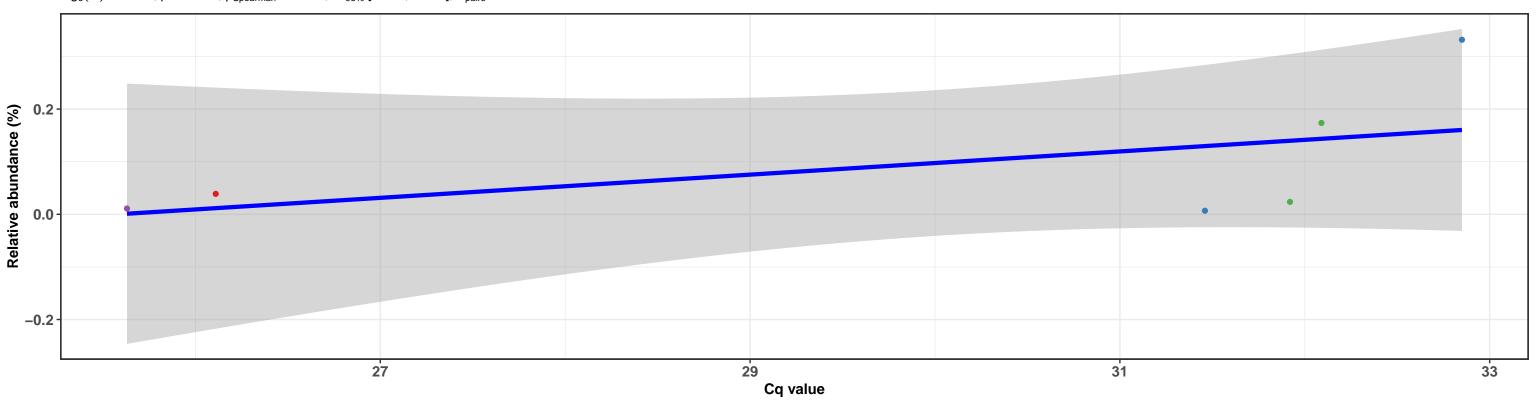


Cq value

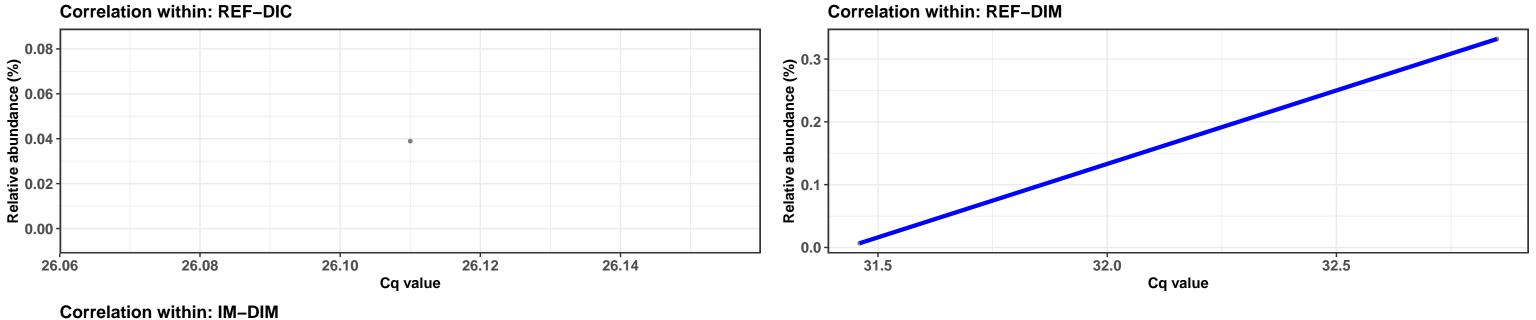
Cq value

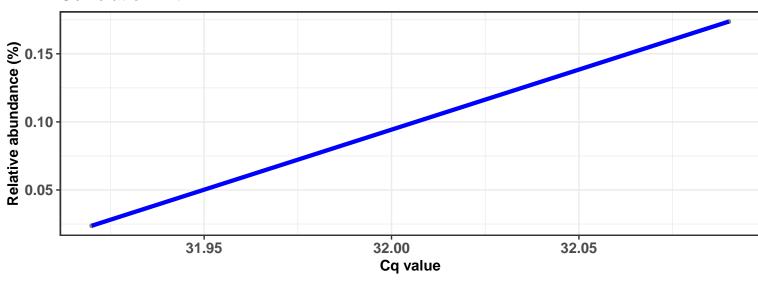
k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Alphaproteobacteria; o\_\_Sphingomonadales; f\_\_Sphingomonadaceae; g\_\_Sphingomonas; NA

 $log_e(S) = 2.303, p = 0.111, \hat{\rho}_{Spearman} = 0.714, Cl_{95\%} [0.071, 1.467], n_{pairs} = 6$ 

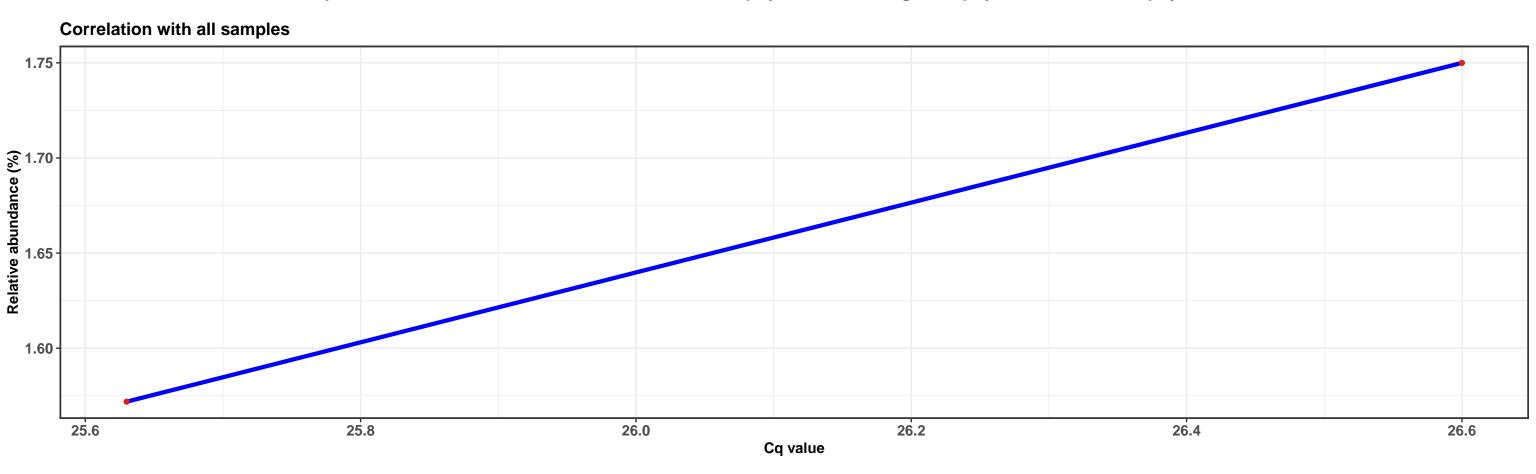






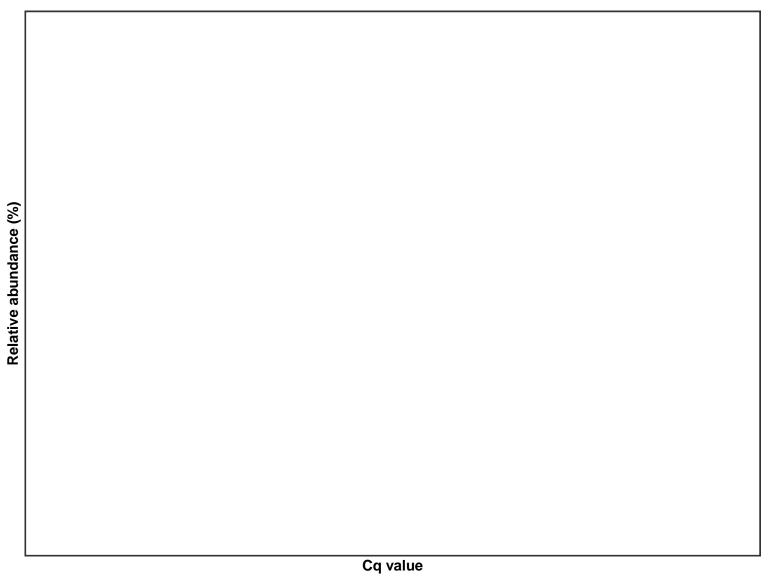


k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Bacillales; f\_\_Staphylococcaceae; g\_\_Staphylococcus; s\_\_Staphylococcus aureus



SampleType • Mock

# **Correlation within:**



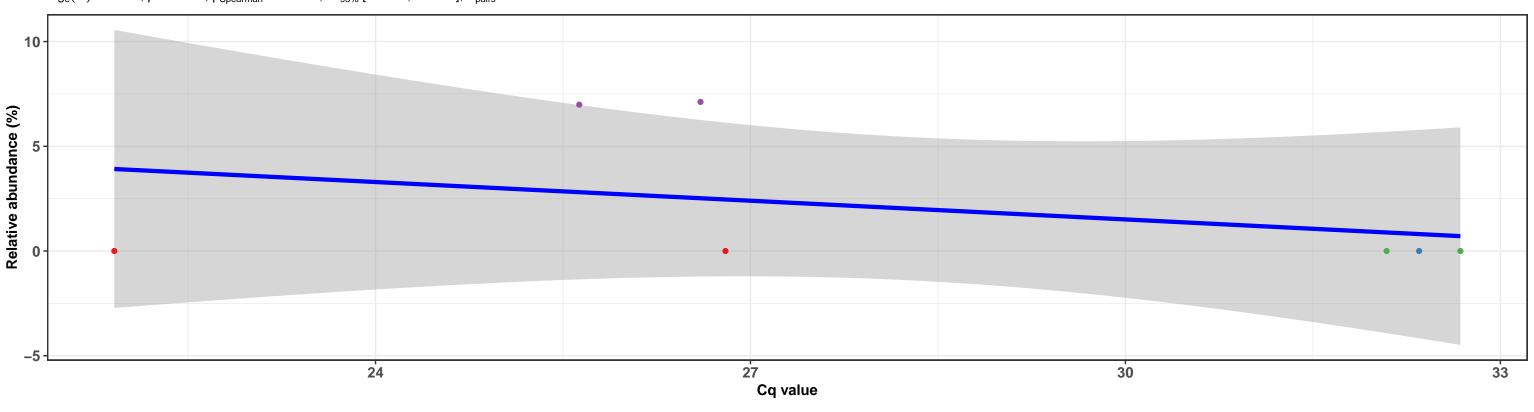
k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Gammaproteobacteria; o\_\_Enterobacteriales; f\_\_Enterobacteriaceae; g\_\_Escherichia-Shigella; NA

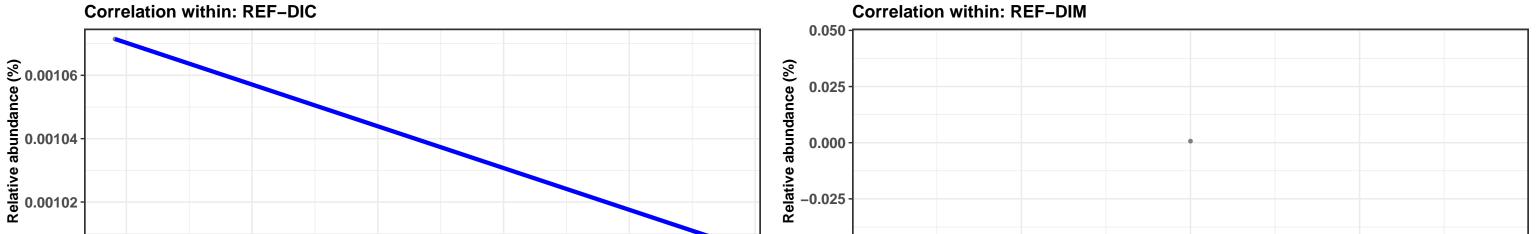


 $log_e(S) = 4.585$ , p = 0.052,  $\widehat{\rho}_{Spearman} = -0.750$ ,  $Cl_{95\%}$  [-1.204, -0.438],  $n_{pairs} = 7$ 

23

22





27

32.300

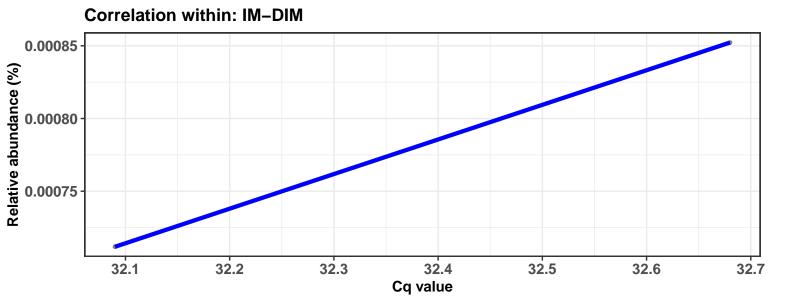
32.325

32.350

Cq value

32.375

SampleType • REF-DIC • REF-DIM • IM-DIM • Mock



24

Cq value

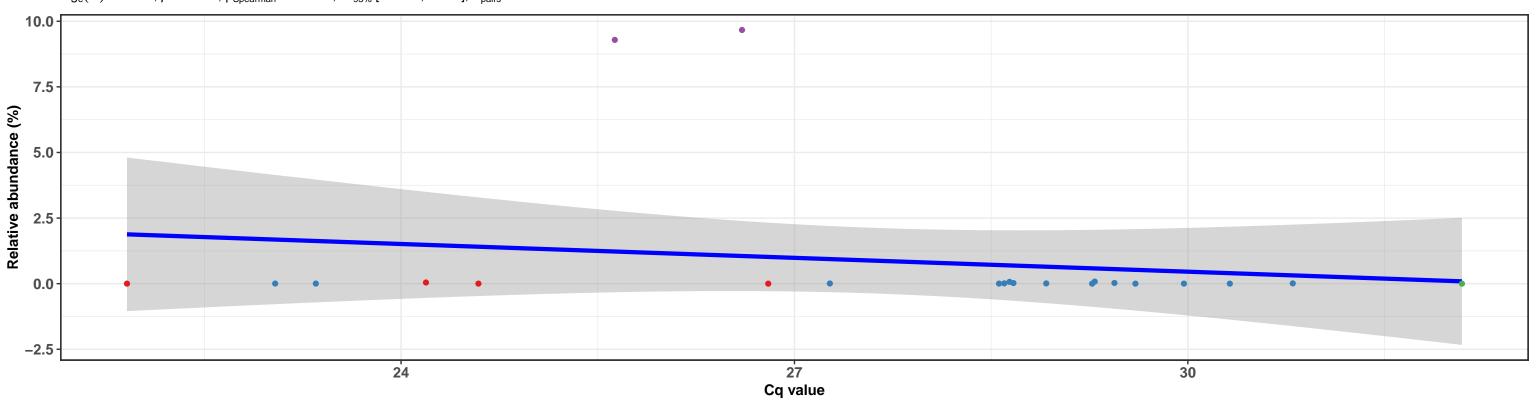
25

26

k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Gammaproteobacteria; o\_\_Enterobacteriales; f\_\_Enterobacteriaceae; g\_\_Escherichia-Shigella; NA



 $\log_{e}(S) = 7.672, p = 0.342, \widehat{\rho}_{Spearman} = -0.213, Cl_{95\%} [-0.620, 0.224], n_{pairs} = 22$ 

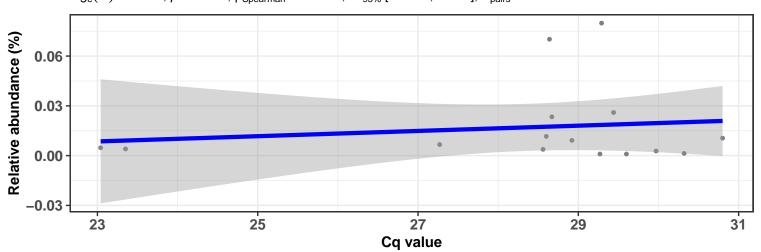


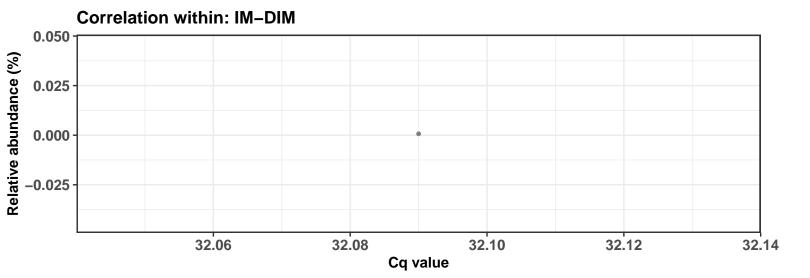


# Correlation within: REF-DIC (%) 0.10 0.05 0.00 0.05 0.00 22 23 24 25 26 27 Cq value

#### Correlation within: IM-DIC

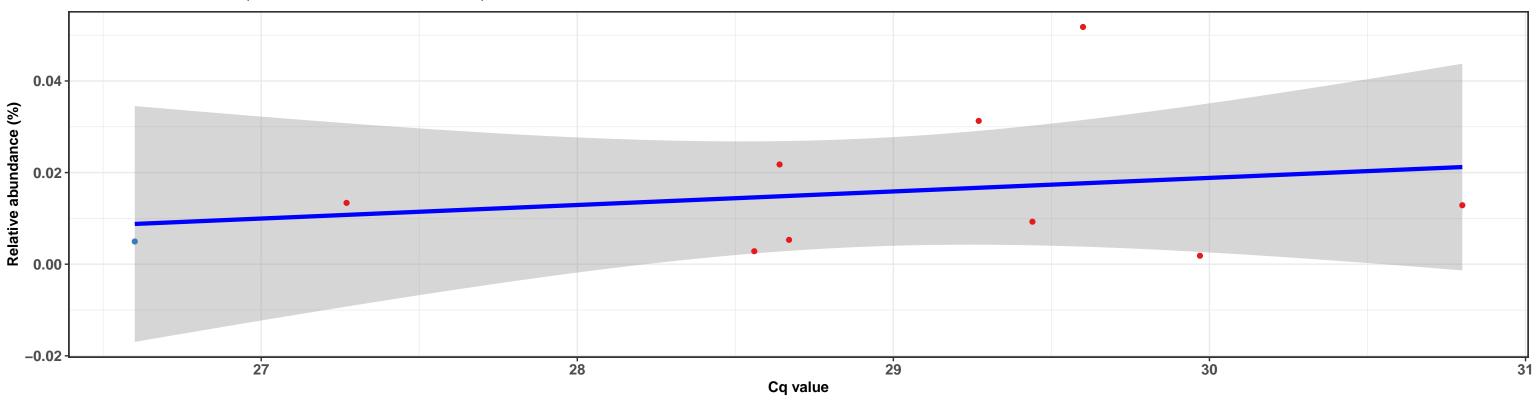
 $log_e(S) = 6.446$ , p = 0.657,  $\hat{\rho}_{Spearman} = -0.125$ ,  $Cl_{95\%}$  [-0.632, 0.331],  $n_{pairs} = 15$ 





k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Gammaproteobacteria; o\_\_Enterobacteriales; f\_\_Enterobacteriaceae; g\_\_Escherichia-Shigella; NA

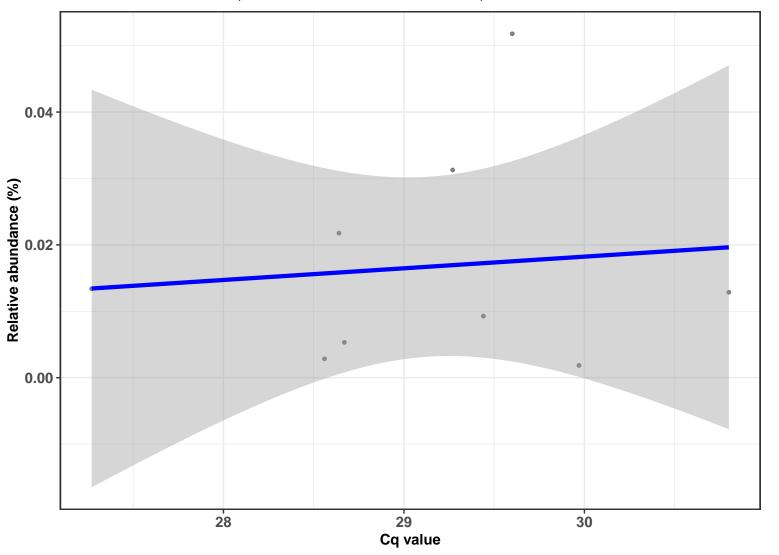
 $log_e(S) = 4.970, p = 0.726, \hat{\rho}_{Spearman} = 0.127, Cl_{95\%} [-0.576, 0.789], n_{pairs} = 10$ 



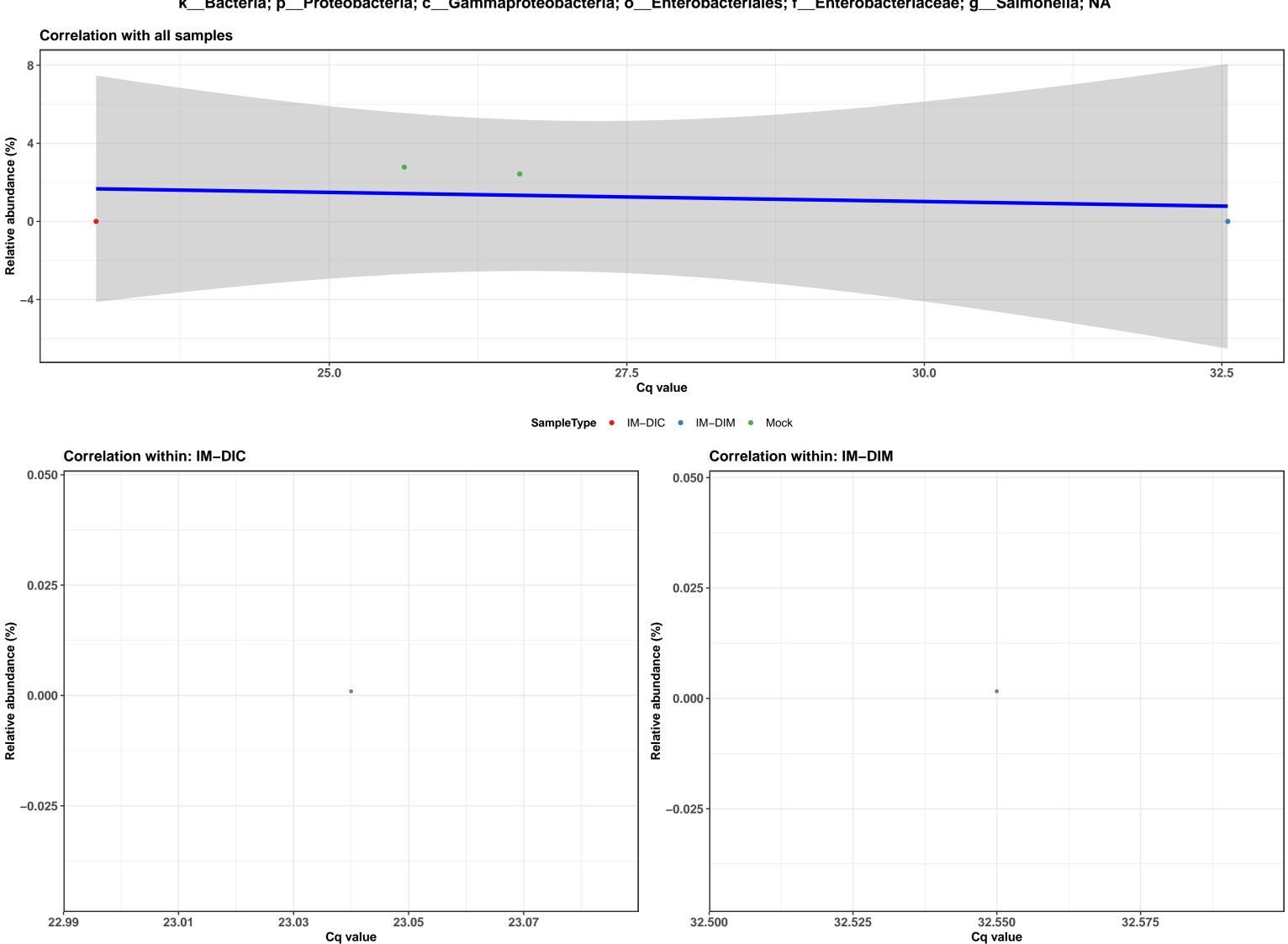
SampleType • IM-DIC • Mock

# Correlation within: IM-DIC

 $log_e(S) = 4.820, p = 0.932, \hat{\rho}_{Spearman} = -0.033, Cl_{95\%} [-0.752, 0.657], n_{pairs} = 9$ 



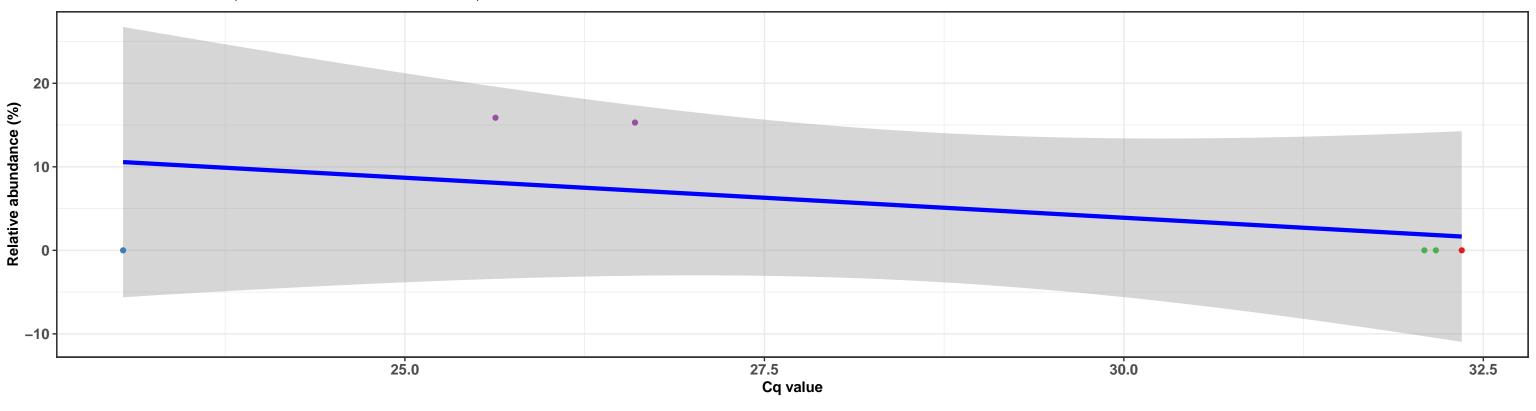
k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Gammaproteobacteria; o\_\_Enterobacteriales; f\_\_Enterobacteriaceae; g\_\_Salmonella; NA



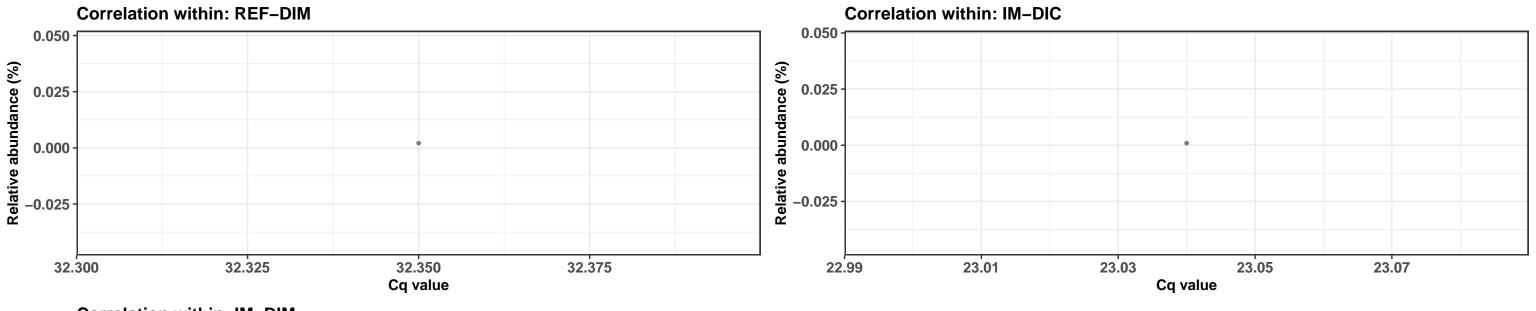
k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Gammaproteobacteria; o\_\_Enterobacteriales; f\_\_Enterobacteriaceae; g\_\_Salmonella; NA

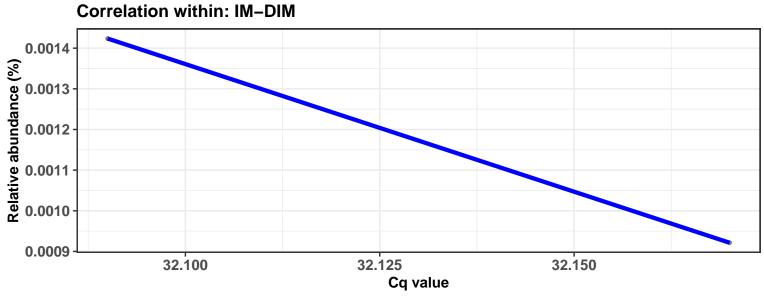


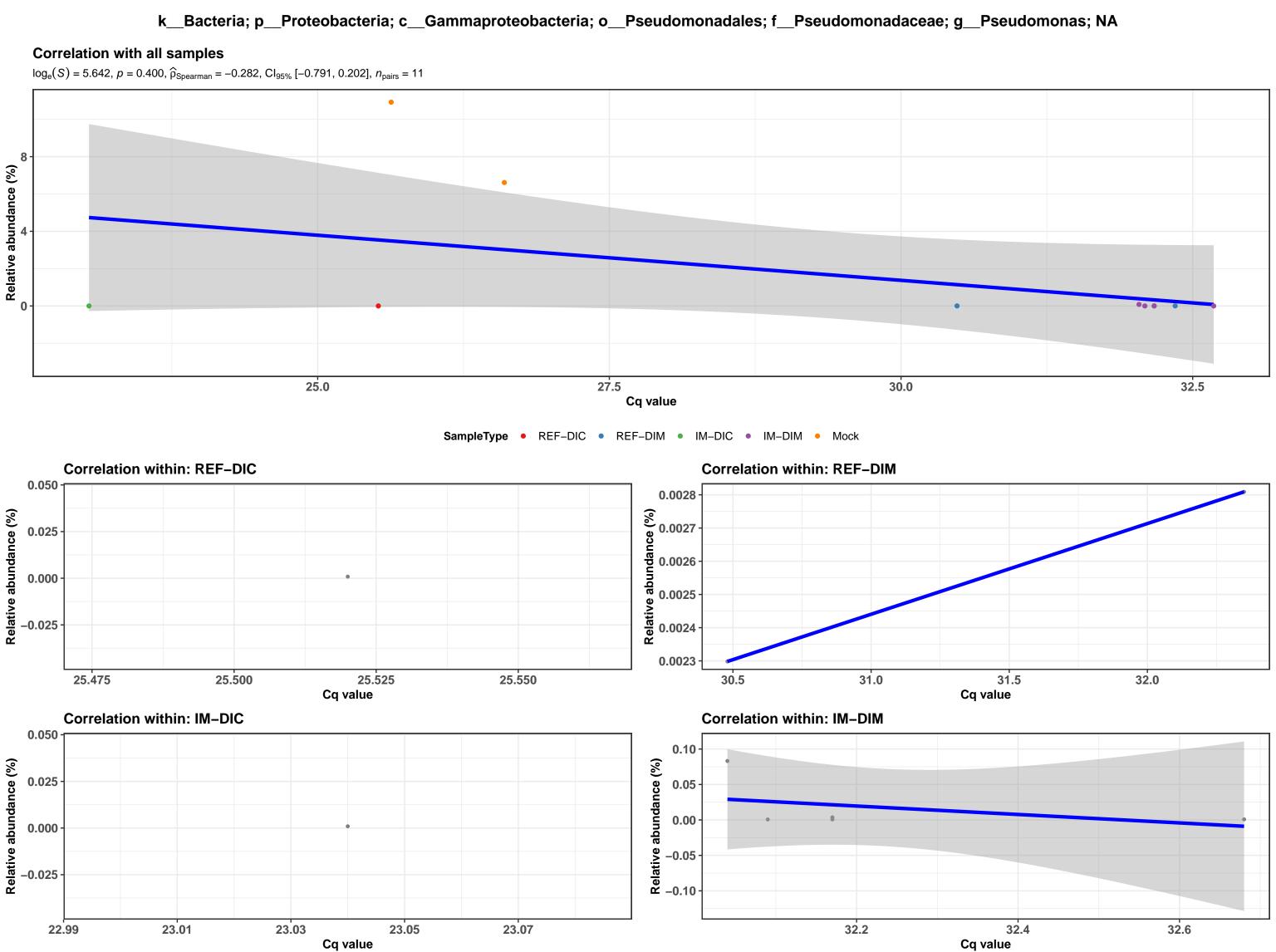
 $log_e(S) = 3.738$ , p = 0.704,  $\widehat{\rho}_{Spearman} = -0.200$ ,  $Cl_{95\%}$  [-1.160, 0.881],  $n_{pairs} = 6$ 



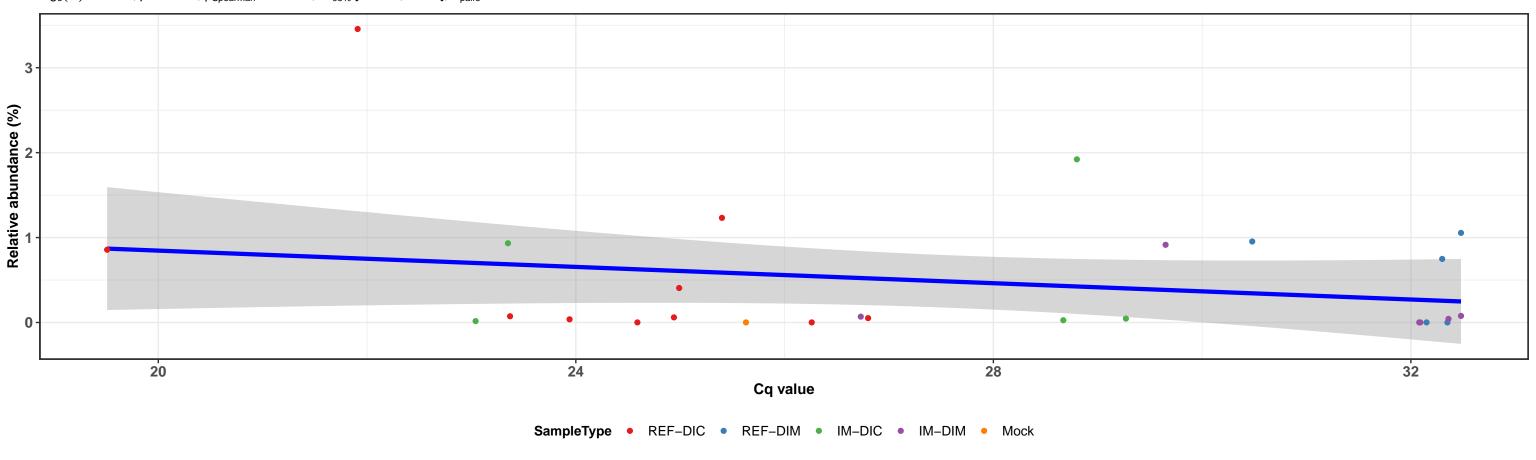




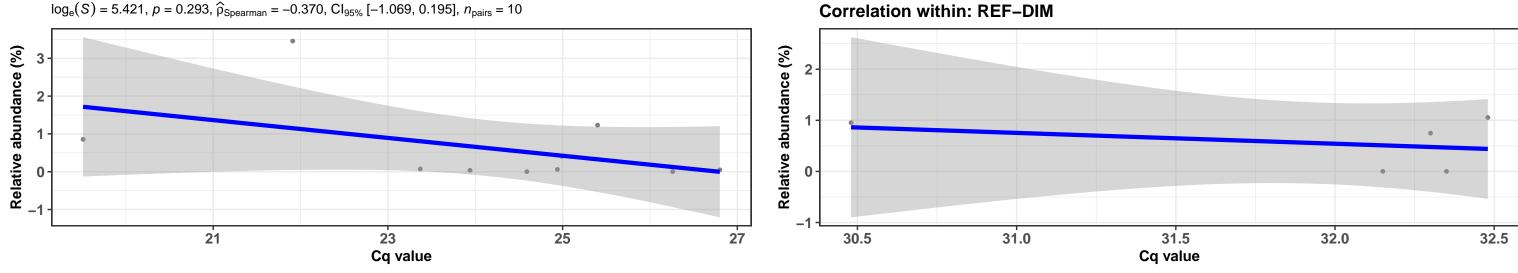


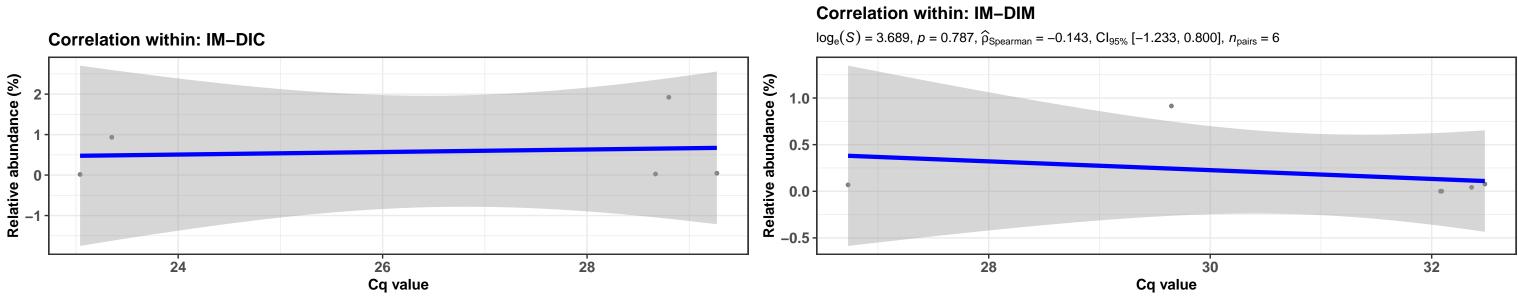


 $\log_{e}(S) = 8.249, p = 0.405, \hat{\rho}_{Spearman} = -0.167, Cl_{95\%} [-0.545, 0.224], n_{pairs} = 27$ 

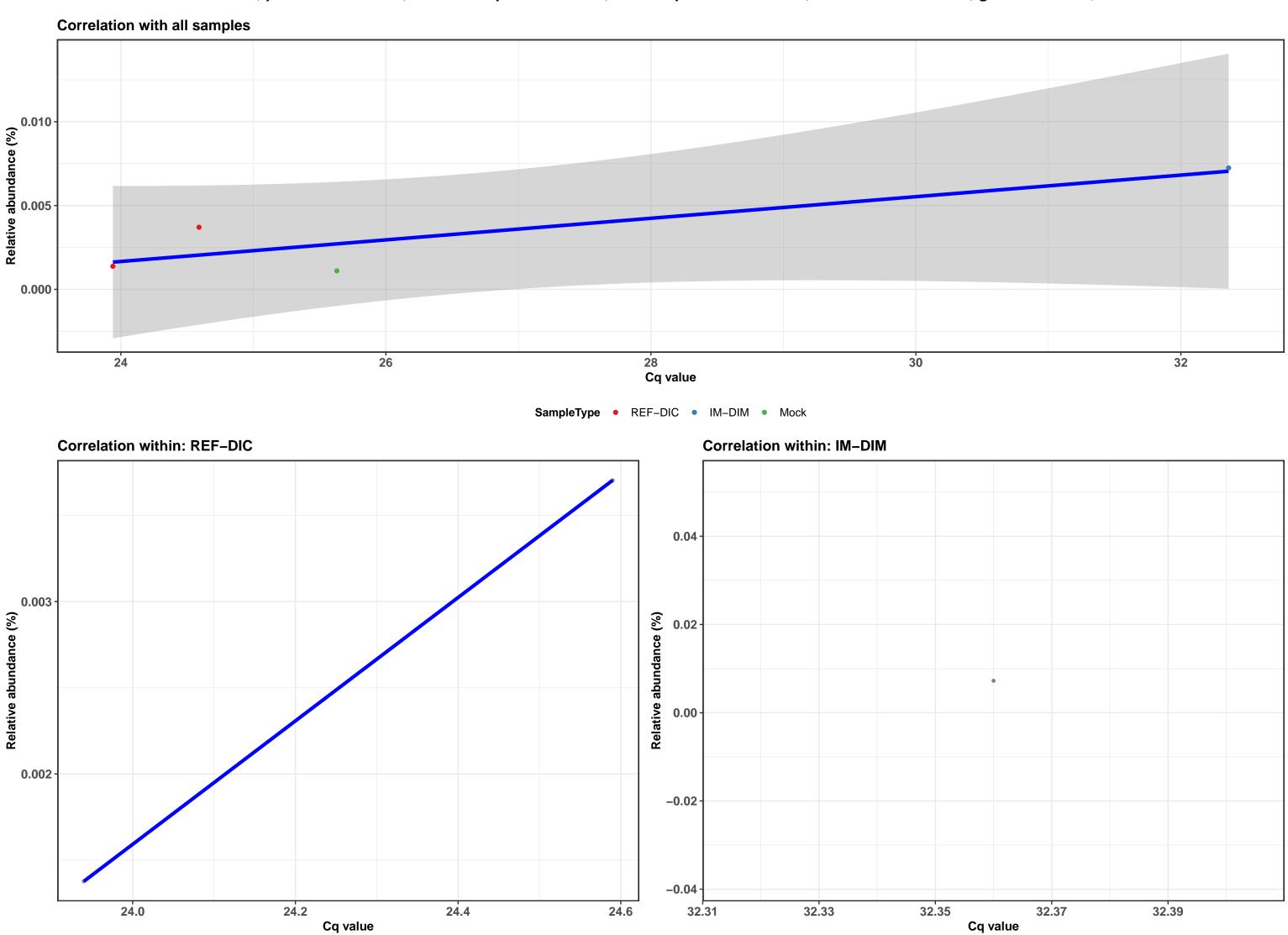


#### Correlation within: REF-DIC

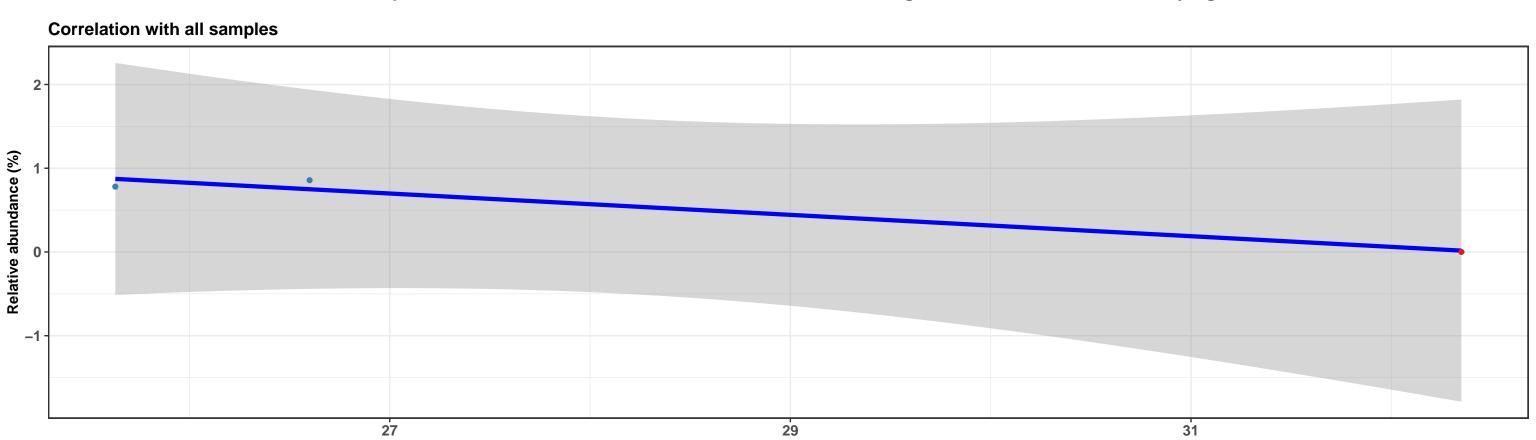




k\_\_Bacteria; p\_\_Proteobacteria; c\_\_Gammaproteobacteria; o\_\_Betaproteobacteriales; f\_\_Burkholderiaceae; g\_\_Acidovorax; NA

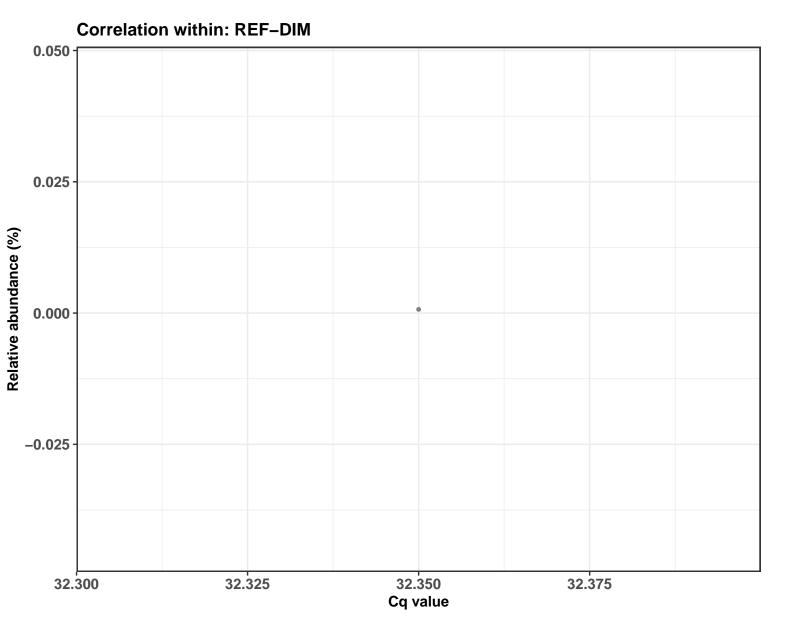


k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Bacillales; f\_\_Listeriaceae; g\_\_Listeria; s\_\_Listeria monocytogenes

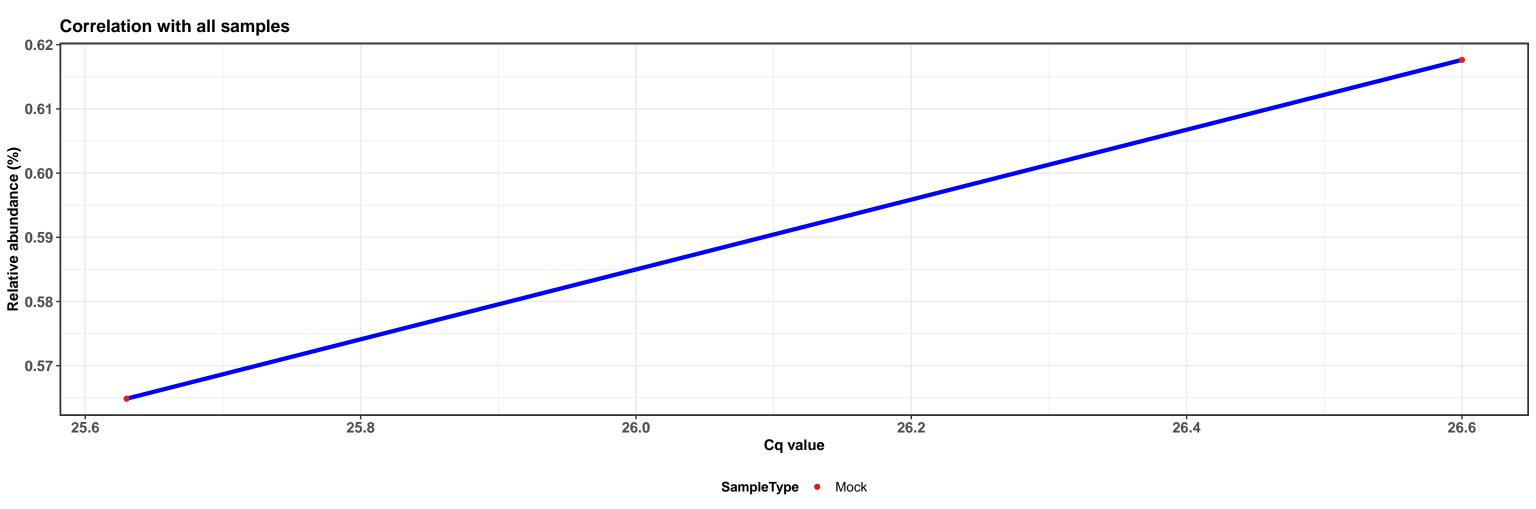




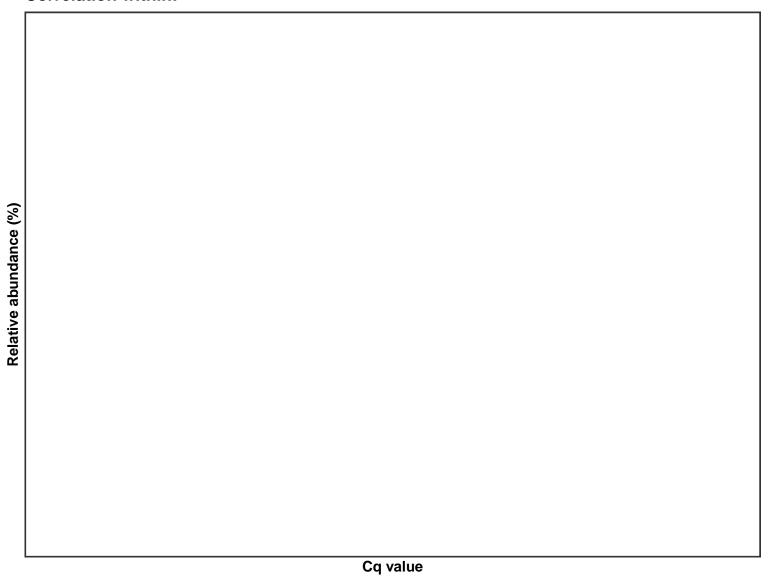
Cq value



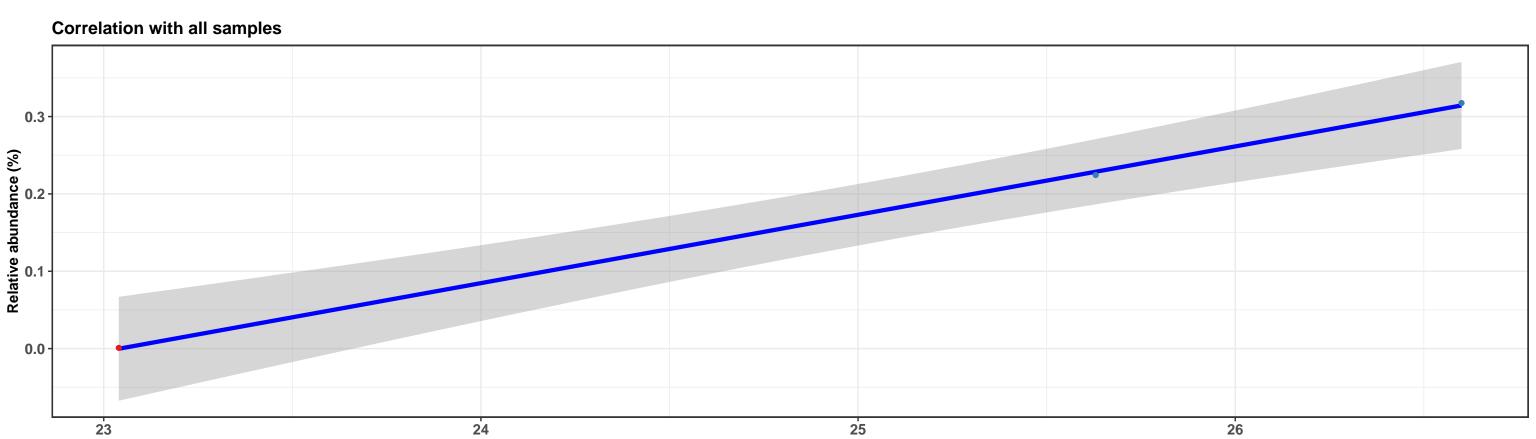
k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Bacillales; f\_\_Listeriaceae; g\_\_Listeria; s\_\_Listeria monocytogenes



# **Correlation within:**

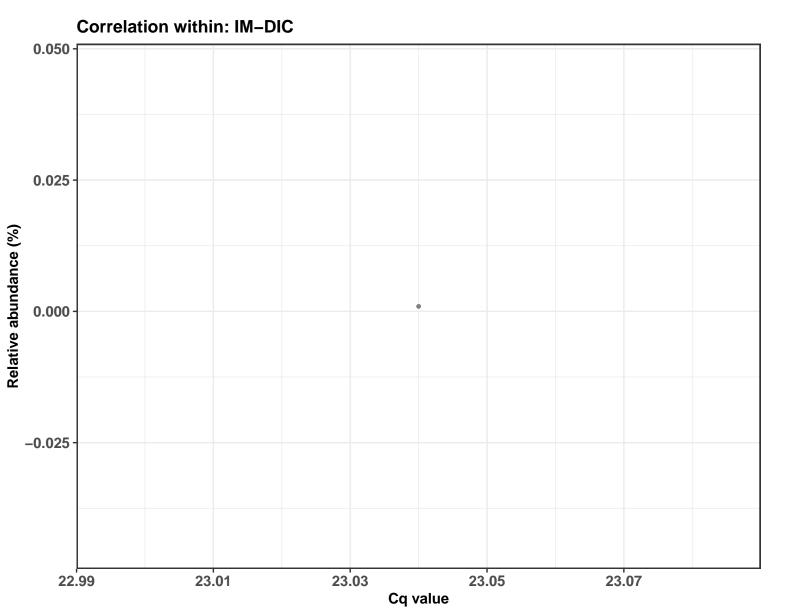


k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Bacillales; f\_\_Listeriaceae; g\_\_Listeria; s\_\_Listeria monocytogenes





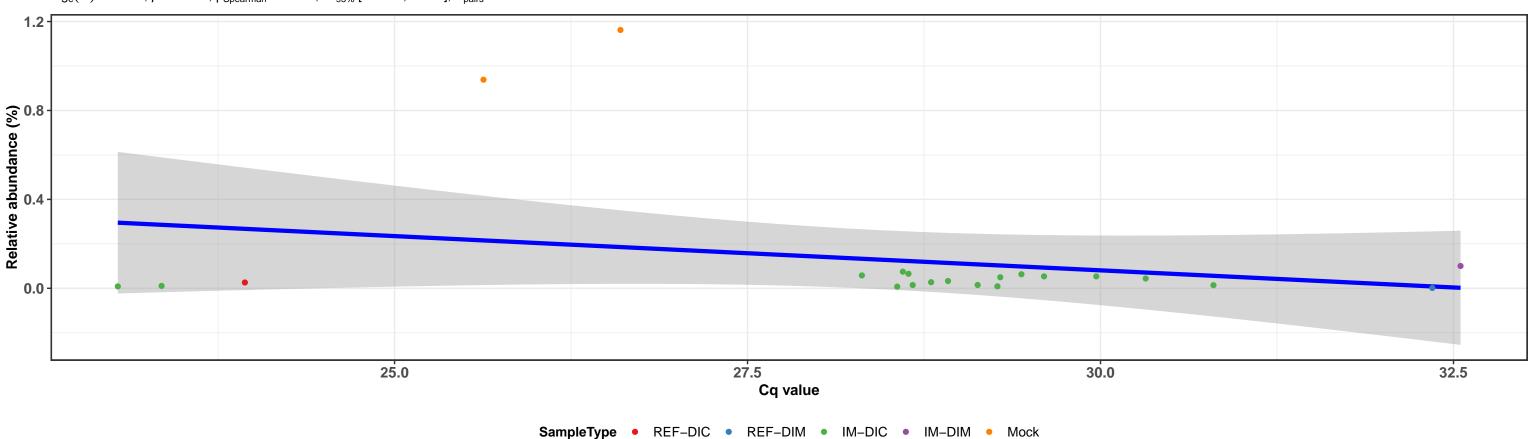
Cq value

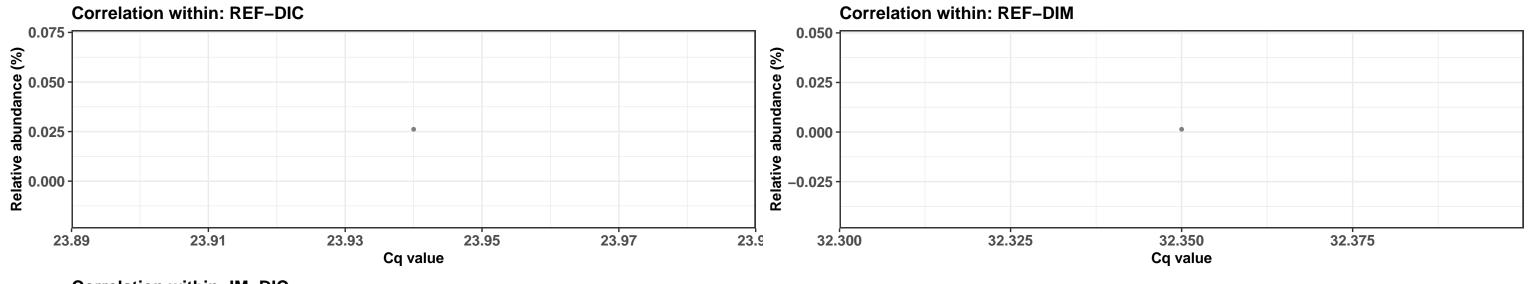


k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Enterococcaceae; g\_\_Enterococcus; s\_\_Enterococcus faecalis

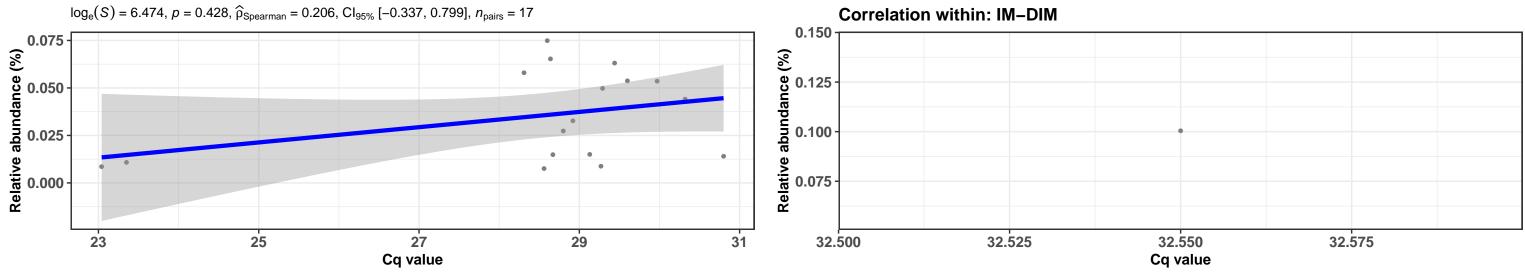


 $log_e(S) = 7.475$ , p = 0.986,  $\hat{\rho}_{Spearman} = 0.004$ ,  $Cl_{95\%}$  [-0.540, 0.501],  $n_{pairs} = 22$ 

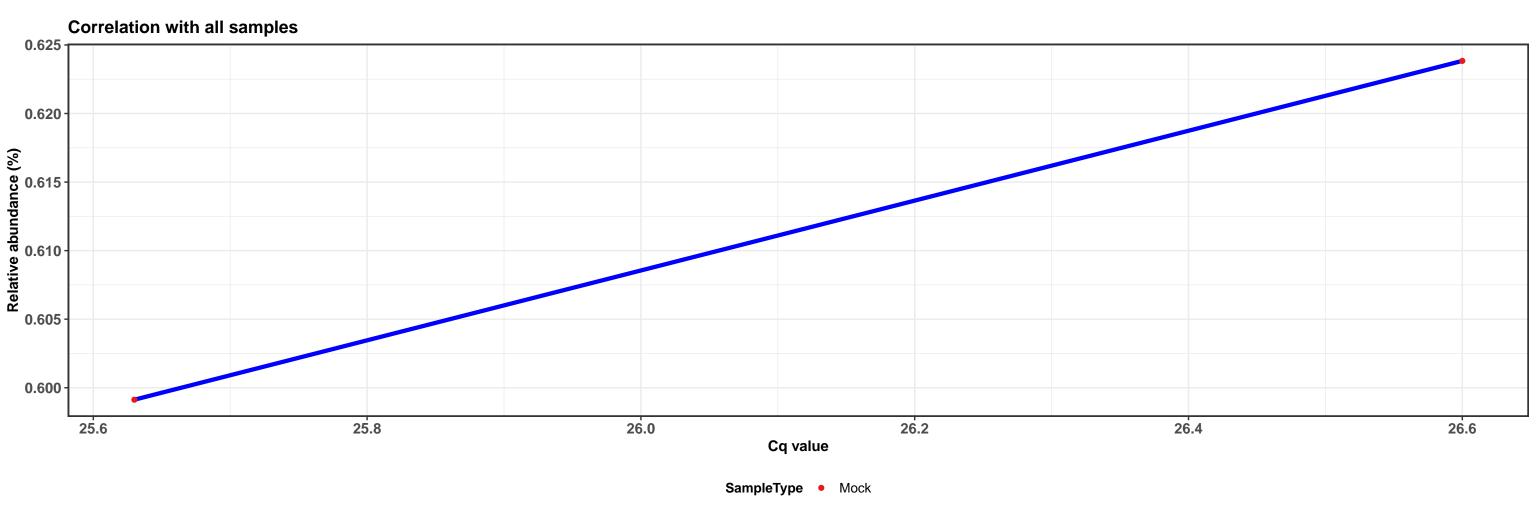




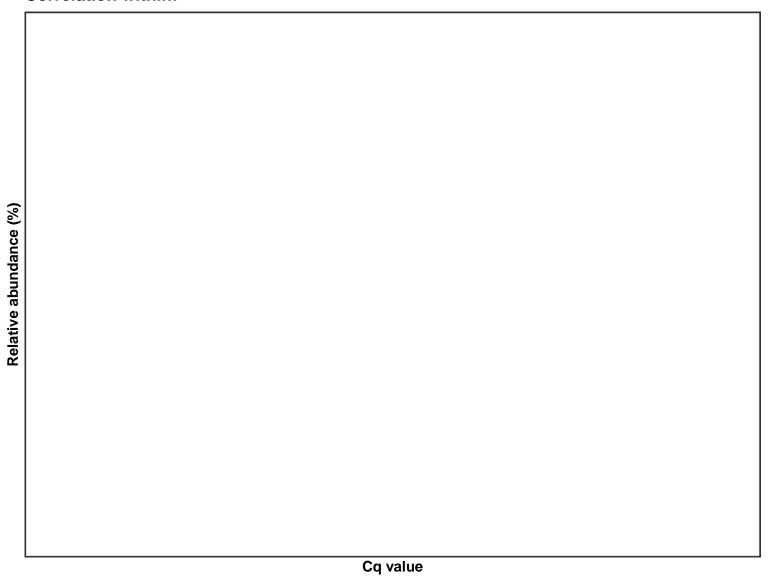




k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Enterococcaceae; g\_\_Enterococcus; s\_\_Enterococcus faecalis

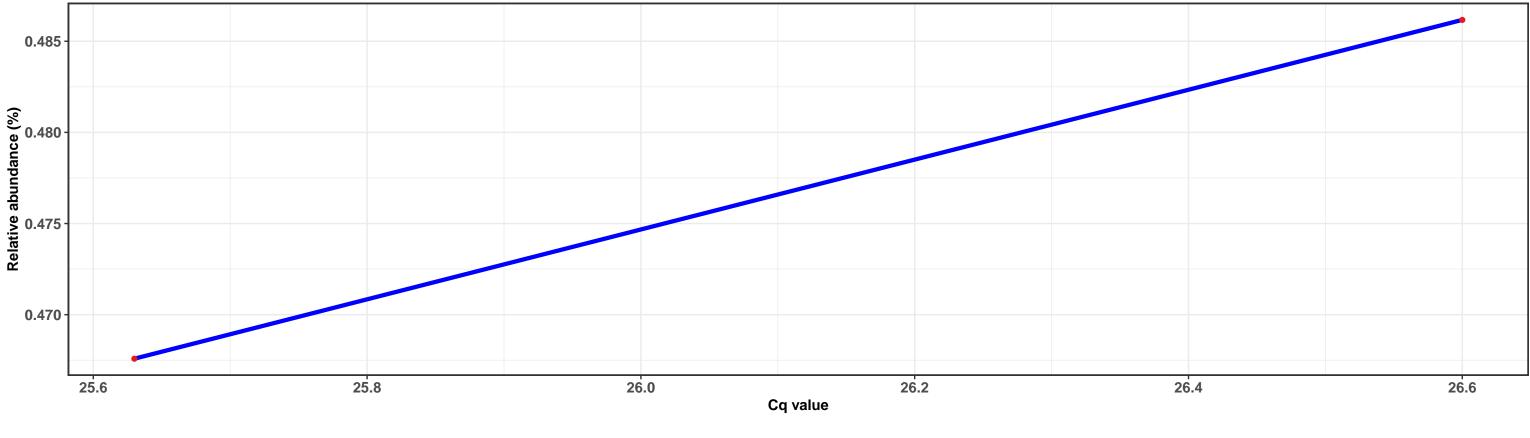


# **Correlation within:**



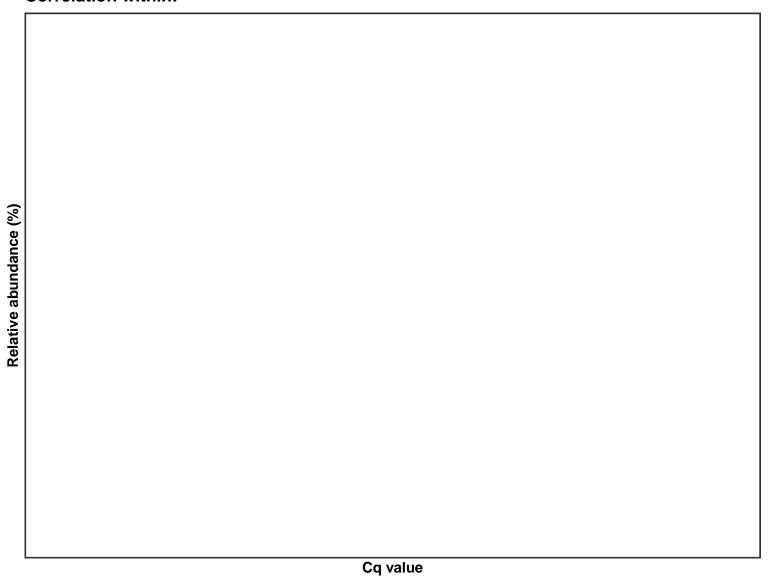
k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Enterococcaceae; g\_\_Enterococcus; s\_\_Enterococcus faecalis



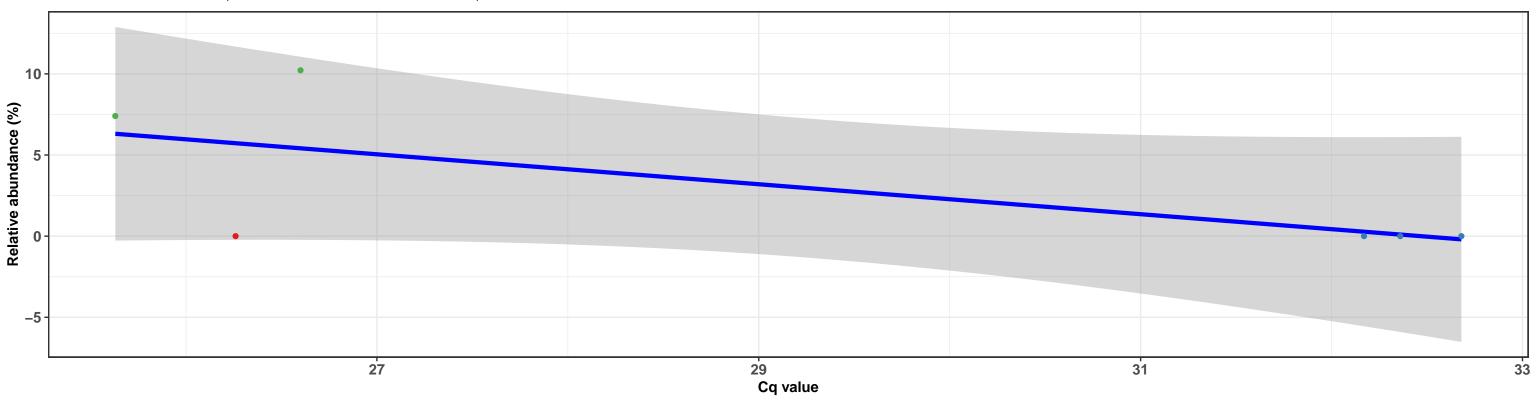


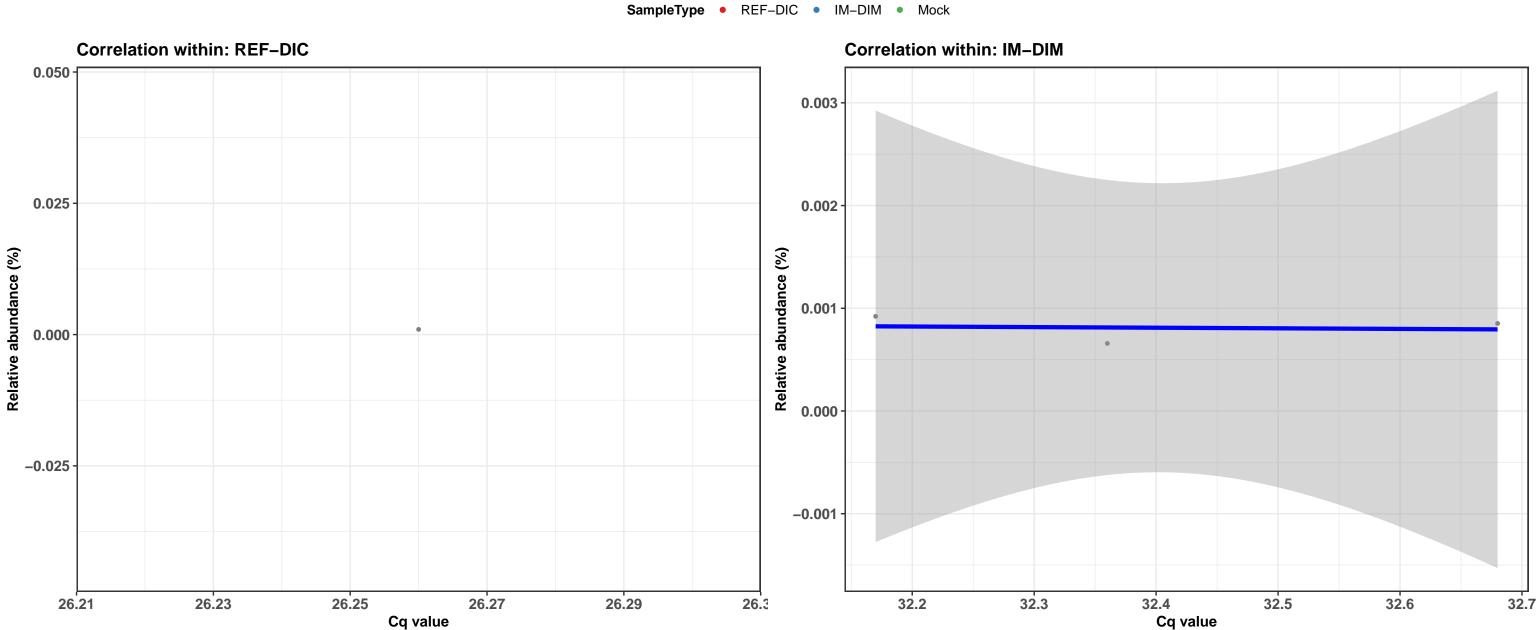
SampleType • Mock

# **Correlation within:**

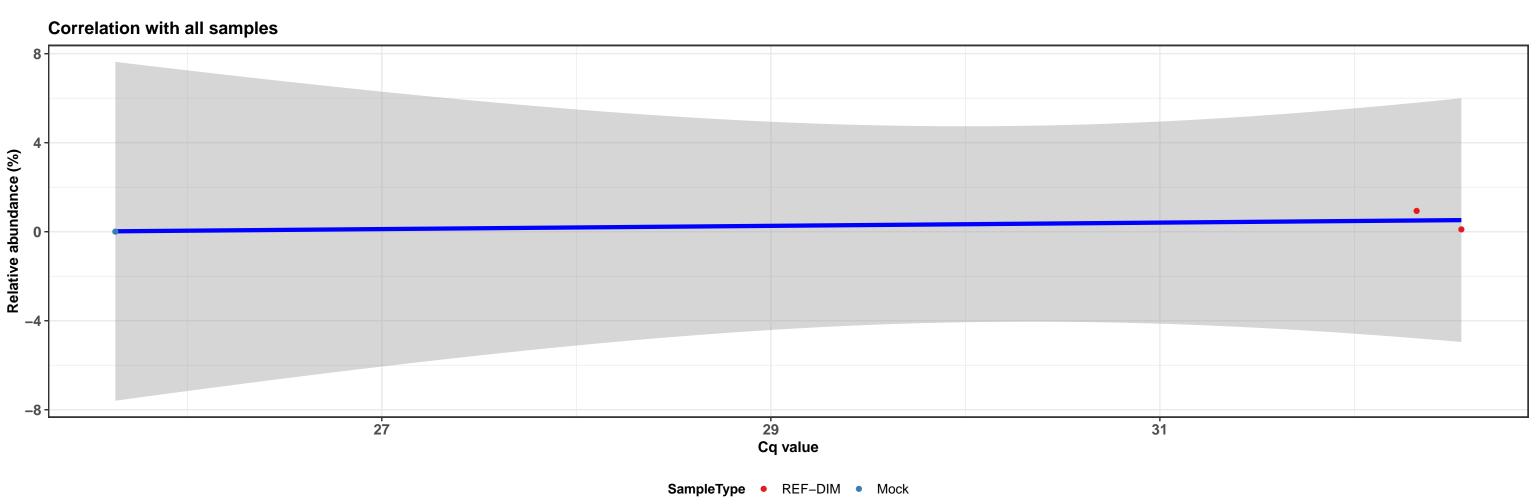


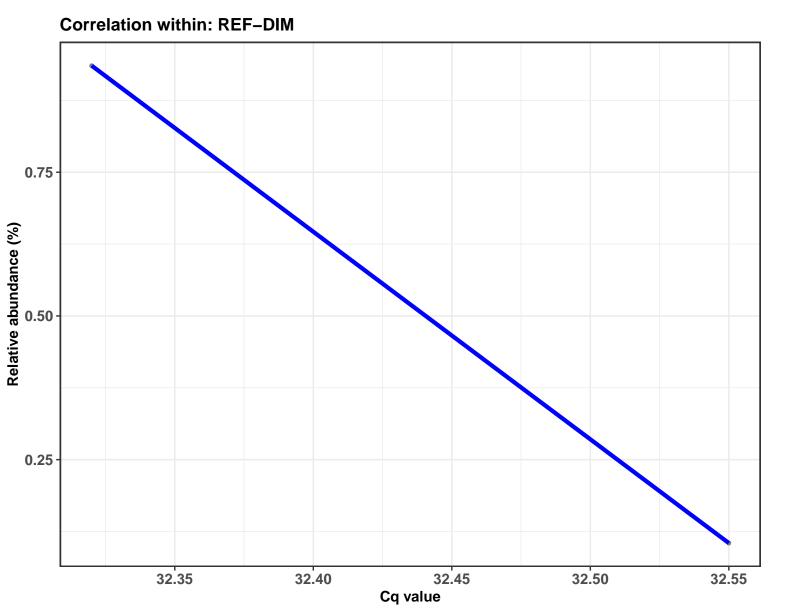
 $\log_{e}(S) = 4.127, p = 0.072, \hat{\rho}_{Spearman} = -0.771, Cl_{95\%} [-1.325, -0.371], n_{pairs} = 6$ 



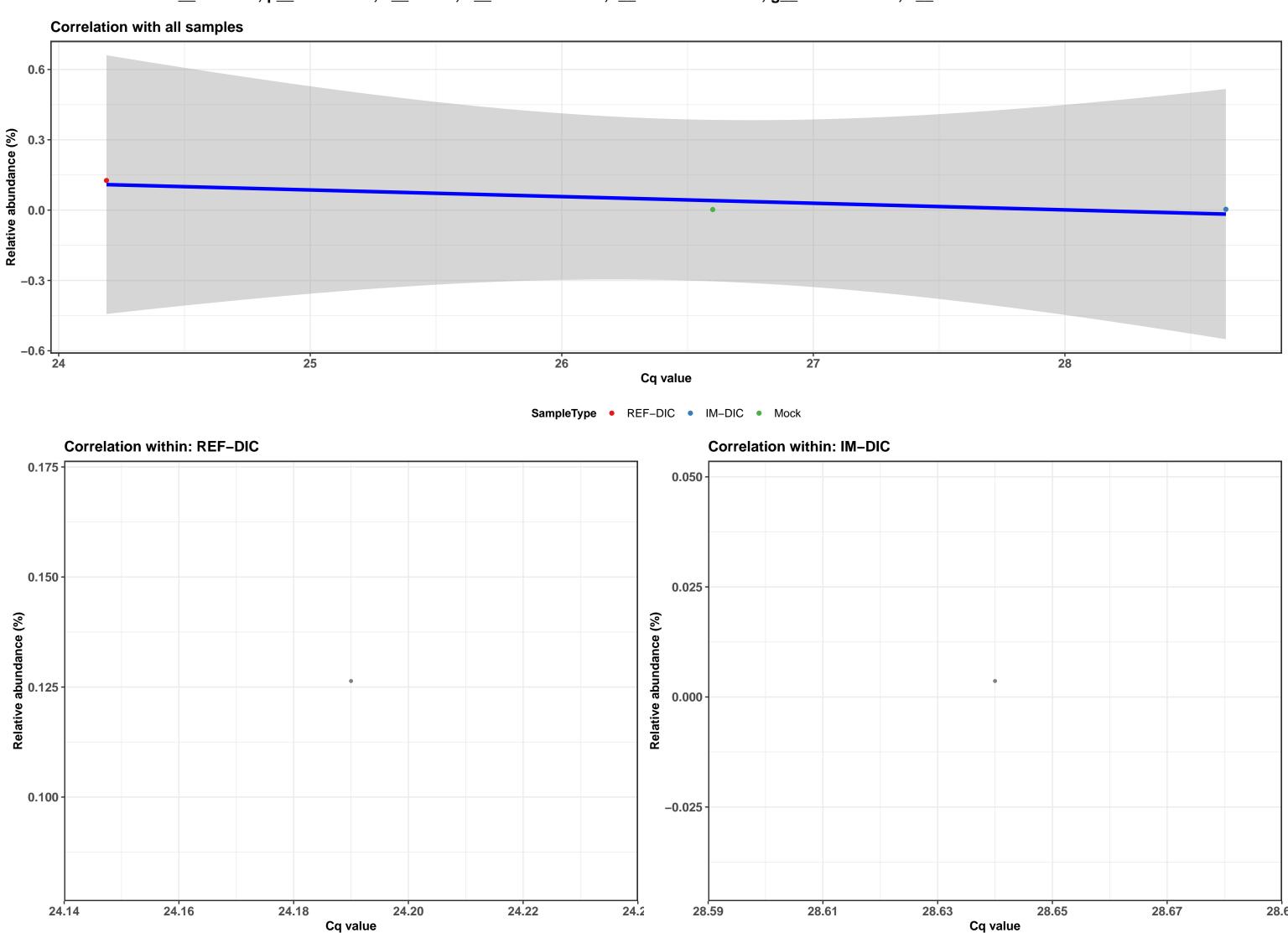


k\_\_Bacteria; p\_\_Cyanobacteria; c\_\_Melainabacteria; o\_\_Obscuribacterales; Ambiguous\_taxa; Ambiguous\_taxa; Ambiguous\_taxa





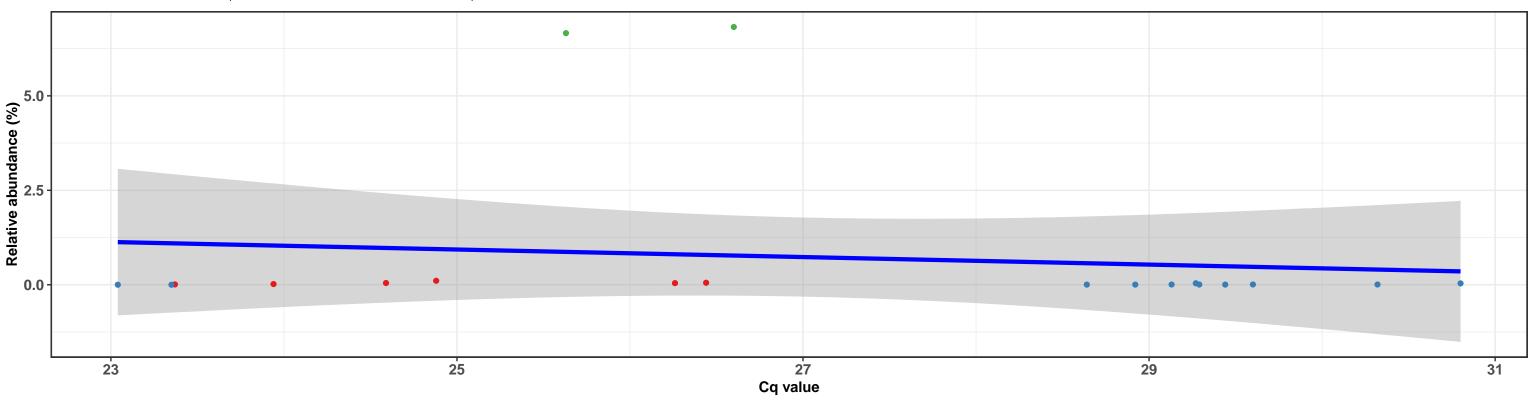
k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Lactobacillaceae; g\_\_Lactobacillus; s\_\_Lactobacillus fermentum

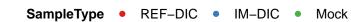


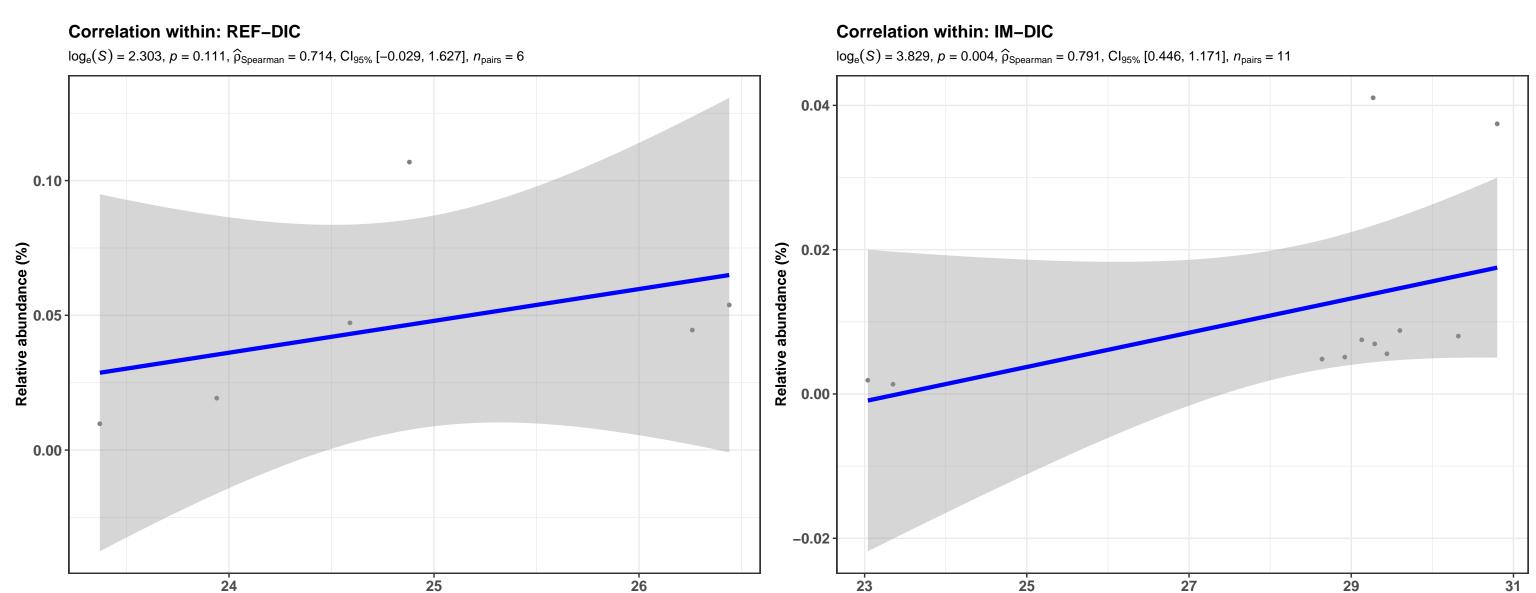
k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Lactobacillaceae; g\_\_Lactobacillus; s\_\_Lactobacillus fermentum

 $\log_{e}(S) = 7.080, p = 0.864, \hat{\rho}_{Spearman} = -0.042, Cl_{95\%} [-0.602, 0.464], n_{pairs} = 19$ 

Cq value



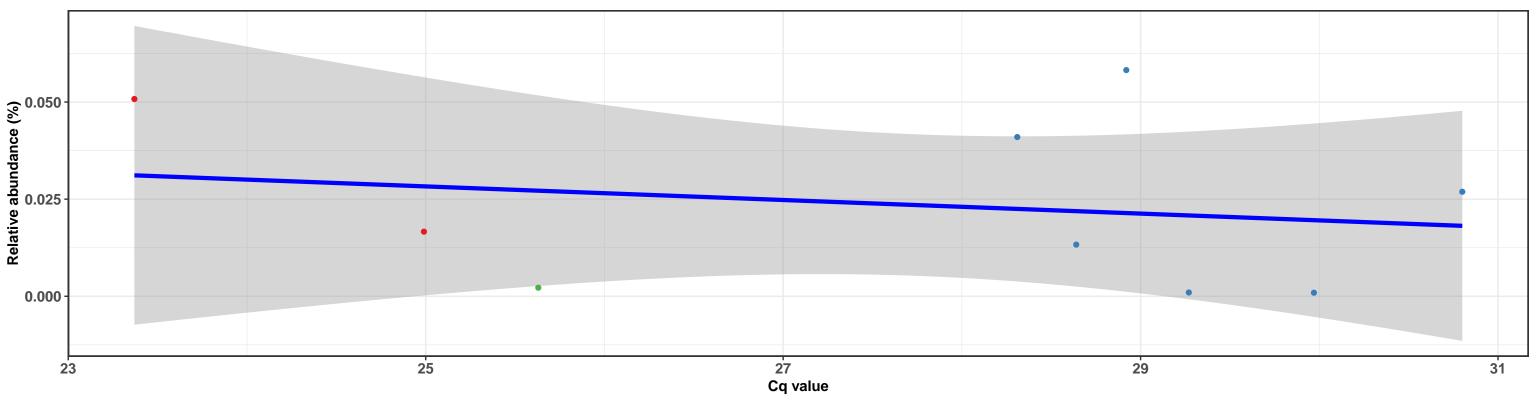




Cq value

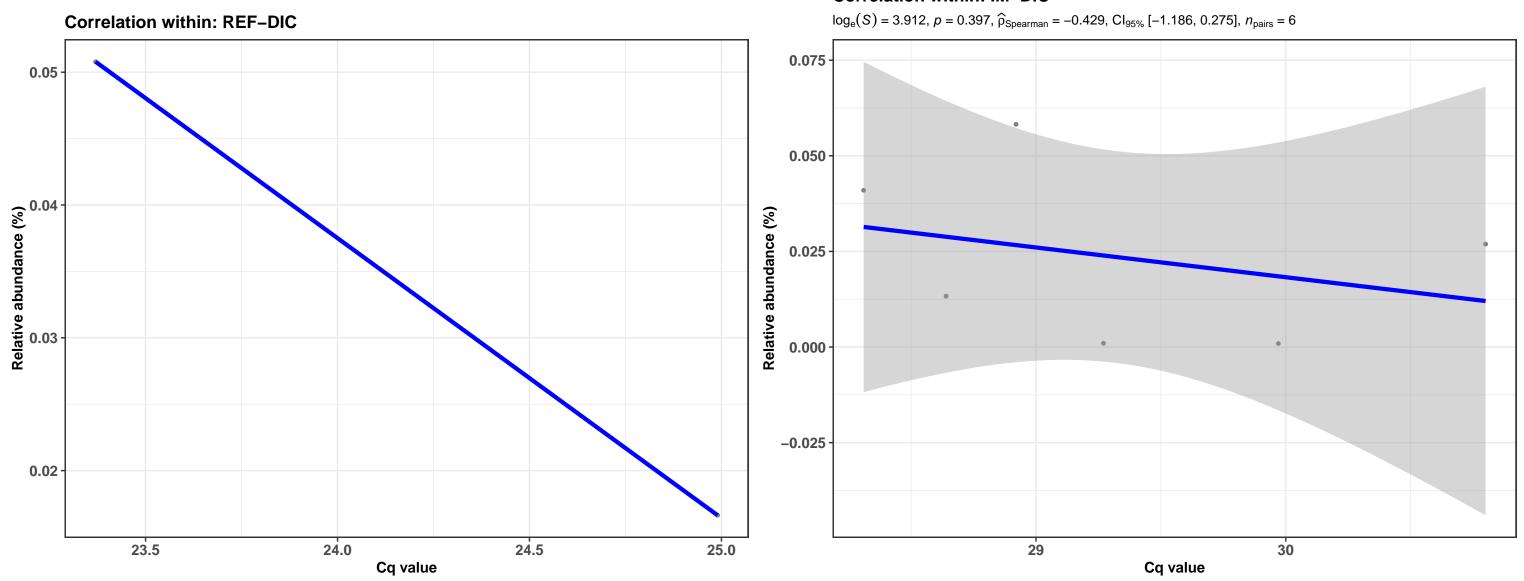
k\_Bacteria; p\_Firmicutes; c\_Bacilli; o\_Lactobacillales; f\_Lactobacillaceae; g\_Lactobacillus; s\_Lactobacillus fermentum

 $log_e(S) = 5.075$ , p = 0.381,  $\widehat{\rho}_{Spearman} = -0.333$ ,  $Cl_{95\%}$  [-1.087, 0.385],  $n_{pairs} = 9$ 

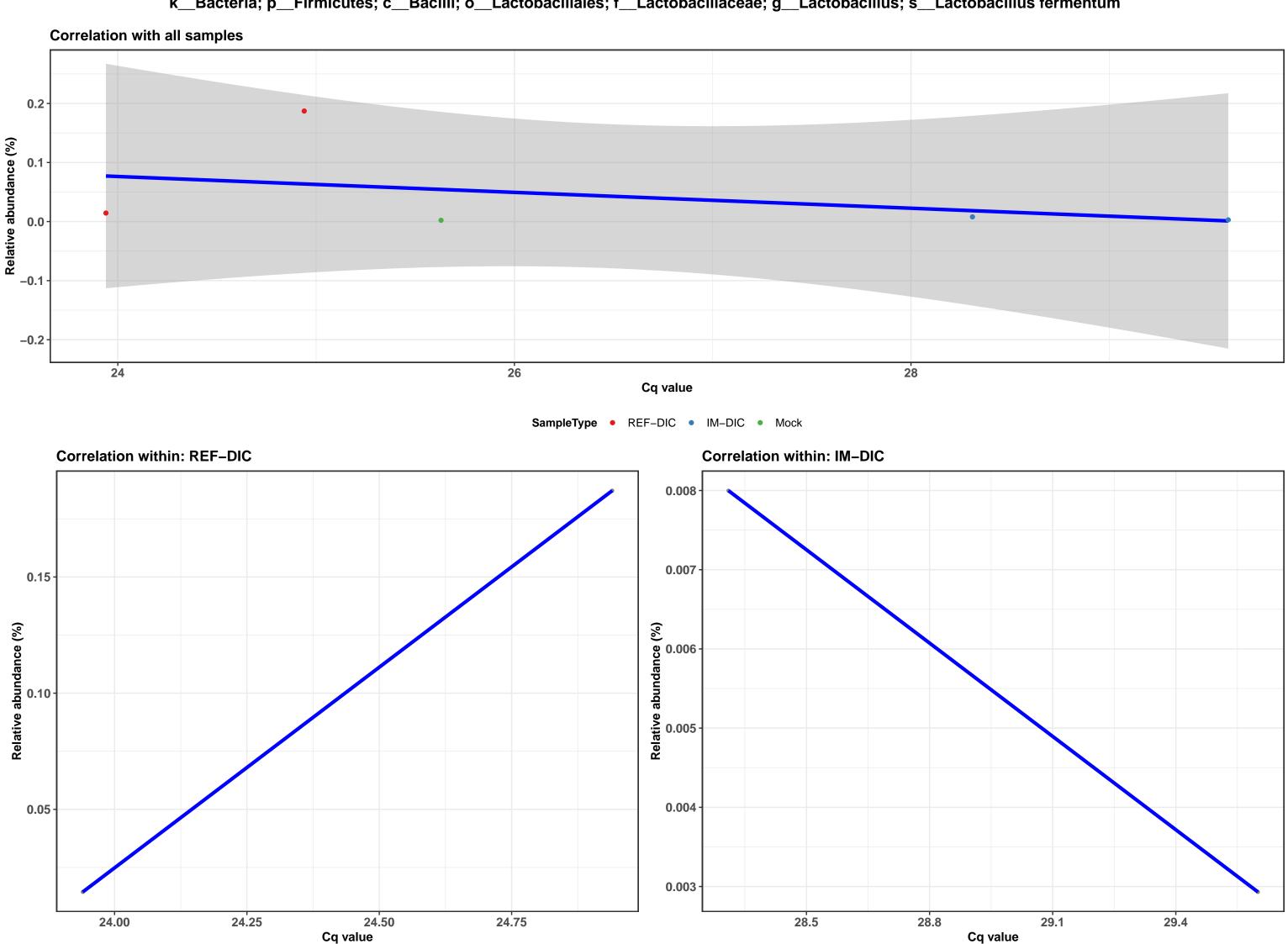


#### SampleType • REF-DIC • IM-DIC • Mock

## Correlation within: IM-DIC

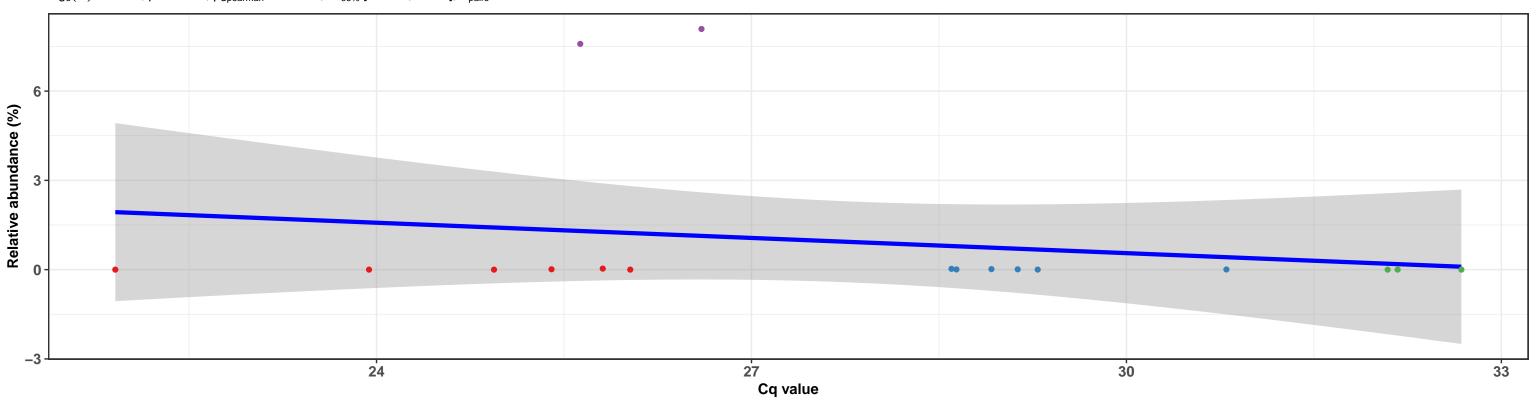


k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Lactobacillaceae; g\_\_Lactobacillus; s\_\_Lactobacillus fermentum



k\_Bacteria; p\_Firmicutes; c\_Bacilli; o\_Lactobacillales; f\_Lactobacillaceae; g\_Lactobacillus; s\_Lactobacillus fermentum

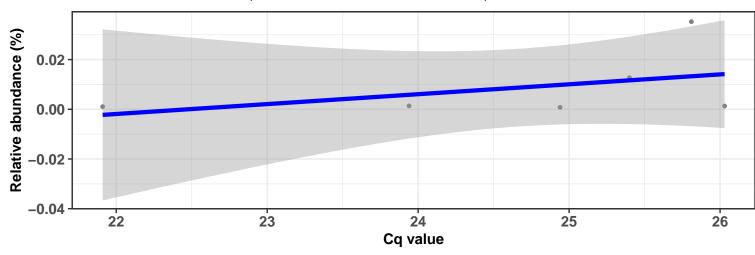
 $log_e(S) = 6.914, p = 0.368, \widehat{\rho}_{Spearman} = -0.233, Cl_{95\%} [-0.868, 0.274], n_{pairs} = 17$ 





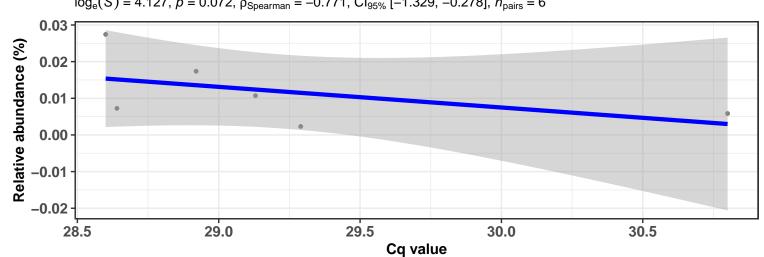
#### **Correlation within: REF-DIC**

 $log_e(S) = 2.996$ , p = 0.397,  $\hat{\rho}_{Spearman} = 0.429$ ,  $Cl_{95\%}$  [-0.280, 1.314],  $n_{pairs} = 6$ 

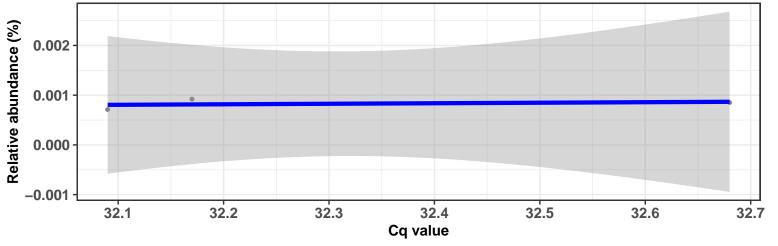


#### Correlation within: IM-DIC

 $log_e(S) = 4.127$ , p = 0.072,  $\widehat{\rho}_{Spearman} = -0.771$ ,  $Cl_{95\%}$  [-1.329, -0.278],  $n_{pairs} = 6$ 

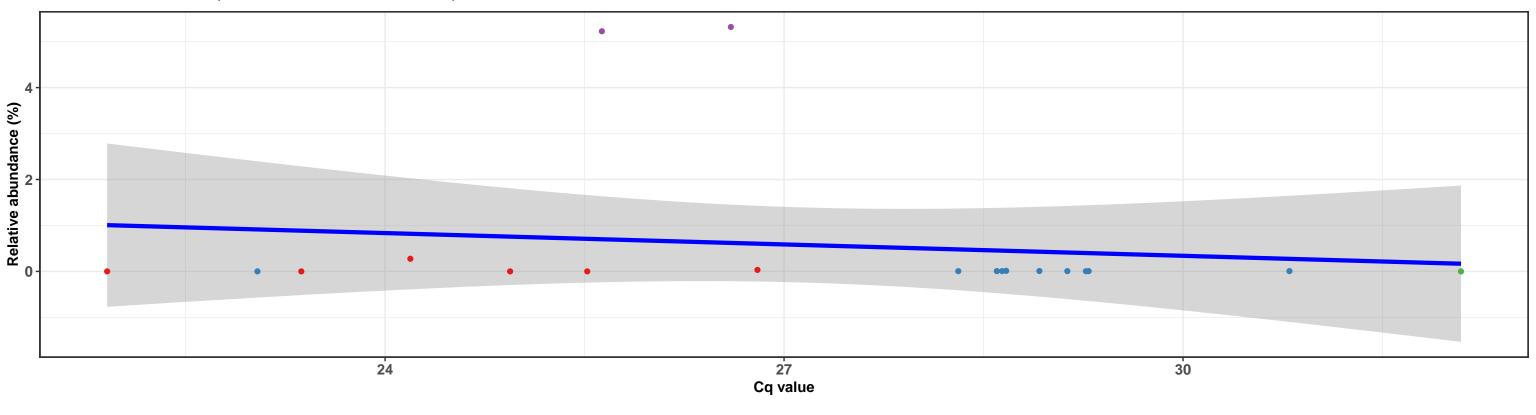


#### Correlation within: IM-DIM



k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Lactobacillaceae; g\_\_Lactobacillus; s\_\_Lactobacillus fermentum

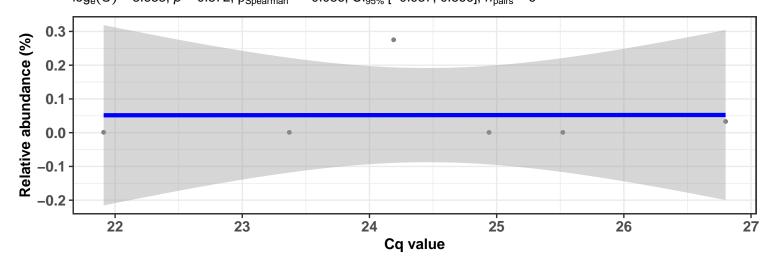
 $log_e(S) = 6.968, p = 0.781, \hat{\rho}_{Spearman} = 0.068, Cl_{95\%}$  [-0.455, 0.647],  $n_{pairs} = 19$ 





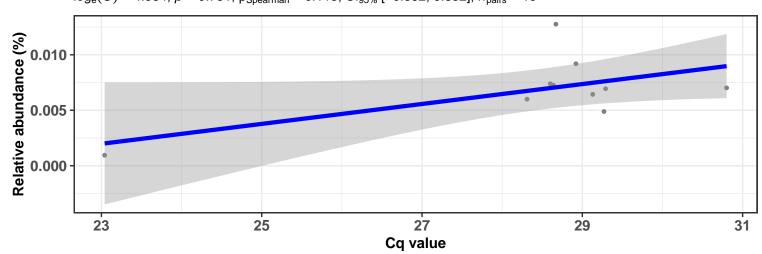
#### Correlation within: REF-DIC

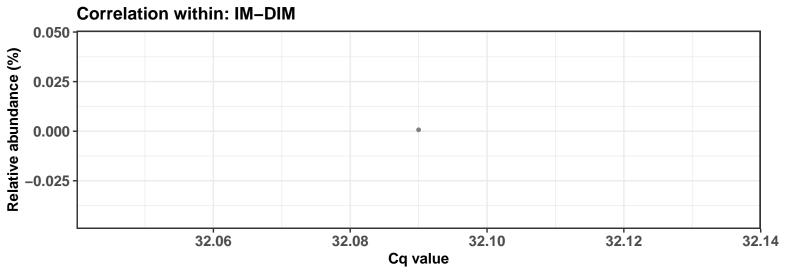
 $log_e(S) = 3.638$ , p = 0.872,  $\widehat{\rho}_{Spearman} = -0.086$ ,  $Cl_{95\%}$  [-0.937, 0.866],  $n_{pairs} = 6$ 



#### Correlation within: IM-DIC

 $log_e(S) = 4.984, p = 0.751, \hat{\rho}_{Spearman} = 0.115, Cl_{95\%} [-0.652, 0.832], n_{pairs} = 10$ 

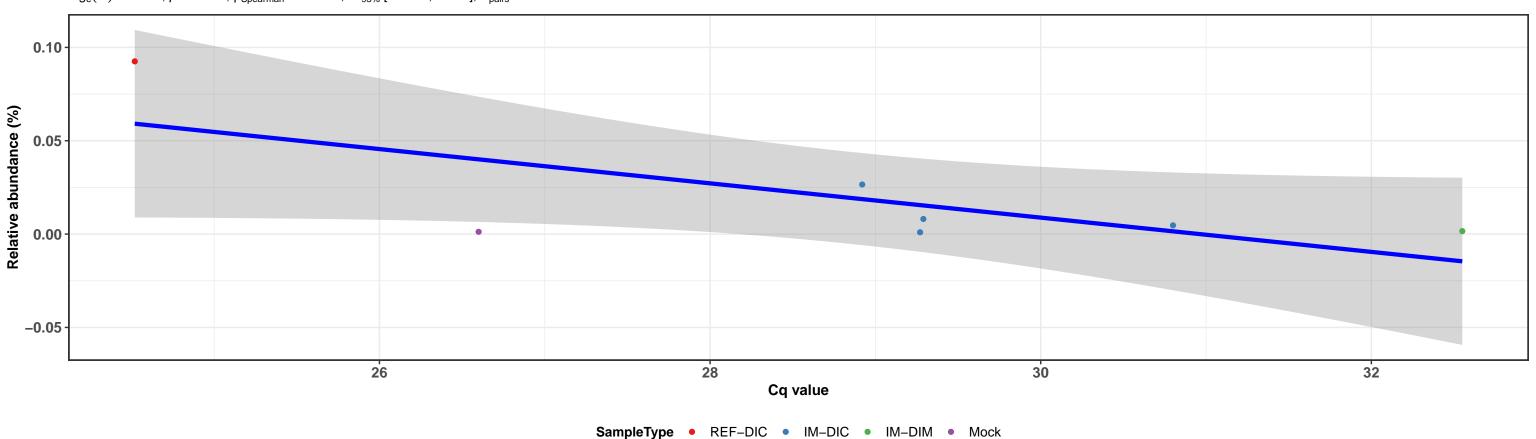


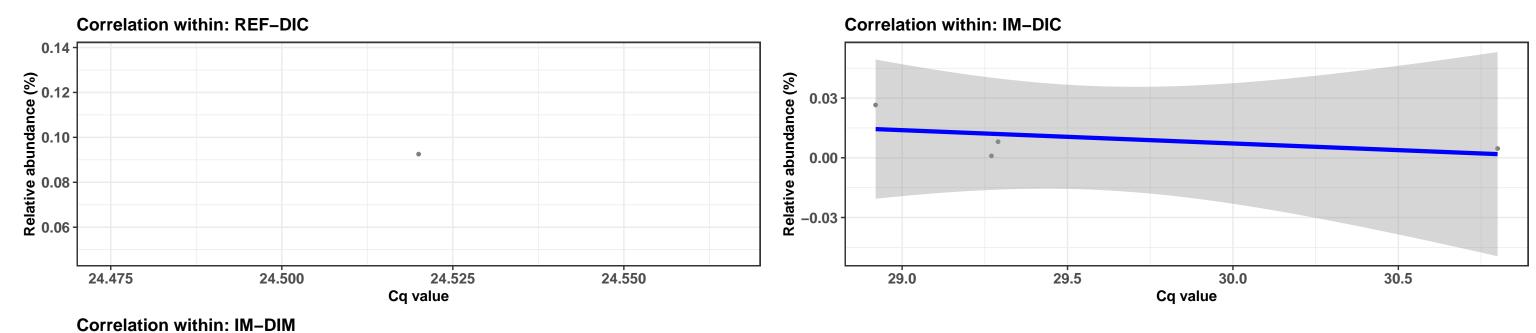


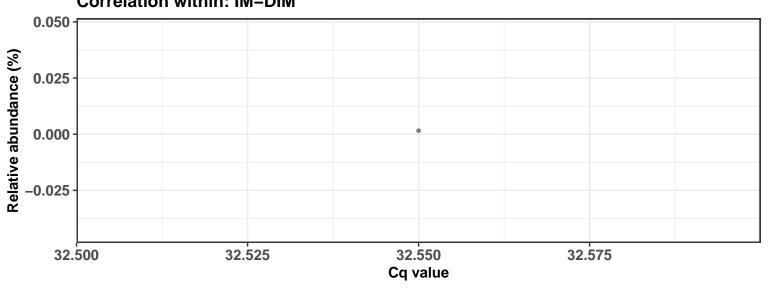
k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Lactobacillaceae; g\_\_Lactobacillus; s\_\_Lactobacillus fermentum



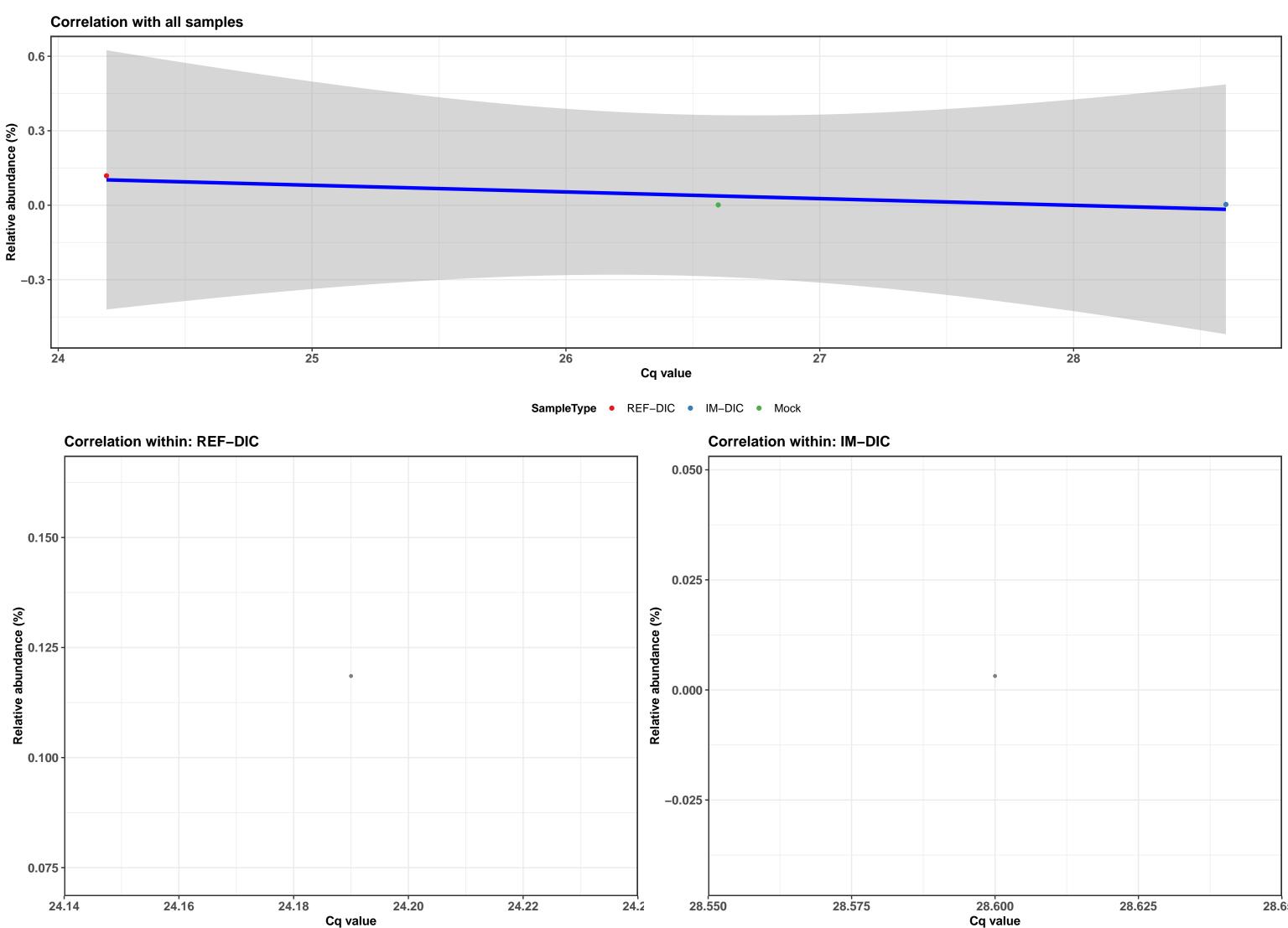
 $log_e(S) = 4.304$ , p = 0.482,  $\hat{\rho}_{Spearman} = -0.321$ ,  $Cl_{95\%}$  [-1.255, 0.536],  $n_{pairs} = 7$ 



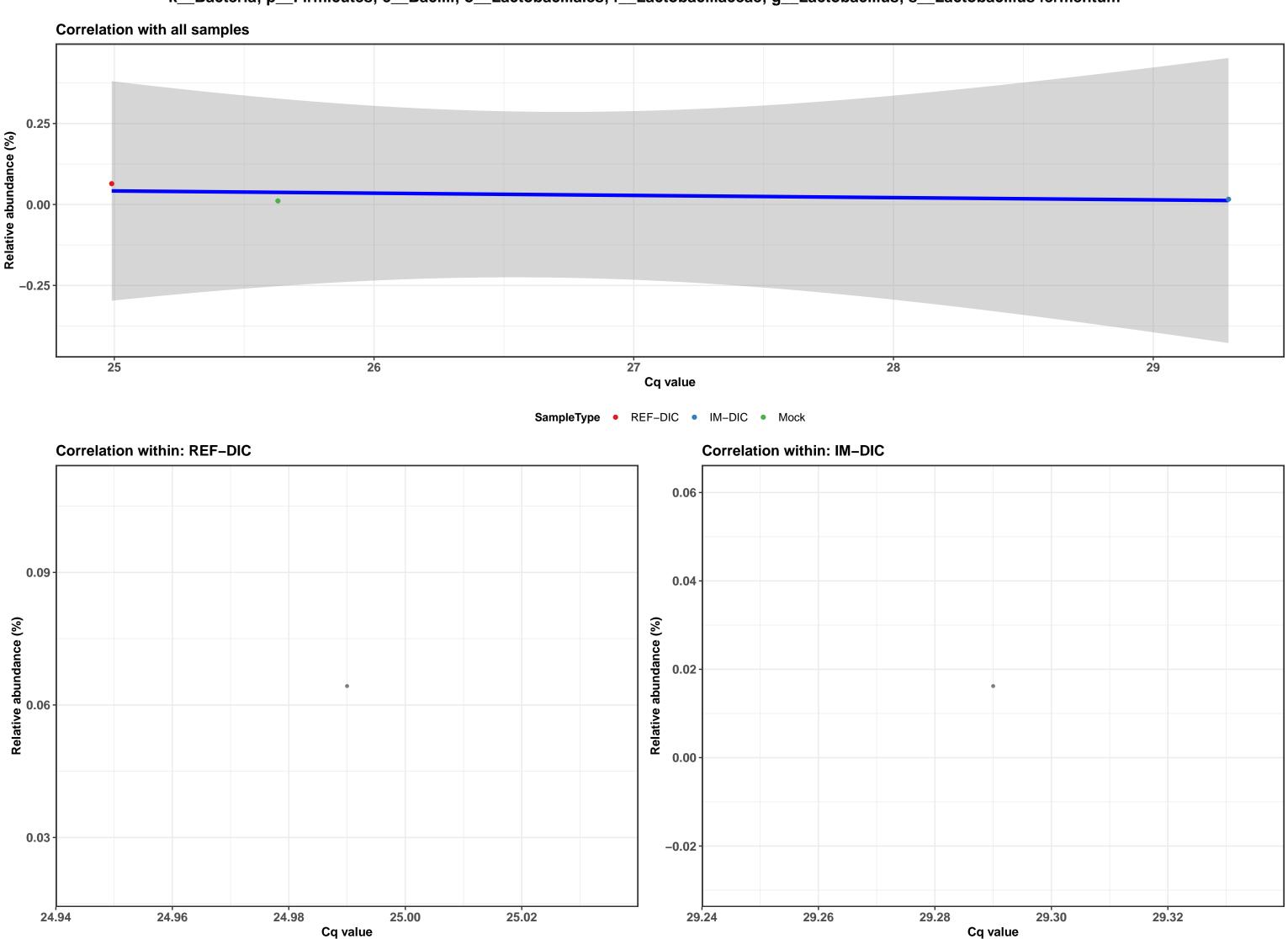




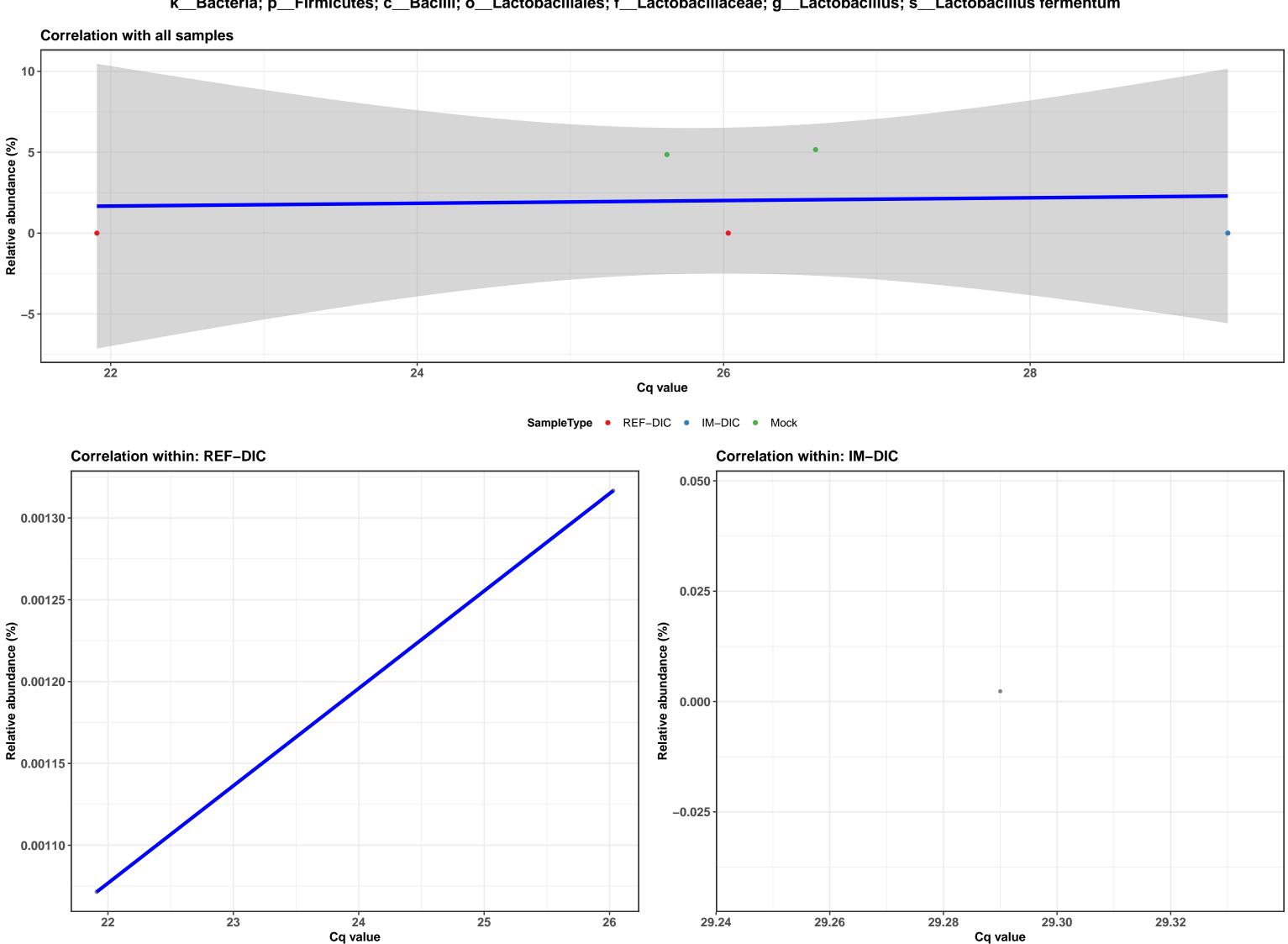
k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Lactobacillaceae; g\_\_Lactobacillus; s\_\_Lactobacillus fermentum



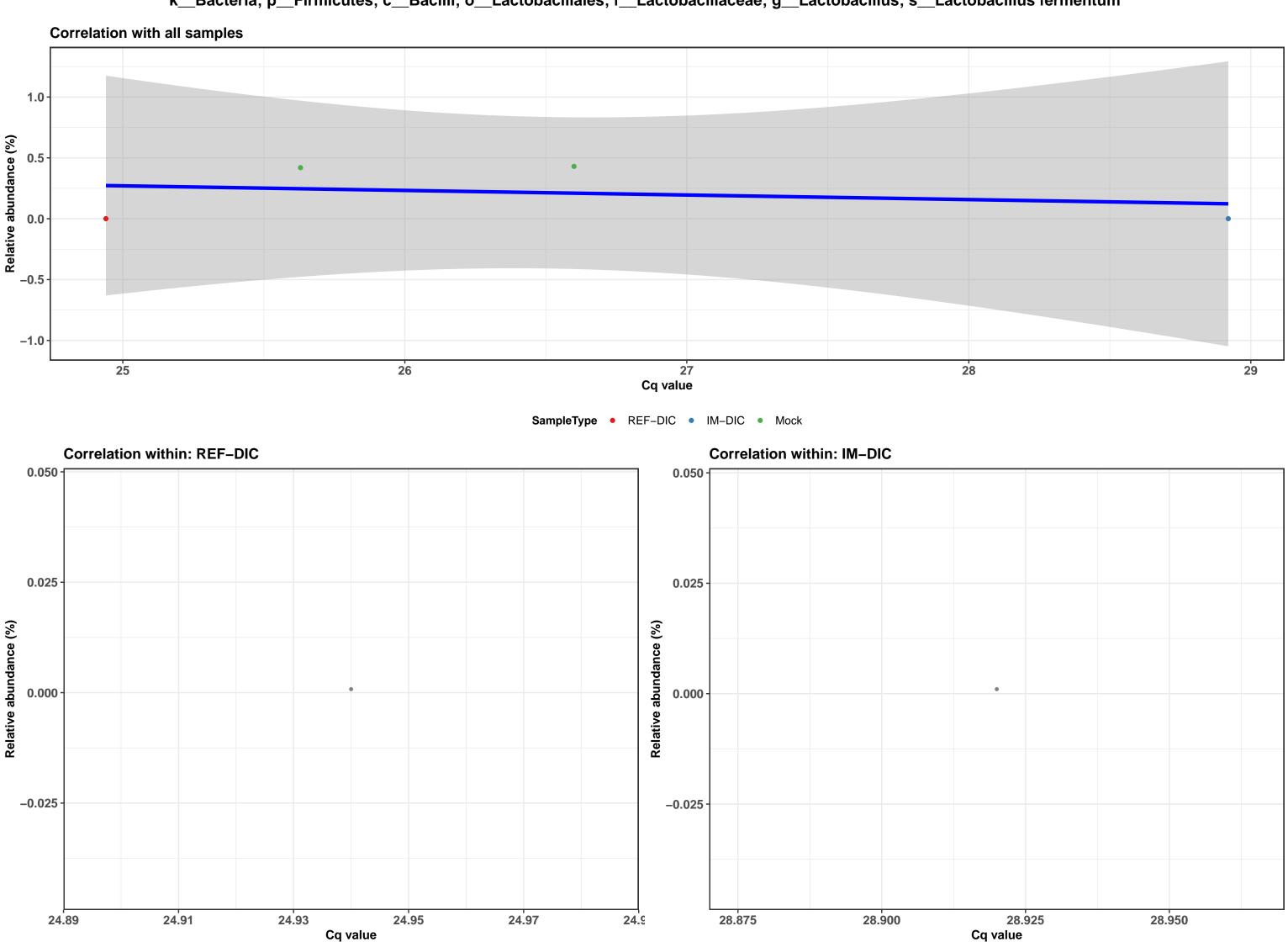
k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Lactobacillaceae; g\_\_Lactobacillus; s\_\_Lactobacillus fermentum



k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Lactobacillaceae; g\_\_Lactobacillus; s\_\_Lactobacillus fermentum

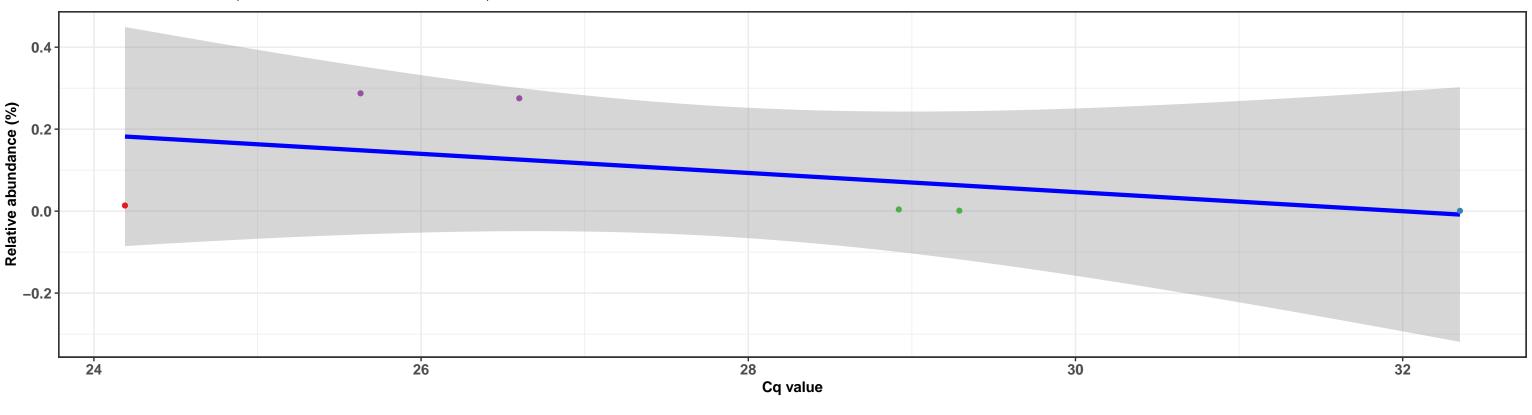


k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Lactobacillaceae; g\_\_Lactobacillus; s\_\_Lactobacillus fermentum

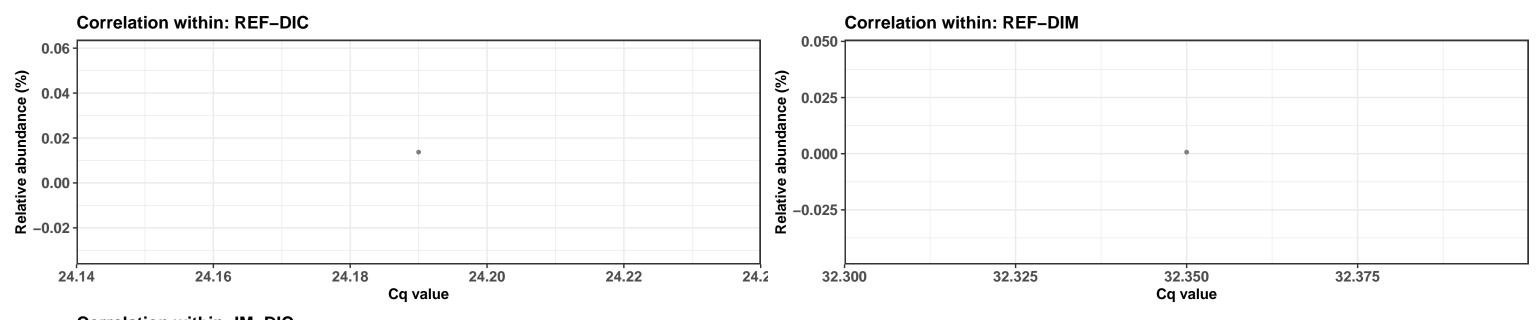


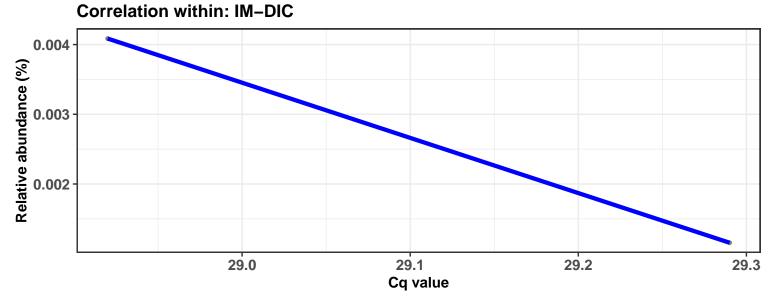
k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Lactobacillaceae; g\_\_Lactobacillus; s\_\_Lactobacillus fermentum

 $\log_{e}(S) = 4.159, p = 0.042, \hat{\rho}_{Spearman} = -0.829, Cl_{95\%} [-1.550, -0.229], n_{pairs} = 6$ 



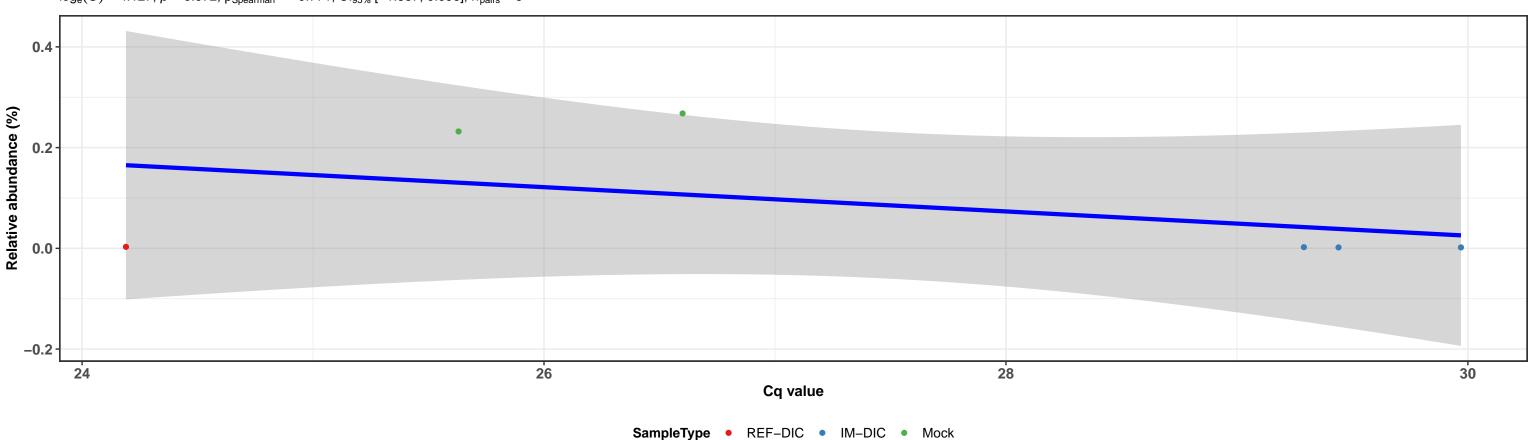


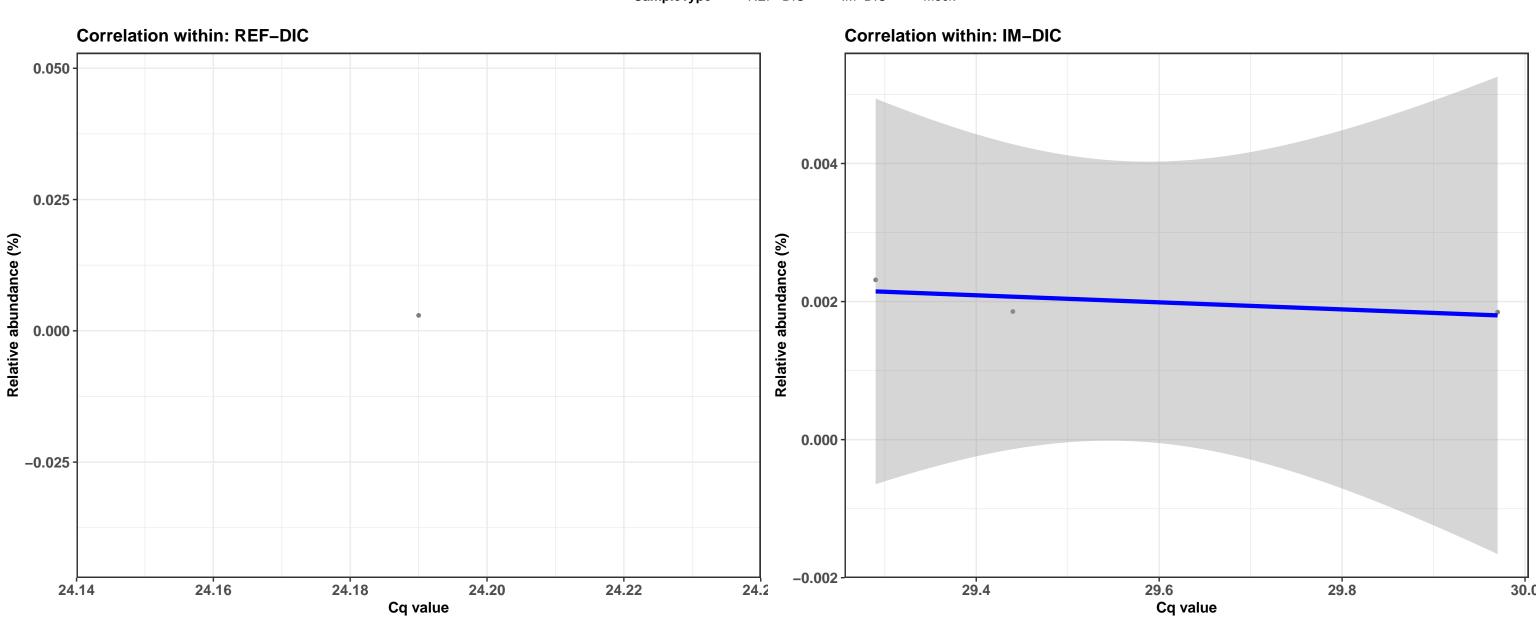




k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Lactobacillaceae; g\_\_Lactobacillus; s\_\_Lactobacillus fermentum

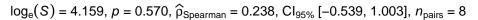
 $log_e(S) = 4.127, p = 0.072, \widehat{\rho}_{Spearman} = -0.771, Cl_{95\%} [-1.887, 0.096], n_{pairs} = 6$ 

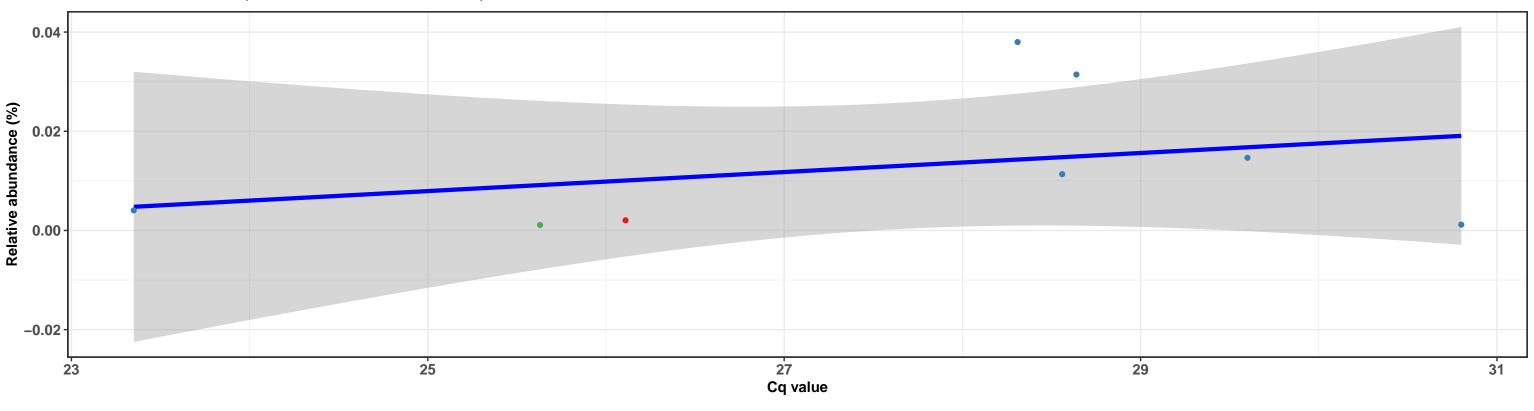


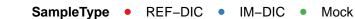


k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Lactobacillaceae; g\_\_Lactobacillus; s\_\_Lactobacillus fermentum





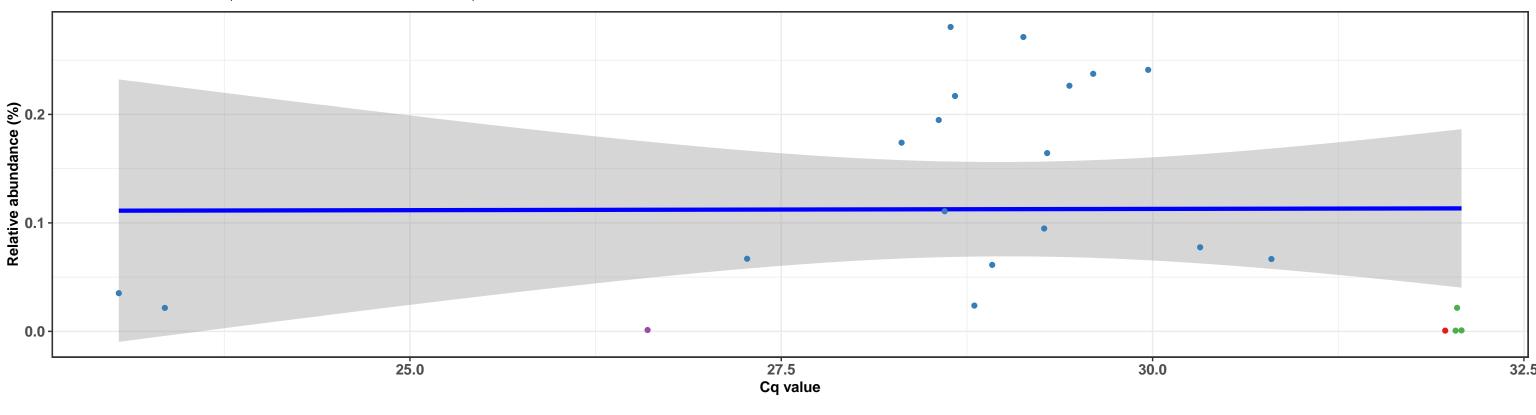




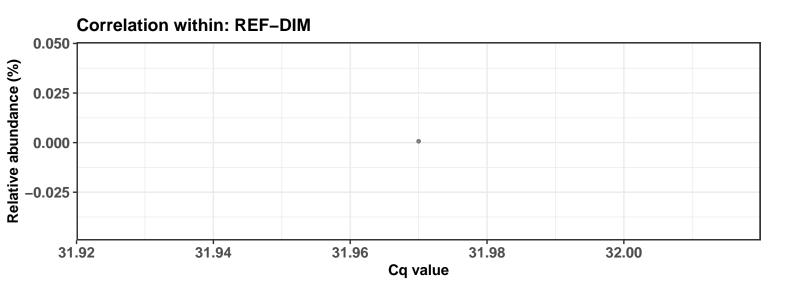
## Correlation within: IM-DIC $log_e(S) = 3.784$ , p = 0.623, $\widehat{\rho}_{Spearman} = -0.257$ , $Cl_{95\%}$ [-1.290, 0.867], $n_{pairs} = 6$ **Correlation within: REF-DIC** 0.06 0.050 0.04 0.025 Relative abundance (%) Relative abundance (%) 0.02 0.000 0.00 -0.025 -0.0227 31 26.10 25 26.08 26.14 23 29 26.06 26.12 Cq value Cq value

k\_\_Bacteria; p\_\_Bacteroidetes; c\_\_Bacteroidia; o\_\_Flavobacteriales; f\_\_Flavobacteriaceae; g\_\_Flavobacterium; NA

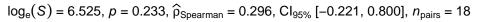
 $log_e(S) = 7.768$ , p = 0.444,  $\hat{\rho}_{Spearman} = -0.168$ ,  $Cl_{95\%}$  [-0.604, 0.287],  $n_{pairs} = 23$ 

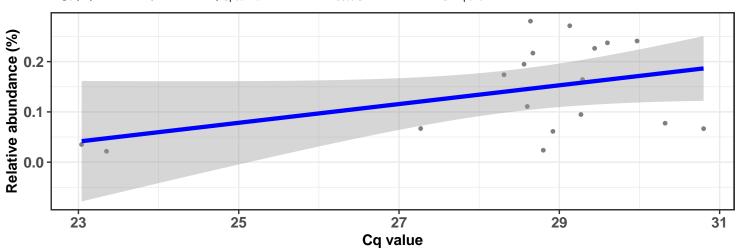


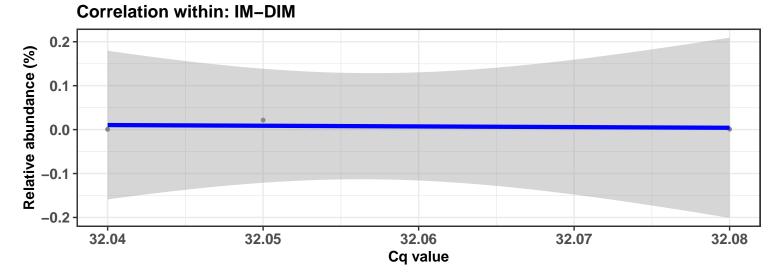




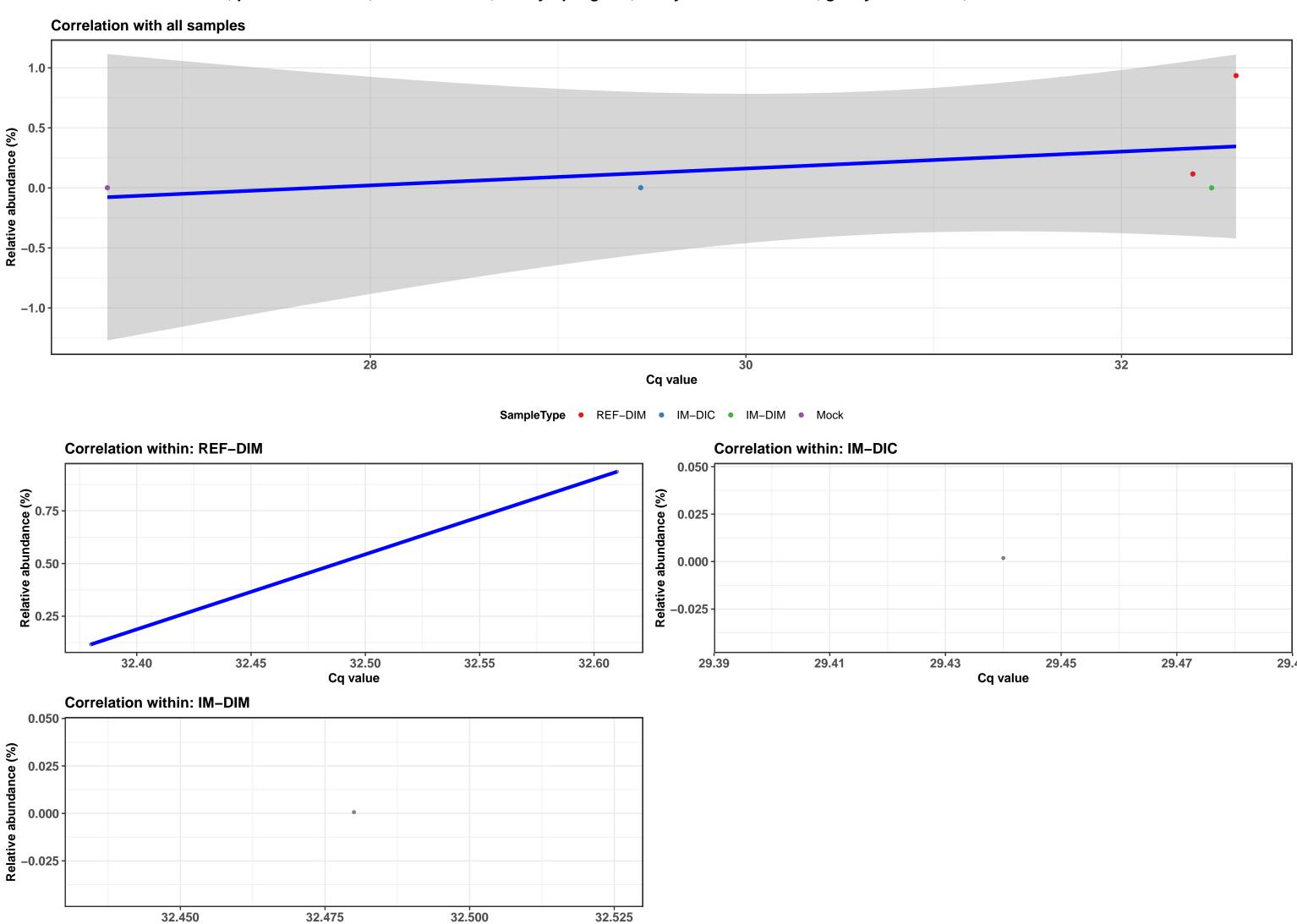
#### Correlation within: IM-DIC







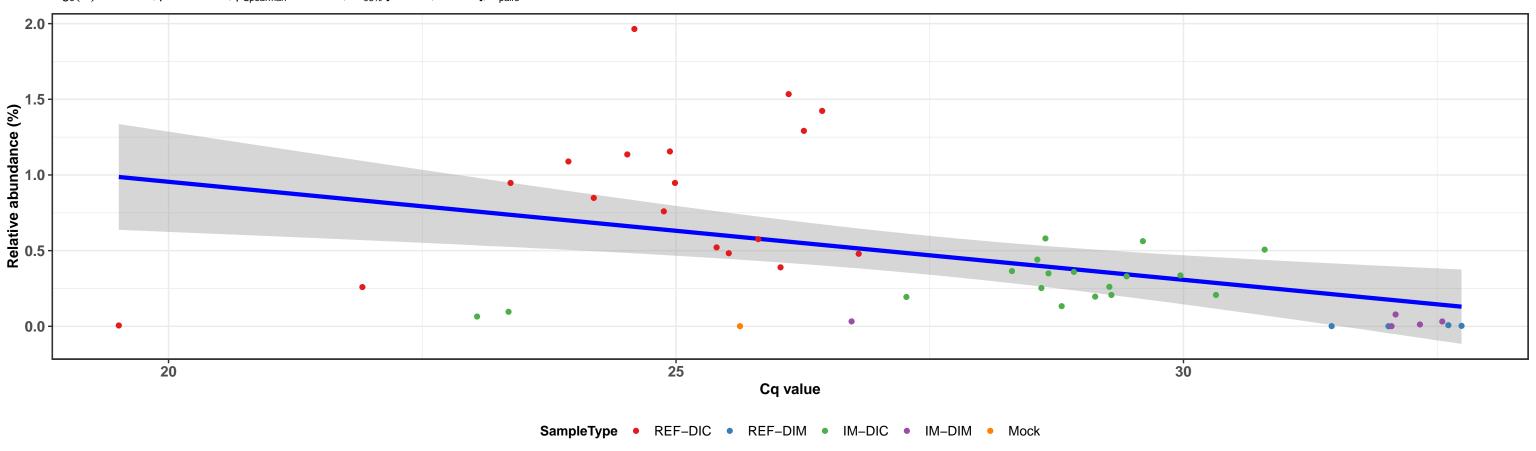
k\_\_Bacteria; p\_\_Bacteroidetes; c\_\_Bacteroidia; o\_\_Cytophagales; f\_\_Hymenobacteraceae; g\_\_Hymenobacter; s\_\_uncultured bacterium



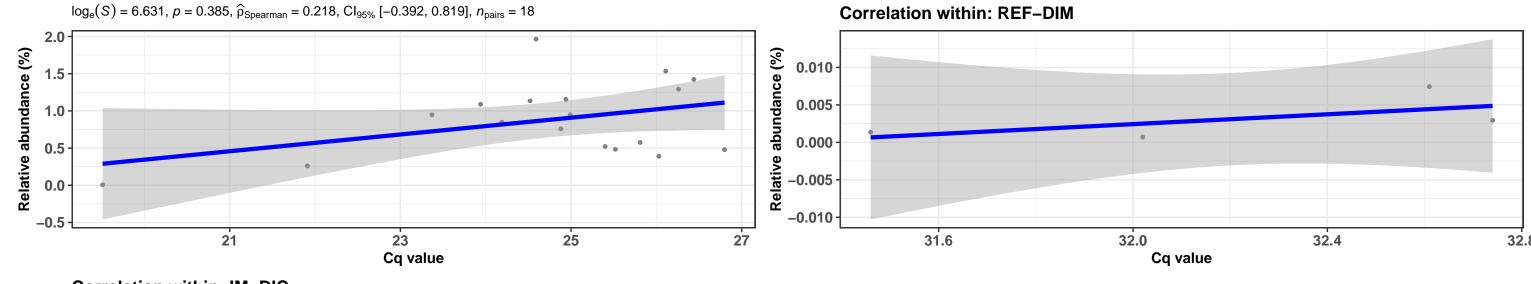
Cq value

k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Leuconostocaceae; g\_\_Weissella; s\_\_uncultured bacterium

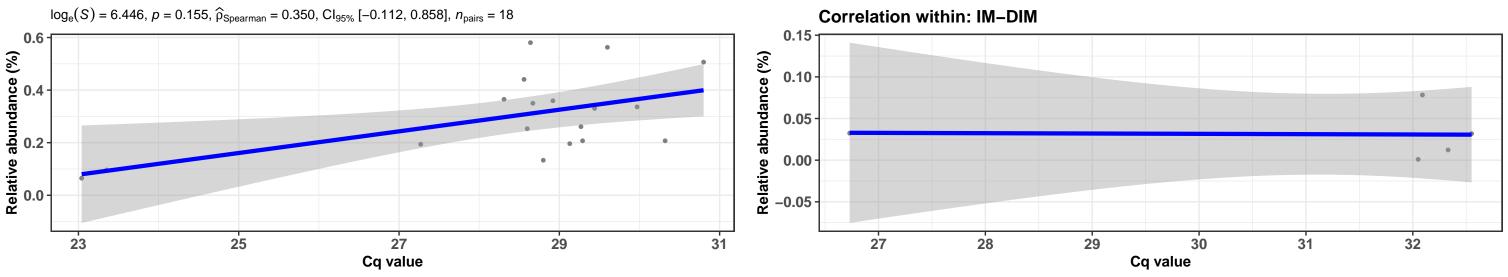
 $log_e(S) = 10.095, p = < 0.001, \hat{\rho}_{Spearman} = -0.494, Cl_{95\%}$  [-0.815, -0.177],  $n_{pairs} = 46$ 



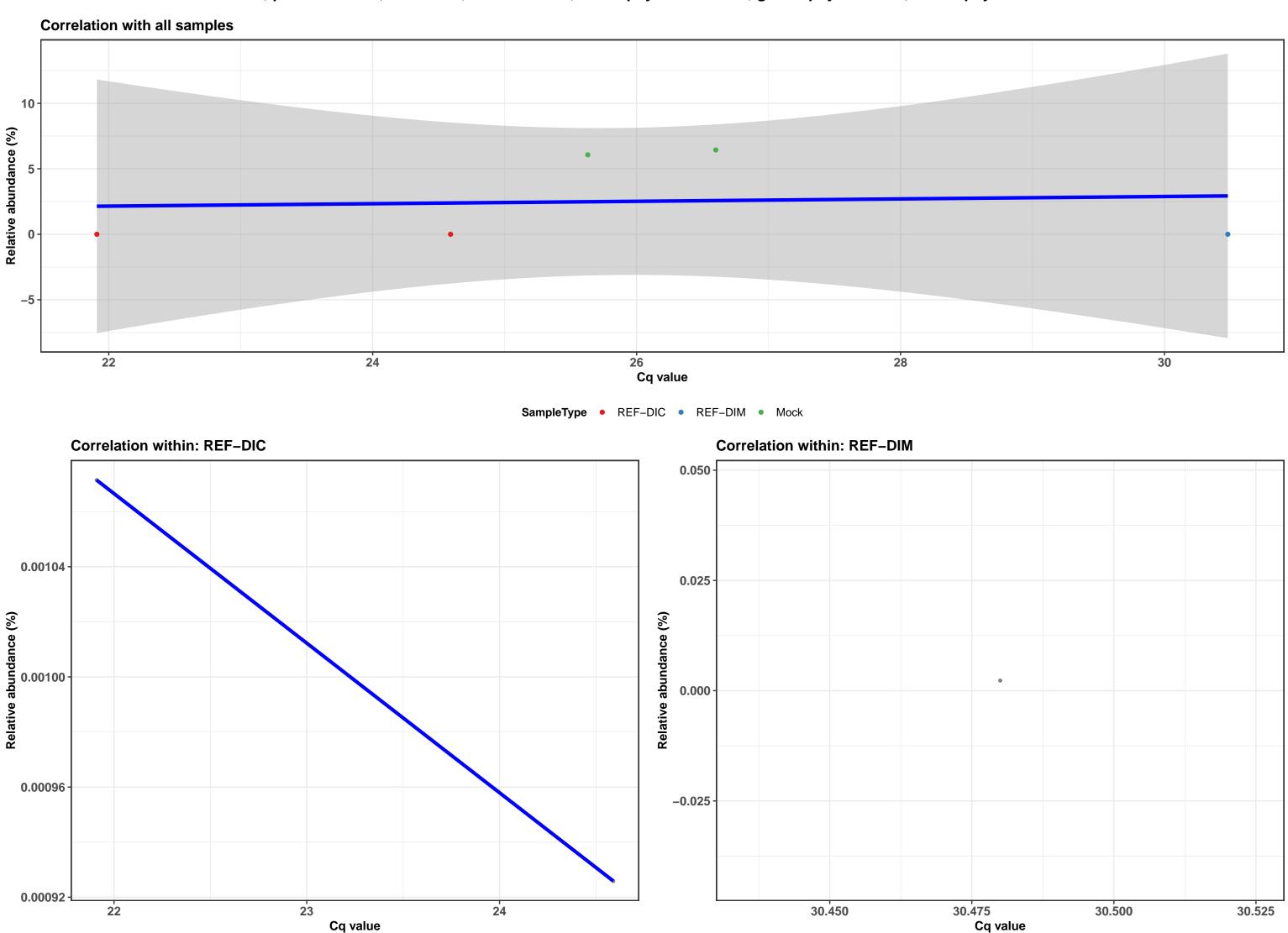
#### Correlation within: REF-DIC



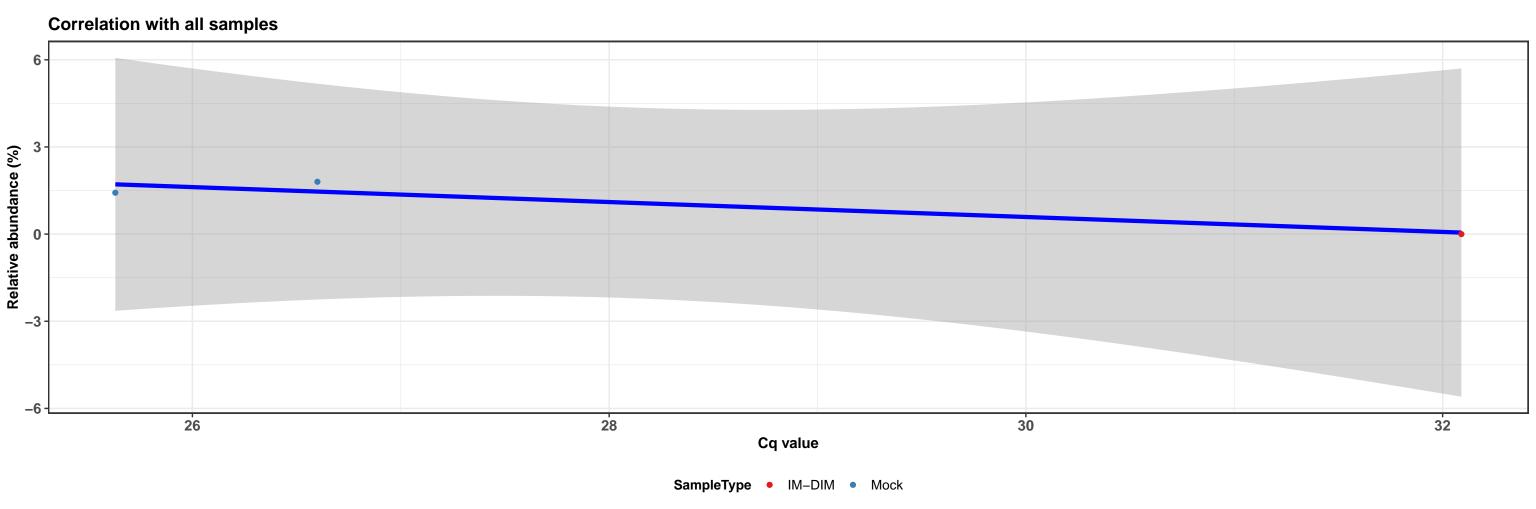
### Correlation within: IM-DIC

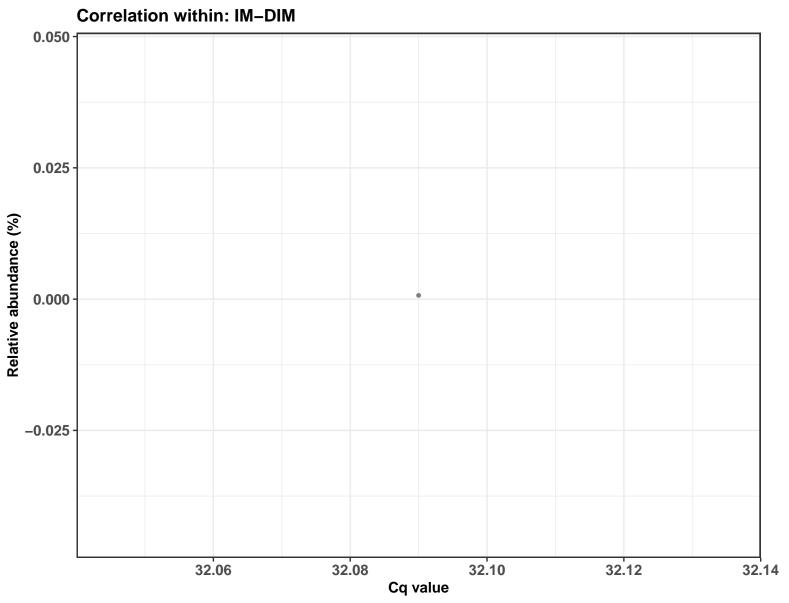


k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Bacillales; f\_\_Staphylococcaceae; g\_\_Staphylococcus; s\_\_Staphylococcus aureus

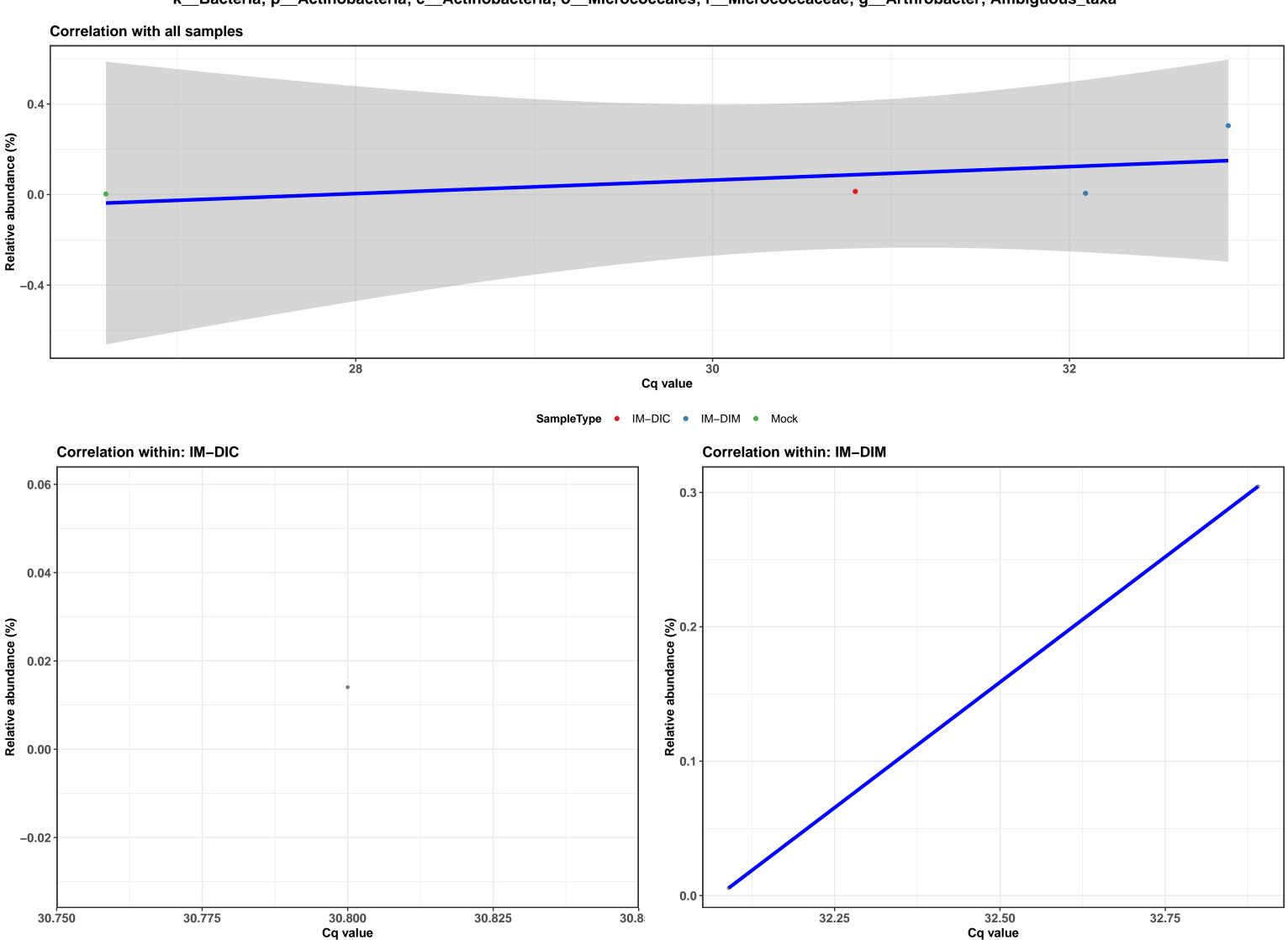


k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Bacillales; f\_\_Staphylococcaceae; g\_\_Staphylococcus; s\_\_Staphylococcus aureus

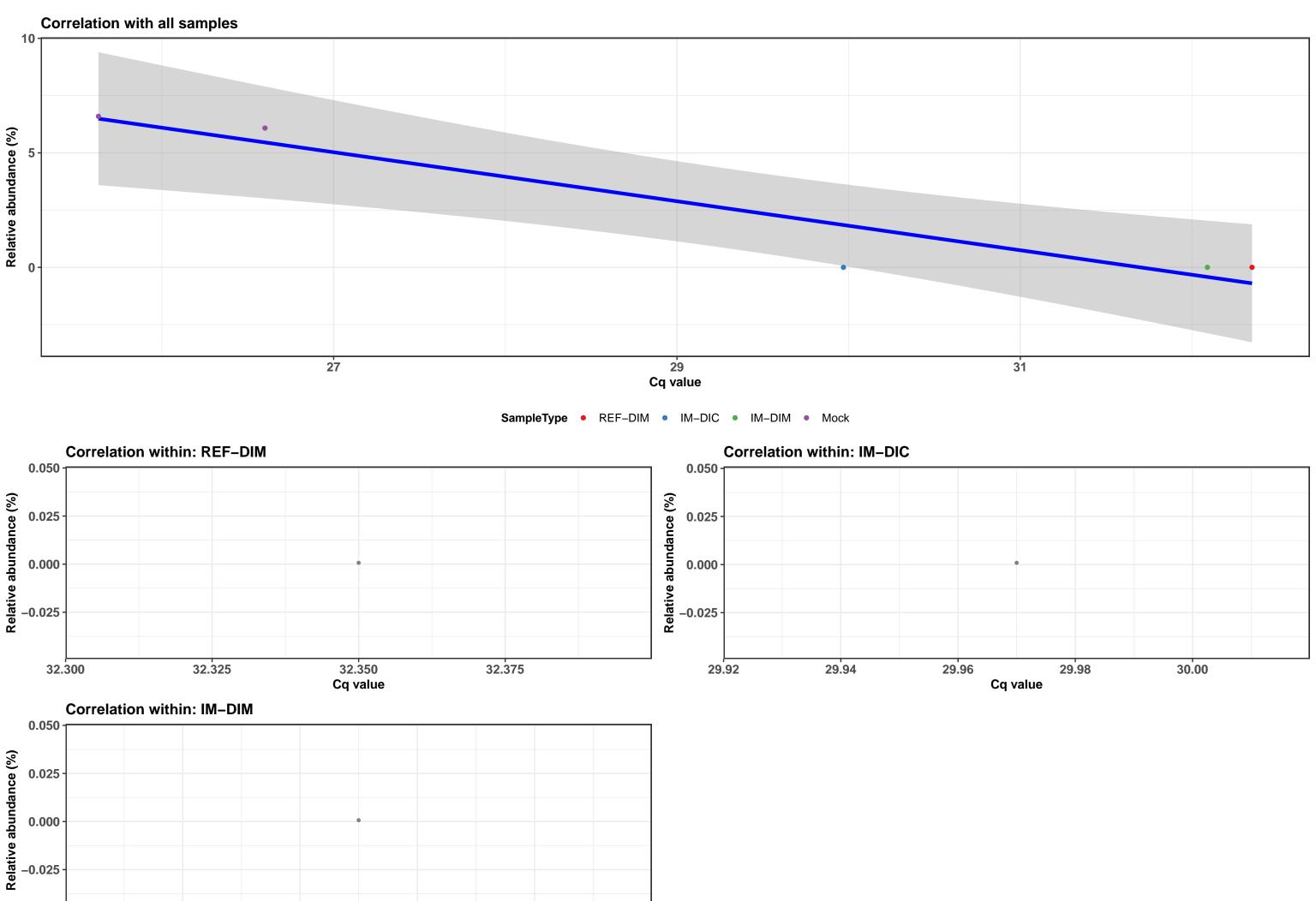




k\_\_Bacteria; p\_\_Actinobacteria; c\_\_Actinobacteria; o\_\_Micrococcales; f\_\_Micrococcaceae; g\_\_Arthrobacter; Ambiguous\_taxa



k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Lactobacillaceae; g\_\_Lactobacillus; s\_\_Lactobacillus fermentum



32.14

32.08

32.10

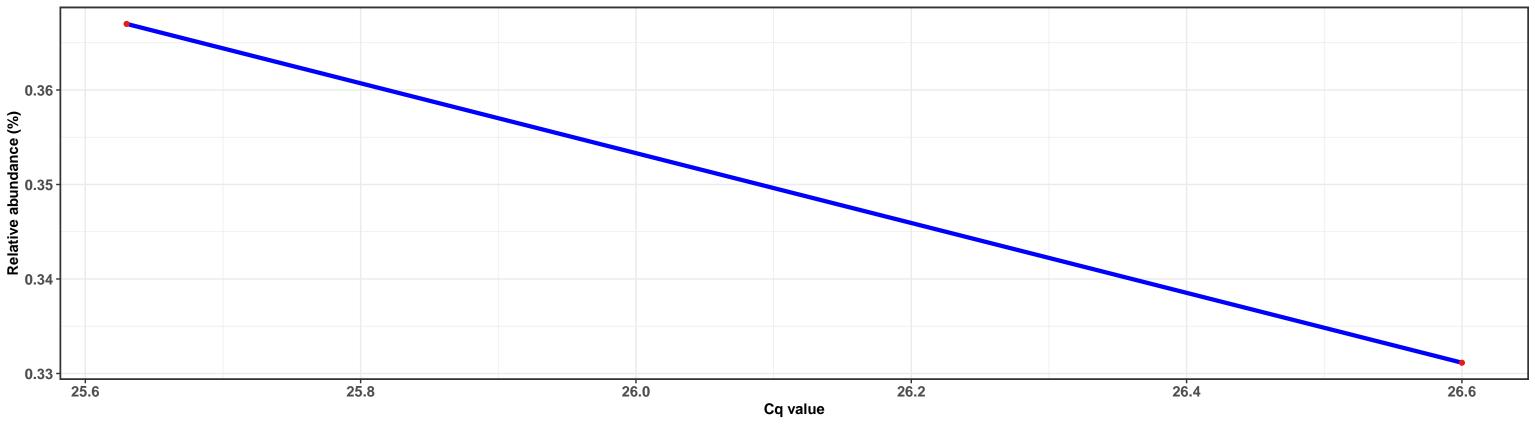
Cq value

32.12

32.06

k\_\_Bacteria; p\_\_Firmicutes; c\_\_Bacilli; o\_\_Lactobacillales; f\_\_Lactobacillaceae; g\_\_Lactobacillus; s\_\_Lactobacillus fermentum





SampleType • Mock

# **Correlation within:**

