

1/19

Fig. 1

**A**

$$\text{Quantity Cys added} = C_{\text{cys}} * F + C_{\text{cys2}} * V$$

F= feed volume added [L]

$C_{\text{cys}}$  = feed concentration (Cys) [g/L]

V= bioreactor volume [L]

$C_{\text{cys2}}$  = medium concentration (Cys) [g/L]

**B**

$$\text{Quantity RC produced} = C_{\text{RC}} * V_{\text{F}}$$

RC = recombinant polypeptide

$V_{\text{F}}$  = final bioreactor volume [L]

$C_{\text{RC}}$  = final RC titer [g/L]

**C**

$$\text{Ratio Cys/RC\%} = \text{Quantity Cys added} * 100 / \text{Quantity RC produced}$$

Fig. 2

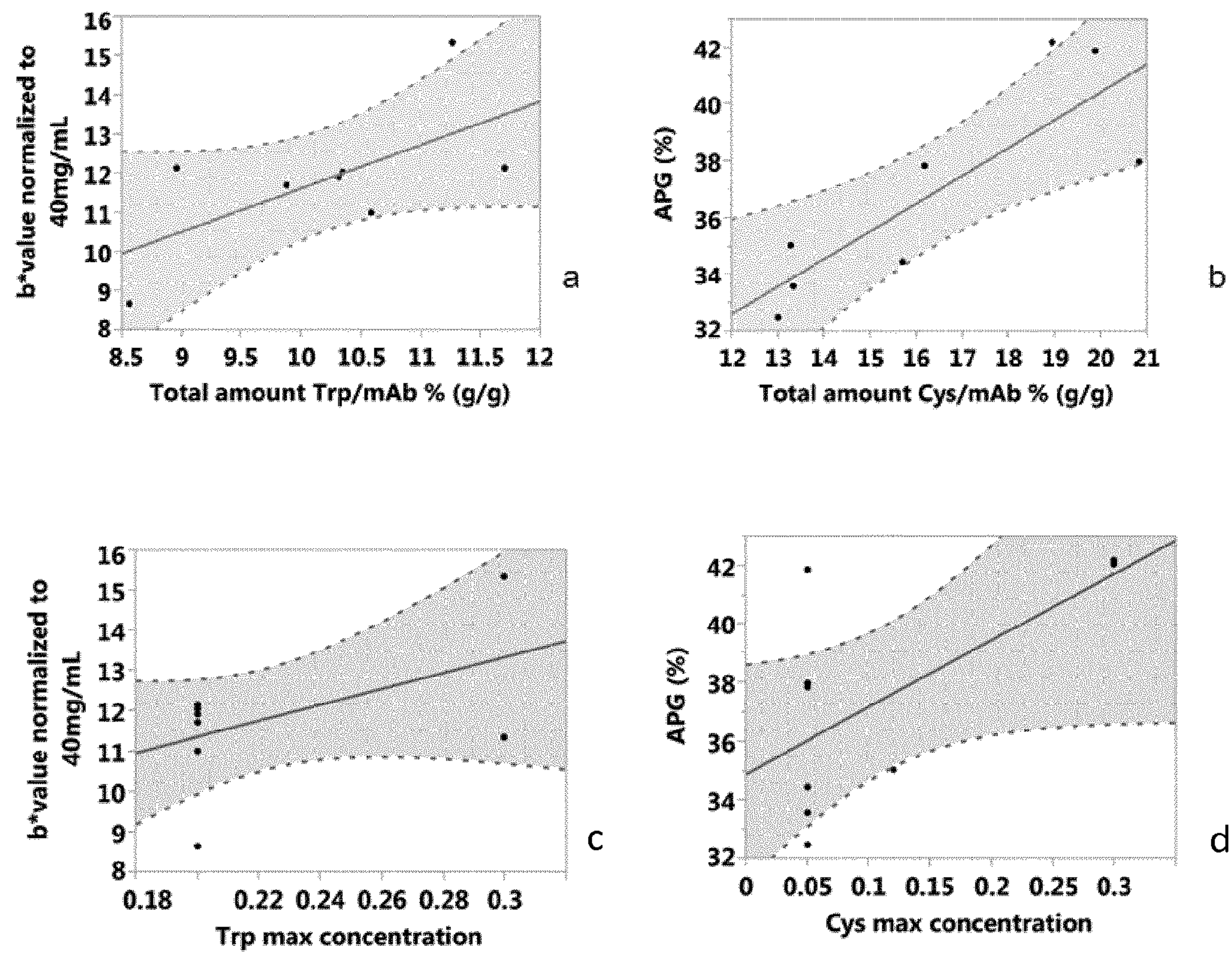
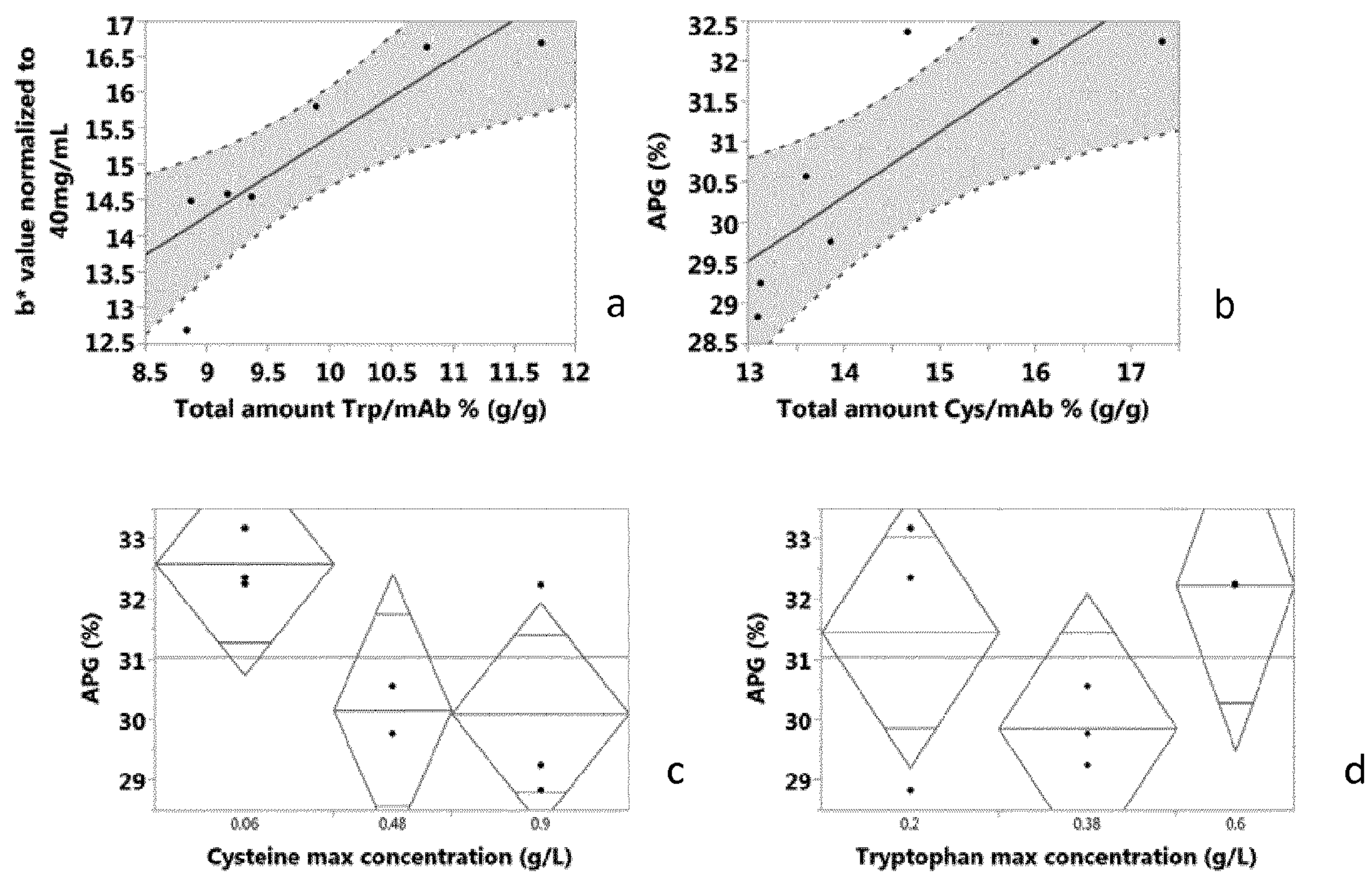
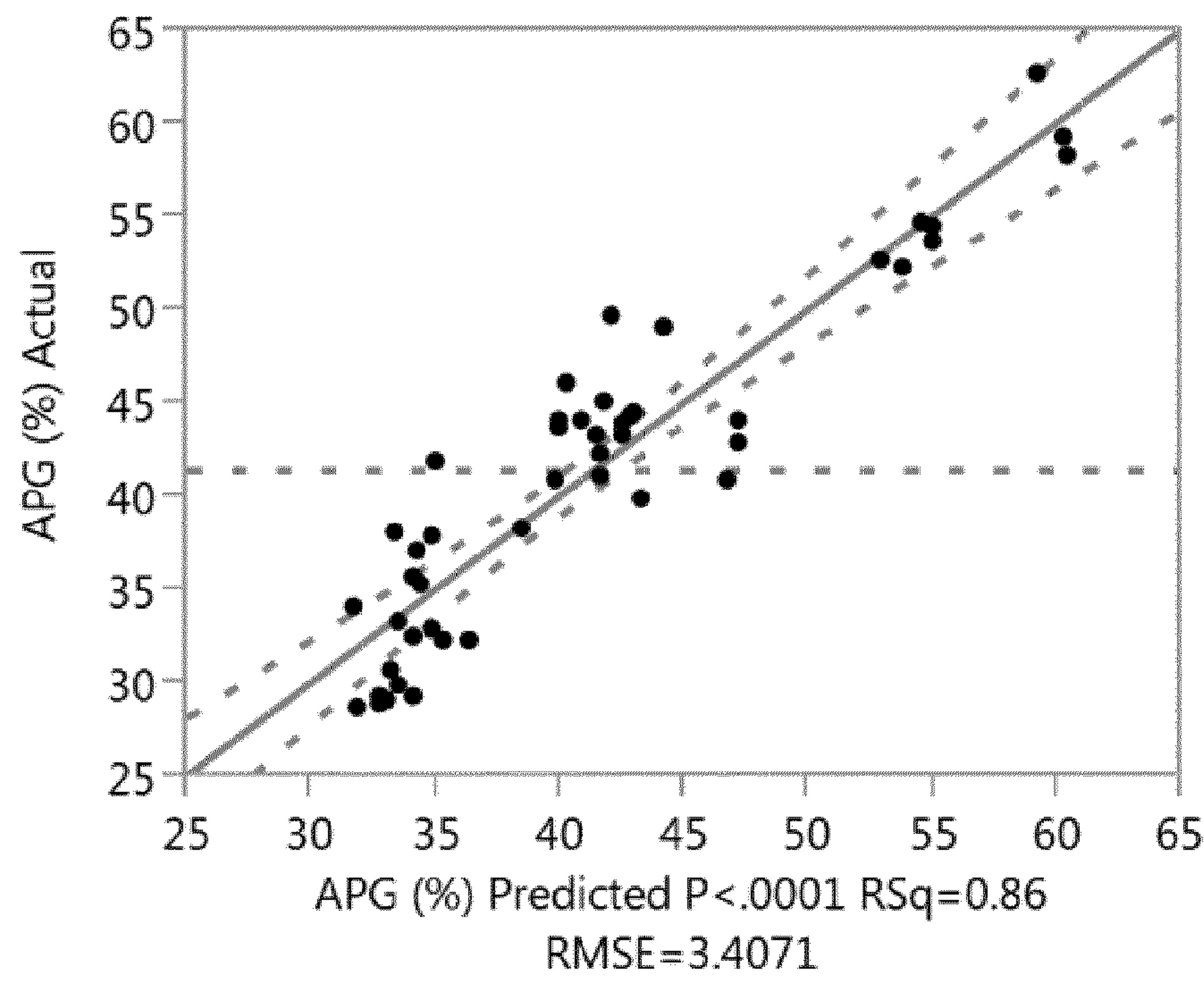


Fig. 3



4/19

Fig. 4



5/19

Fig. 5

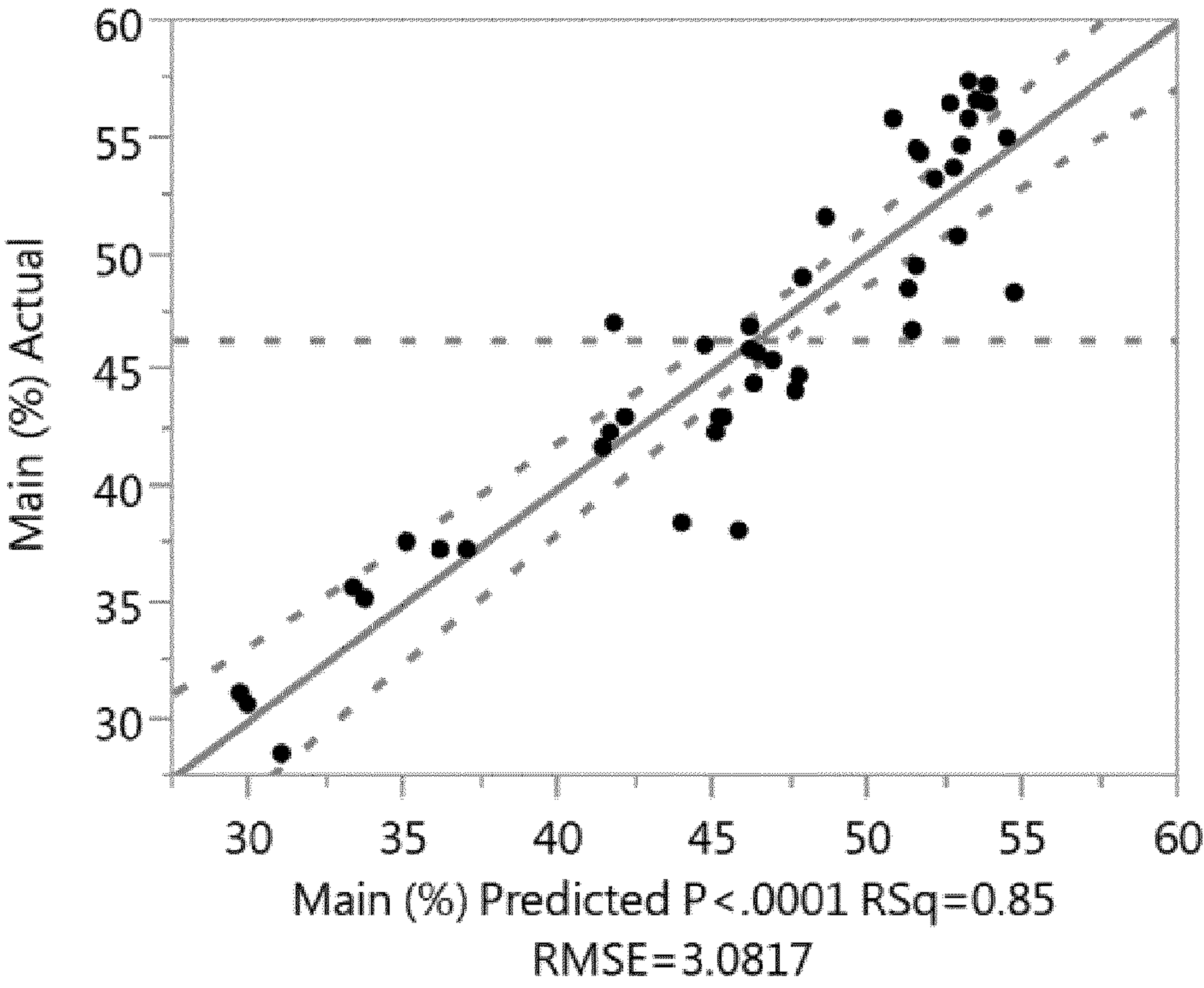
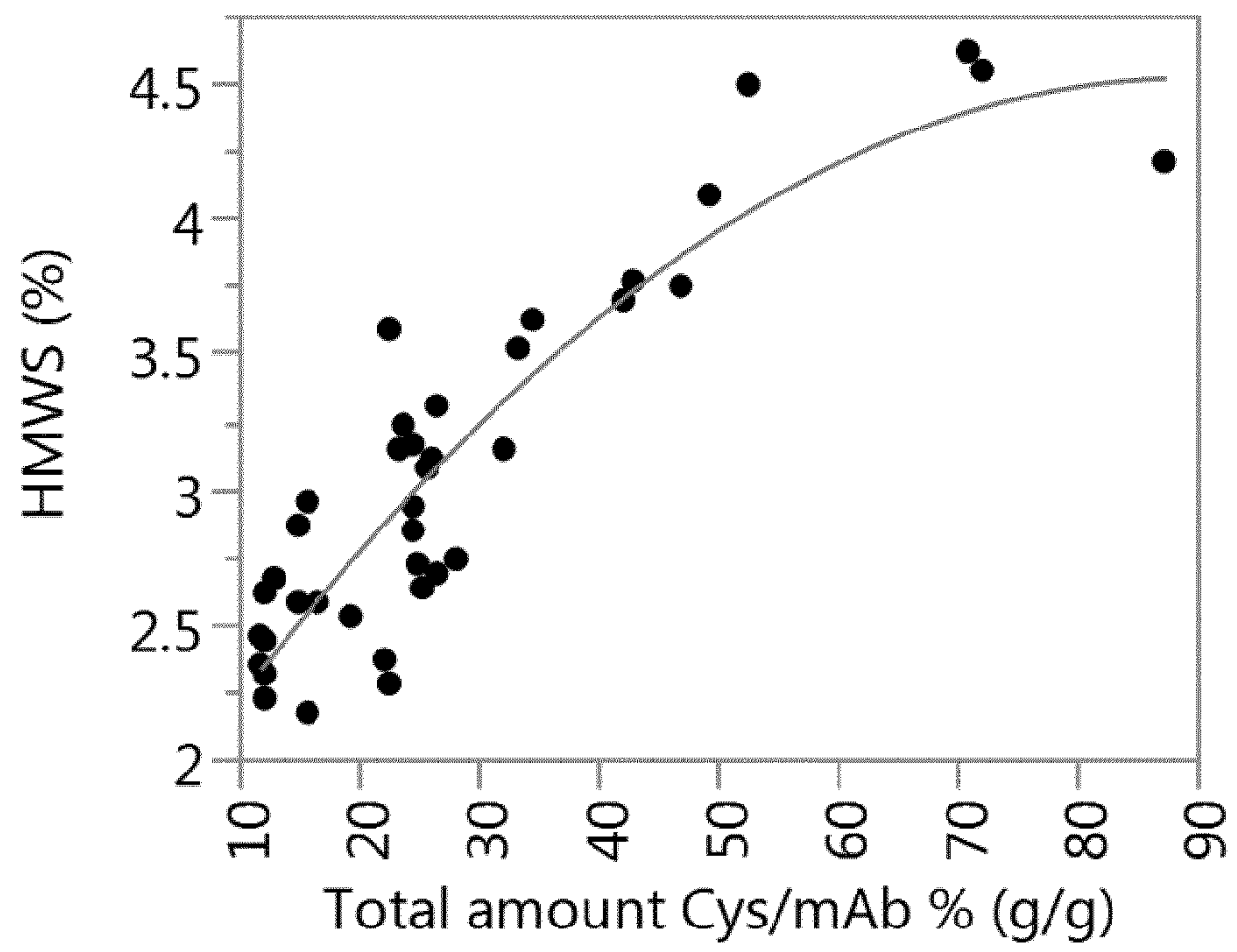


Fig. 6



7/19

Fig. 7

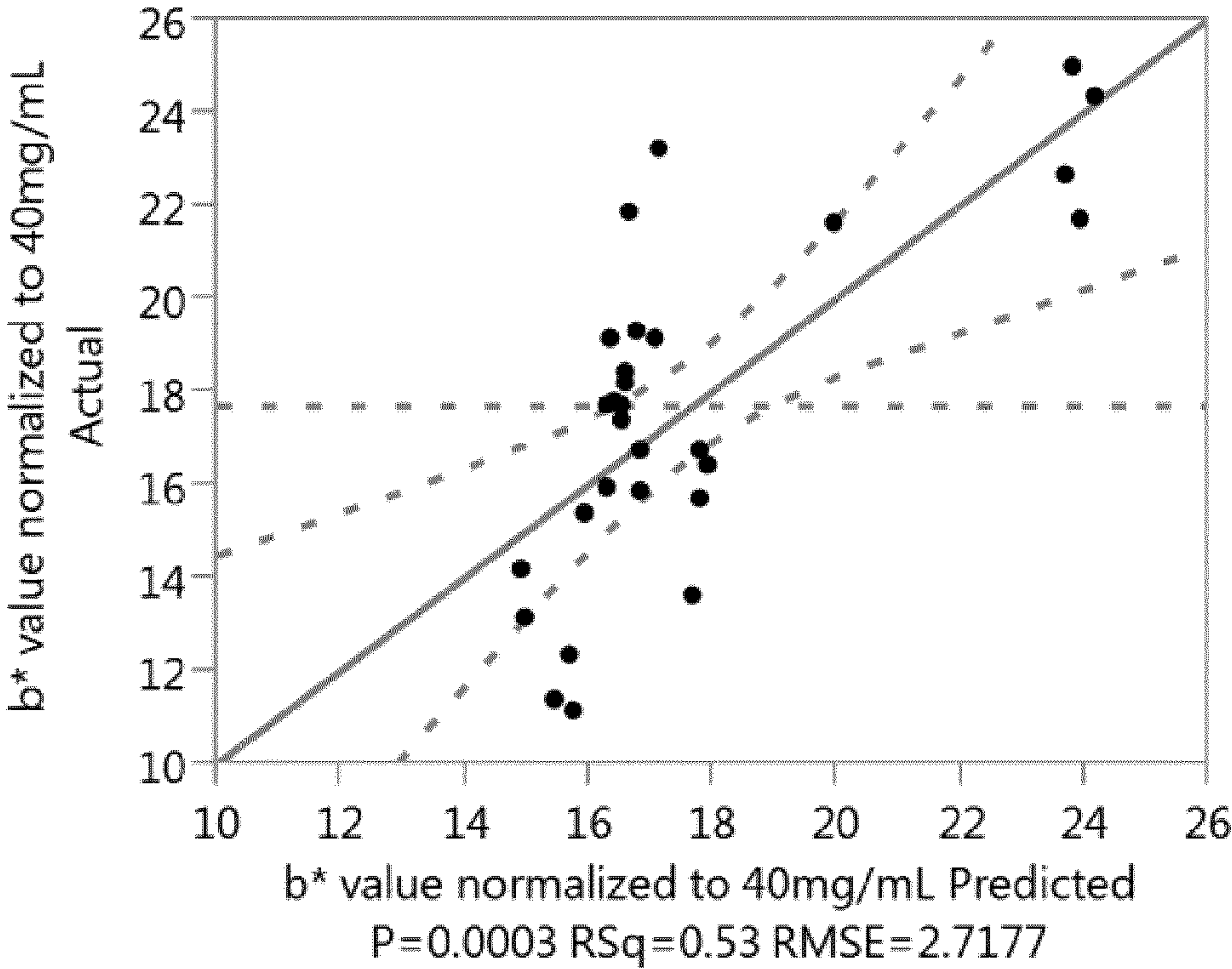
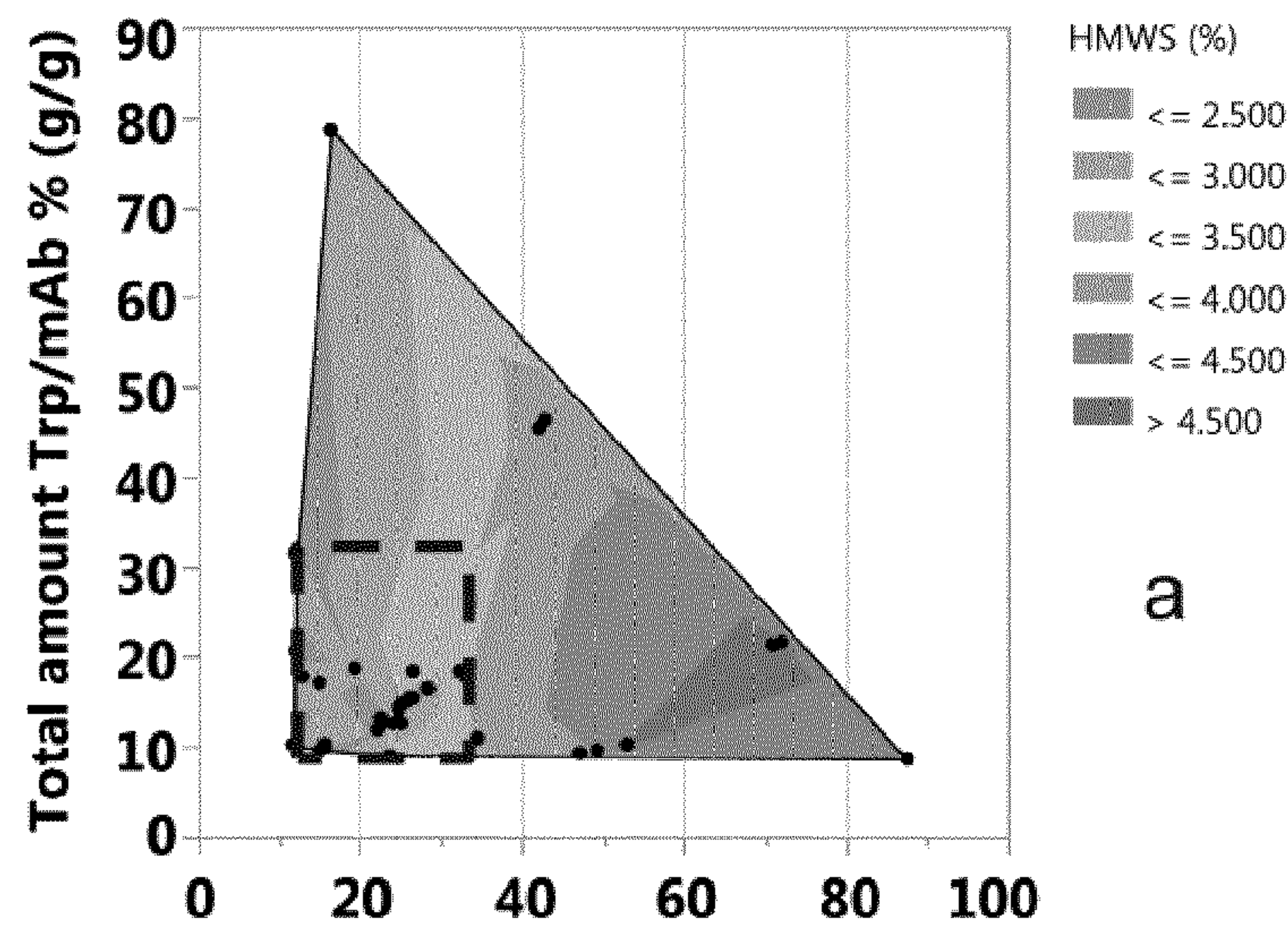
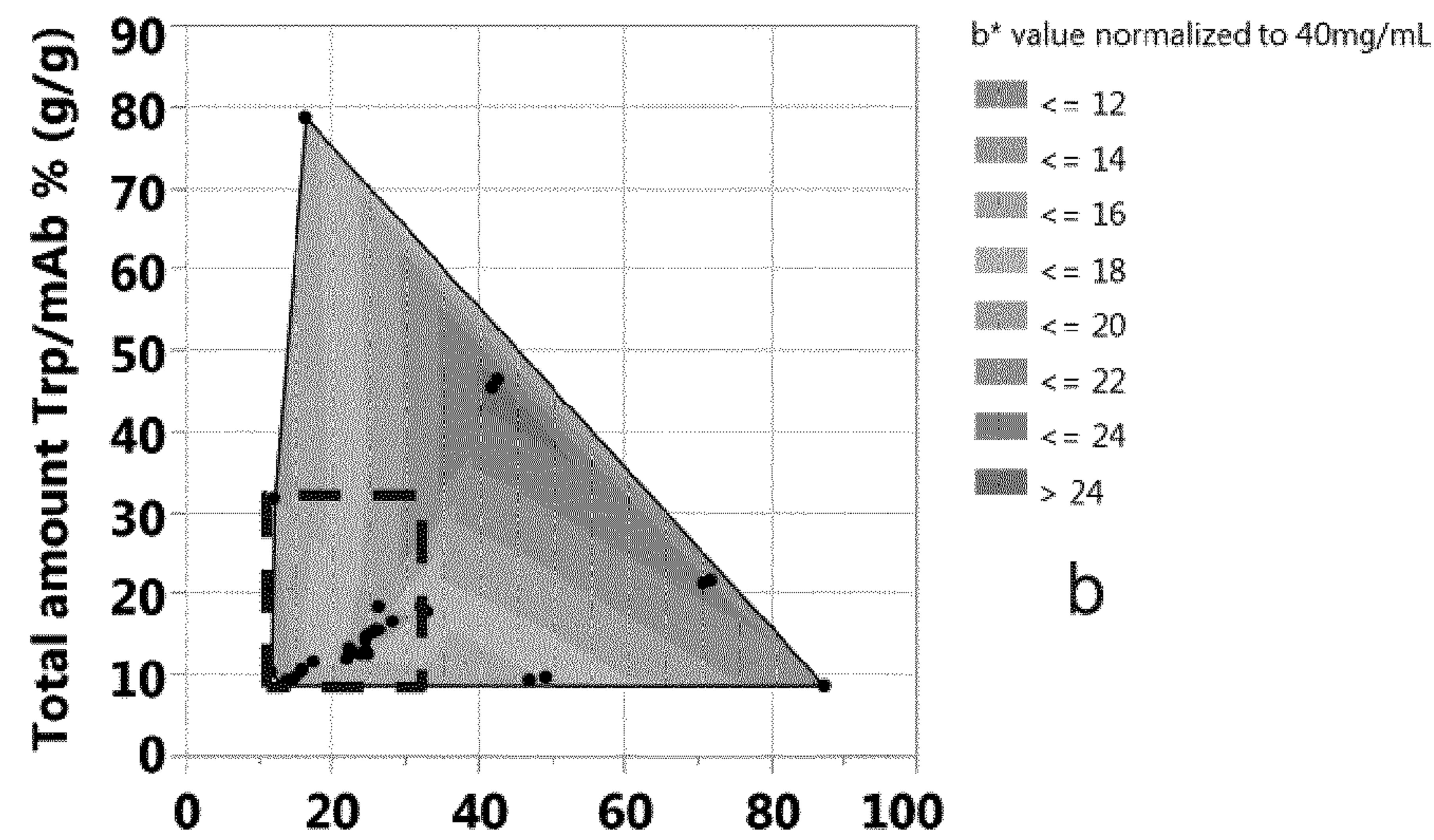
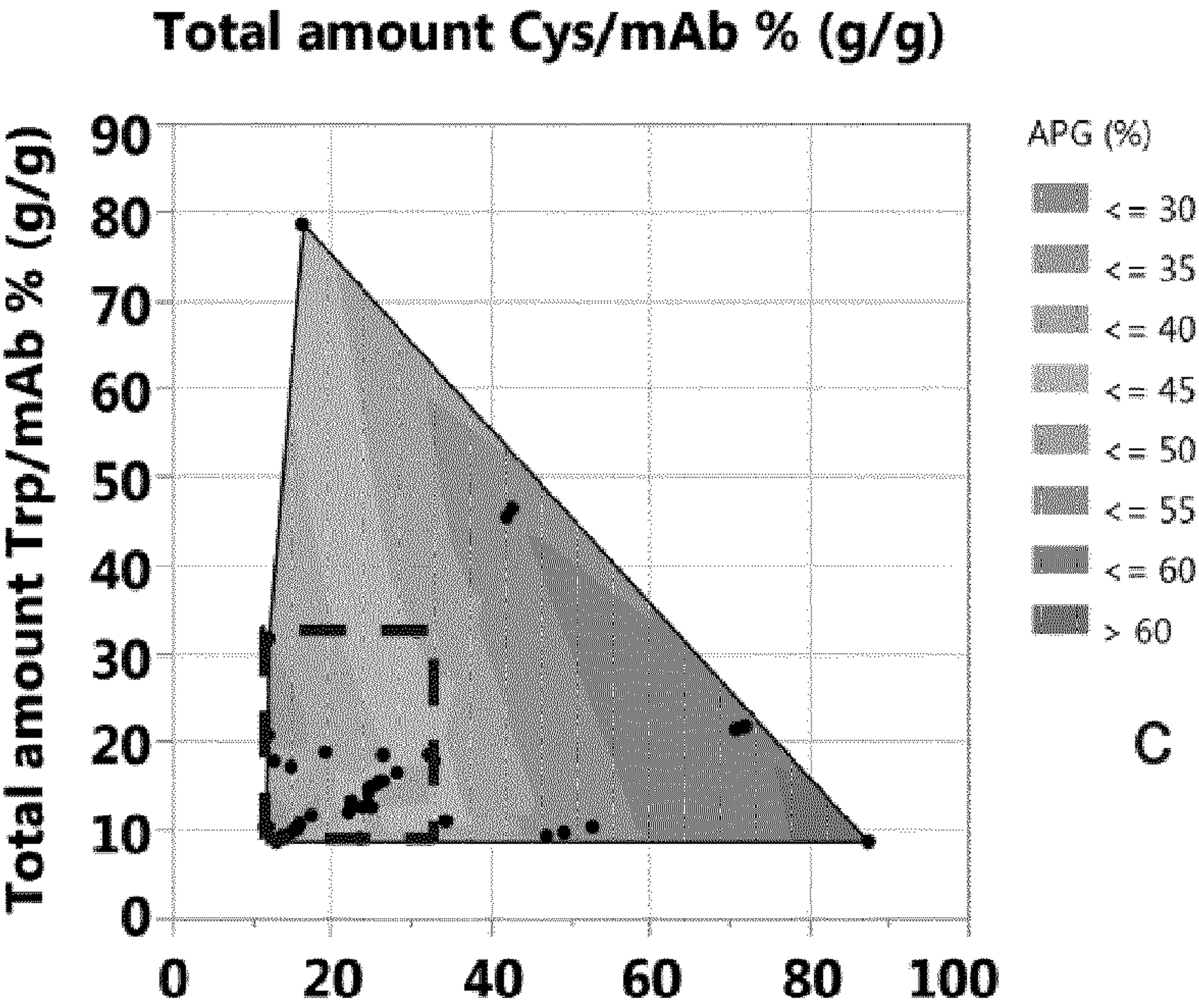
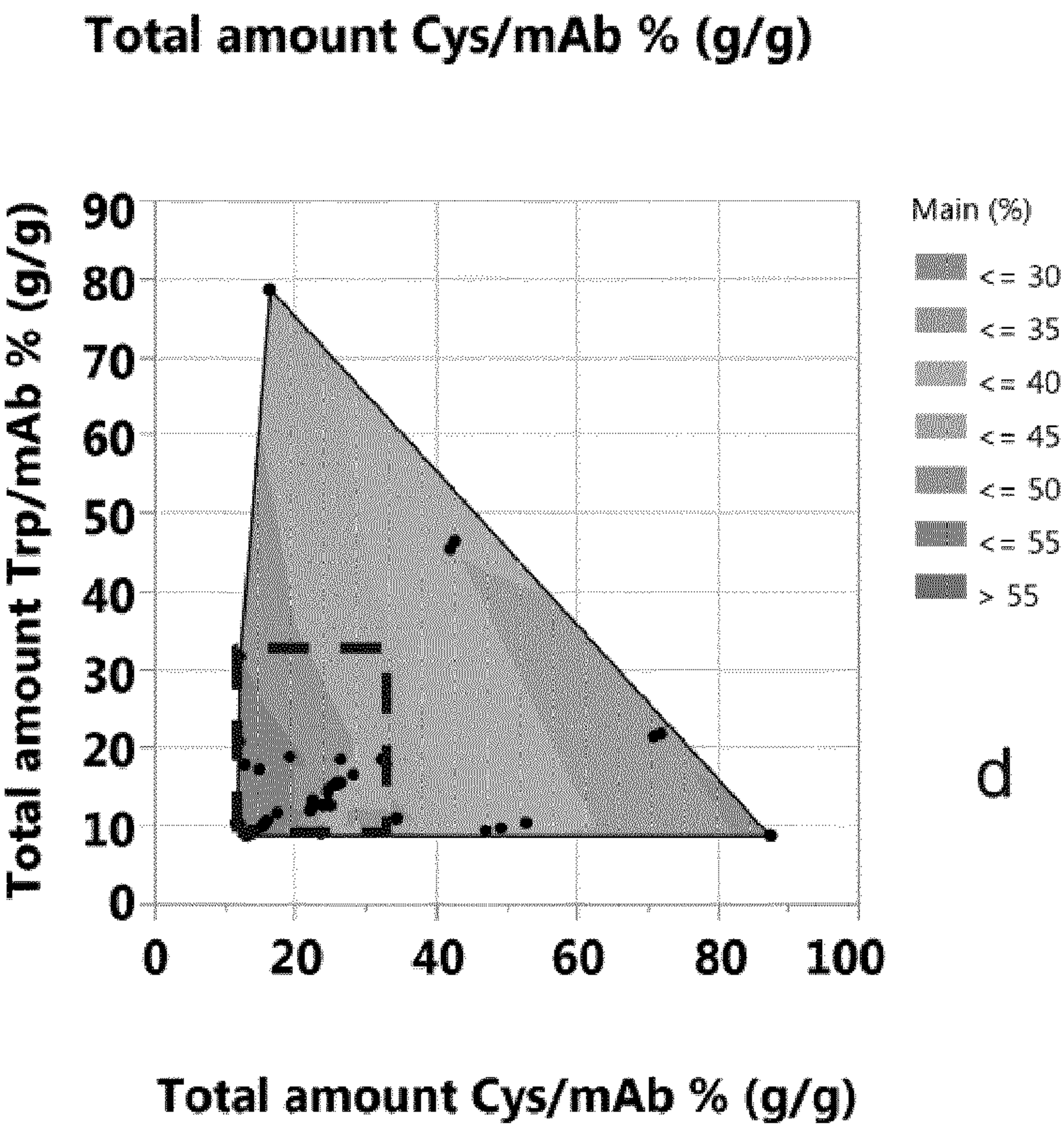


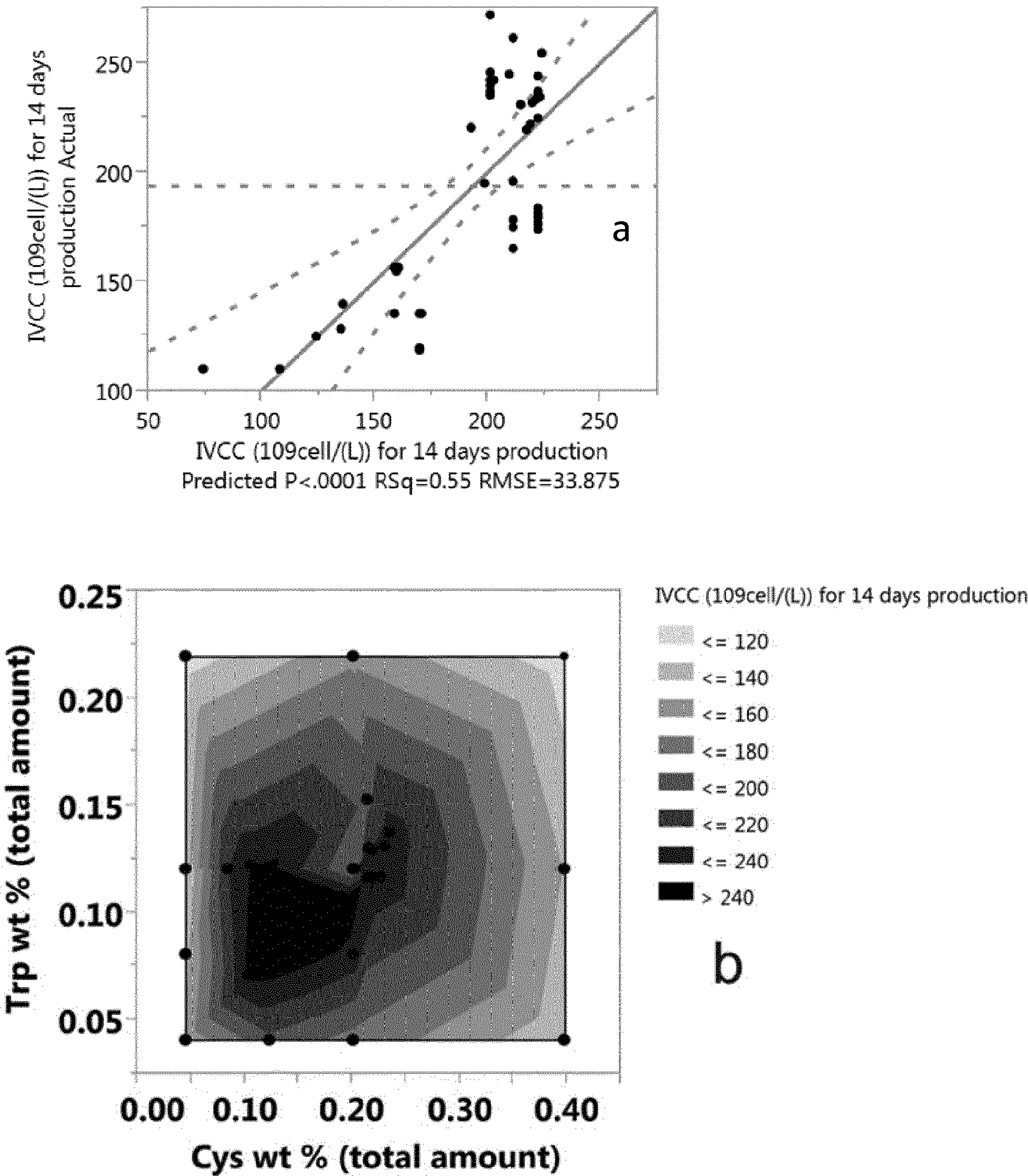
Fig. 8





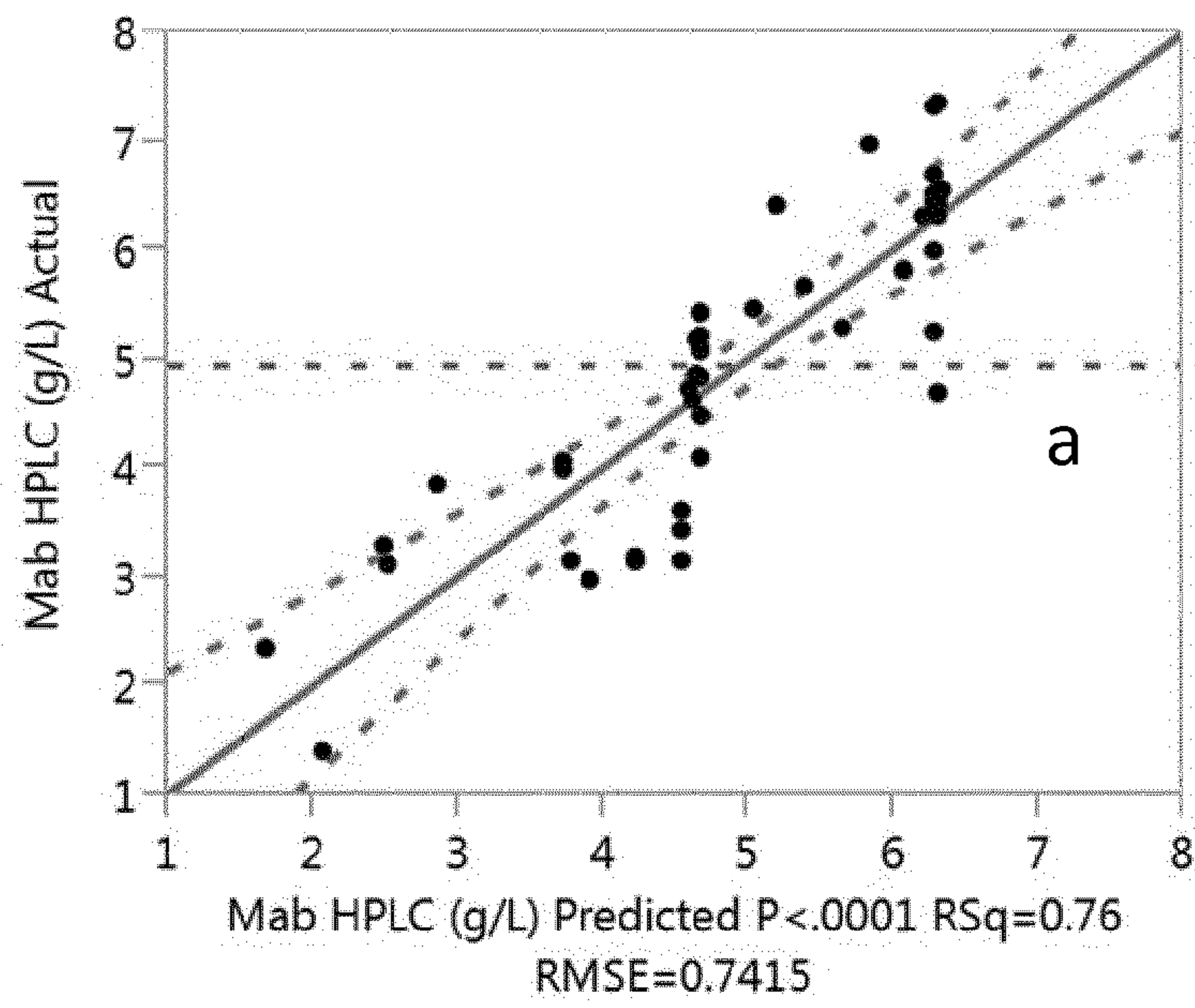
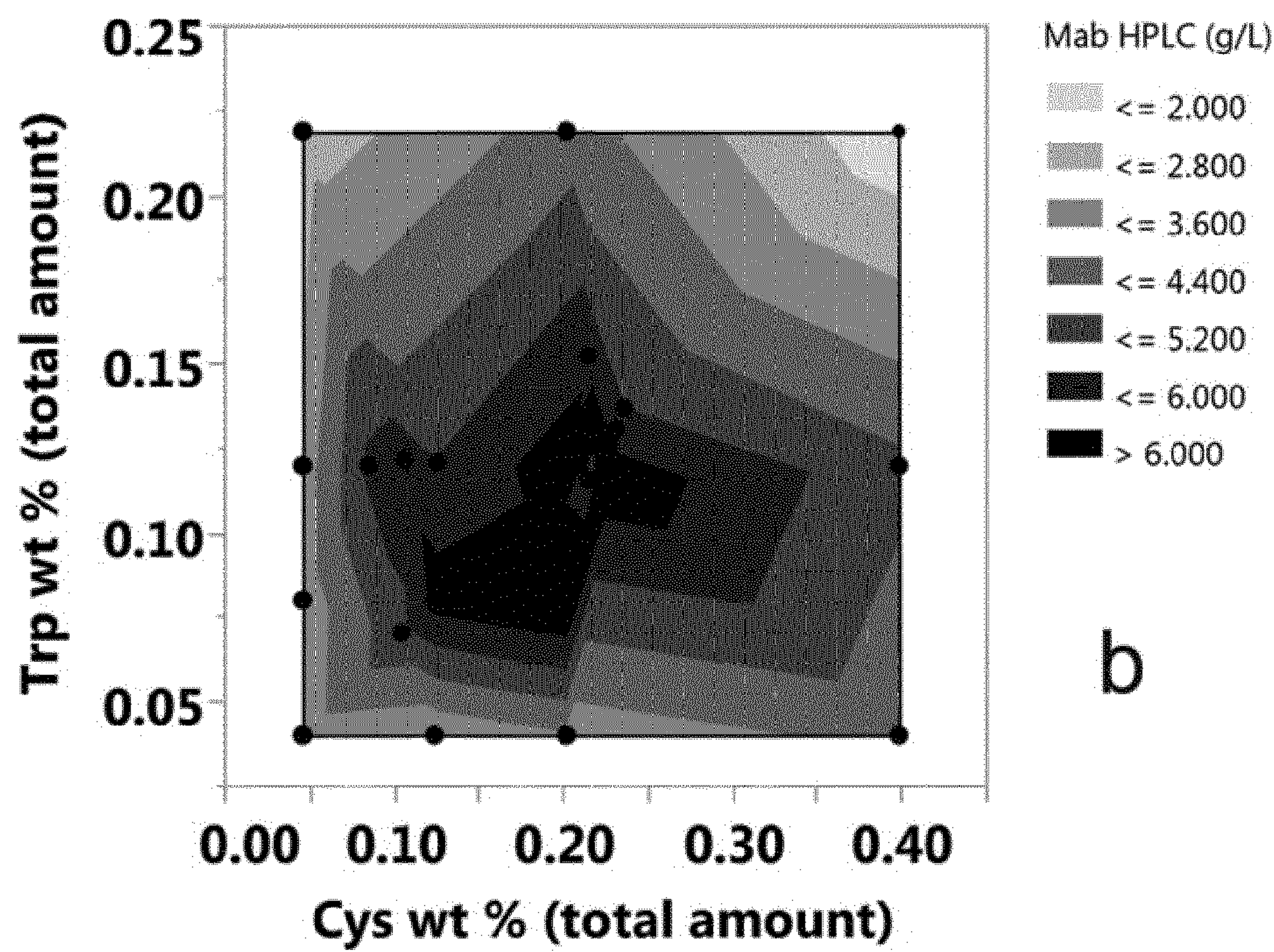
10/19

Fig 9



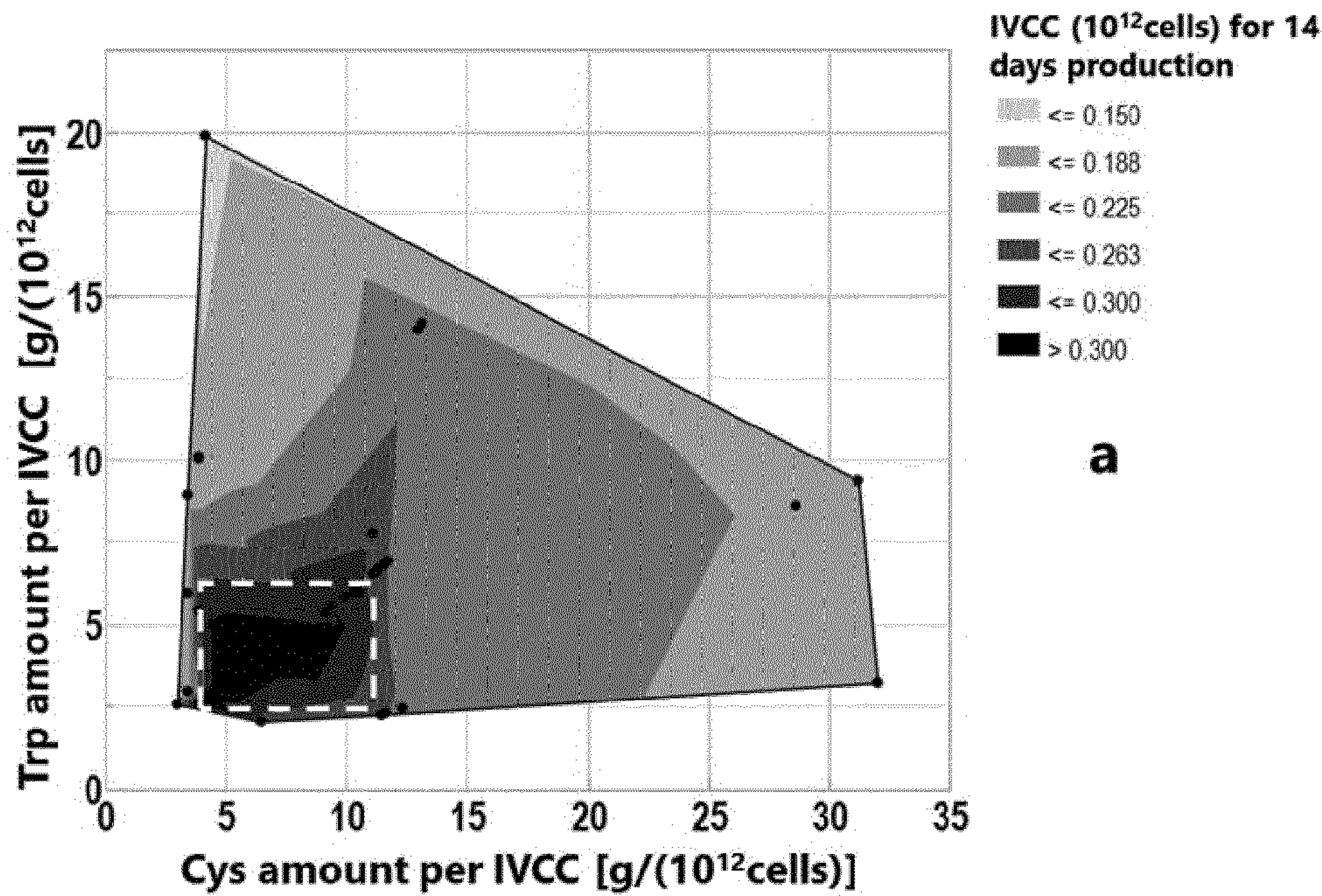
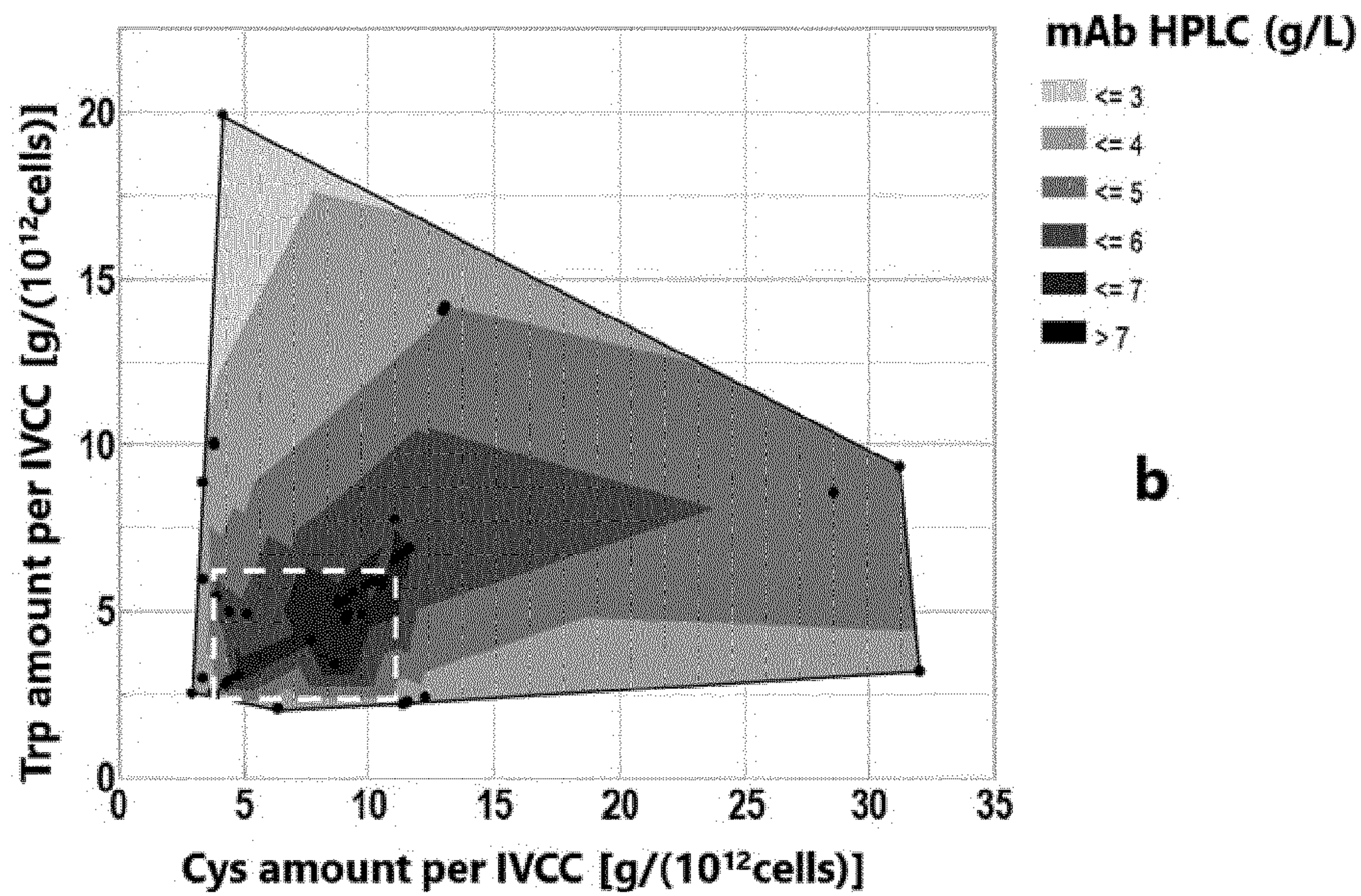
11/19

Fig. 10



12/19

Fig. 11



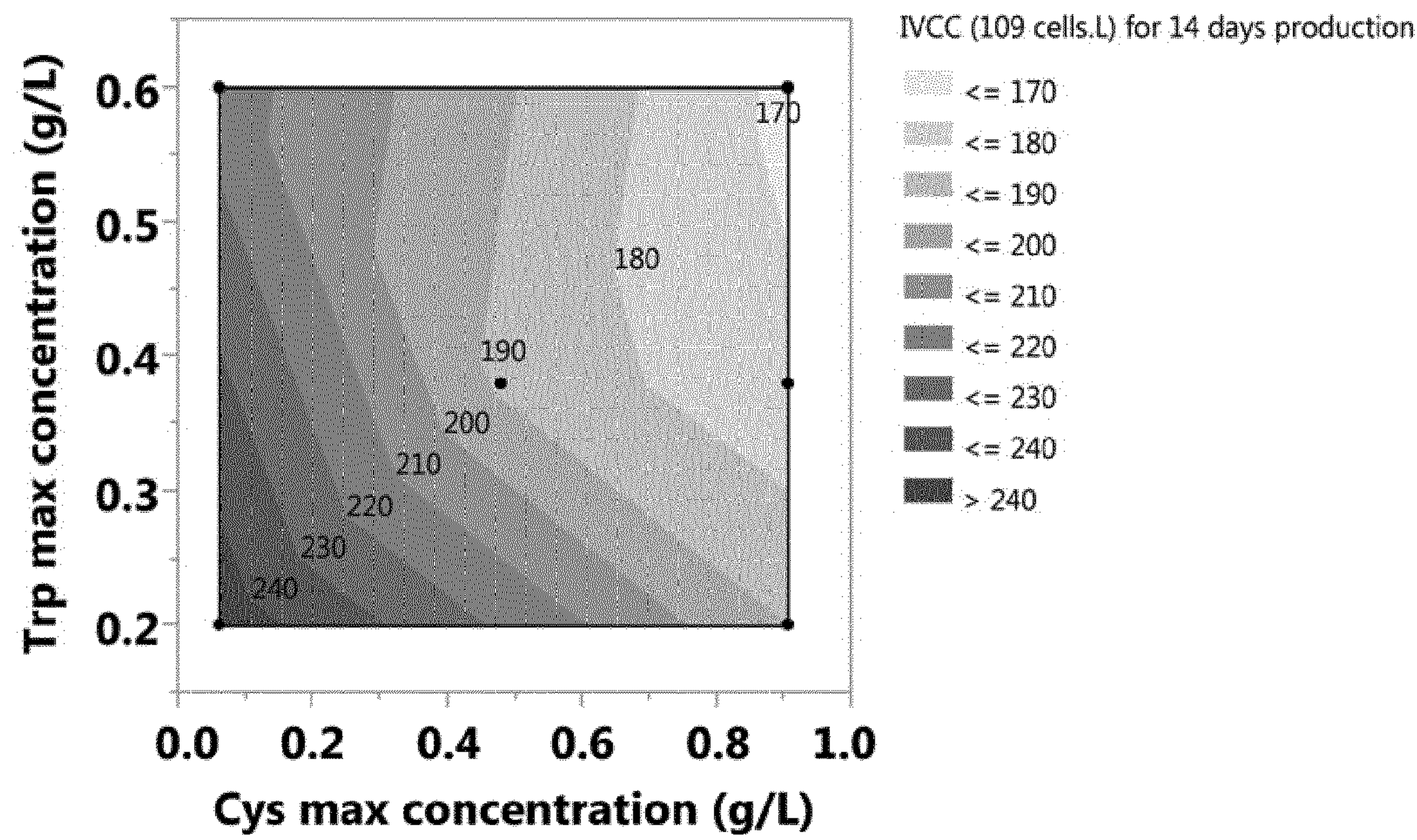
$$\text{Cys amount per IVCC} = \frac{\text{Quantity Cys added}}{\text{IVCC} * 10^{-12}}$$

$$\text{Trp amount per IVCC} = \frac{\text{Quantity Trp added}}{\text{IVCC} * 10^{-12}}$$

**c**

13/19

Fig. 12



14/19

Fig. 13

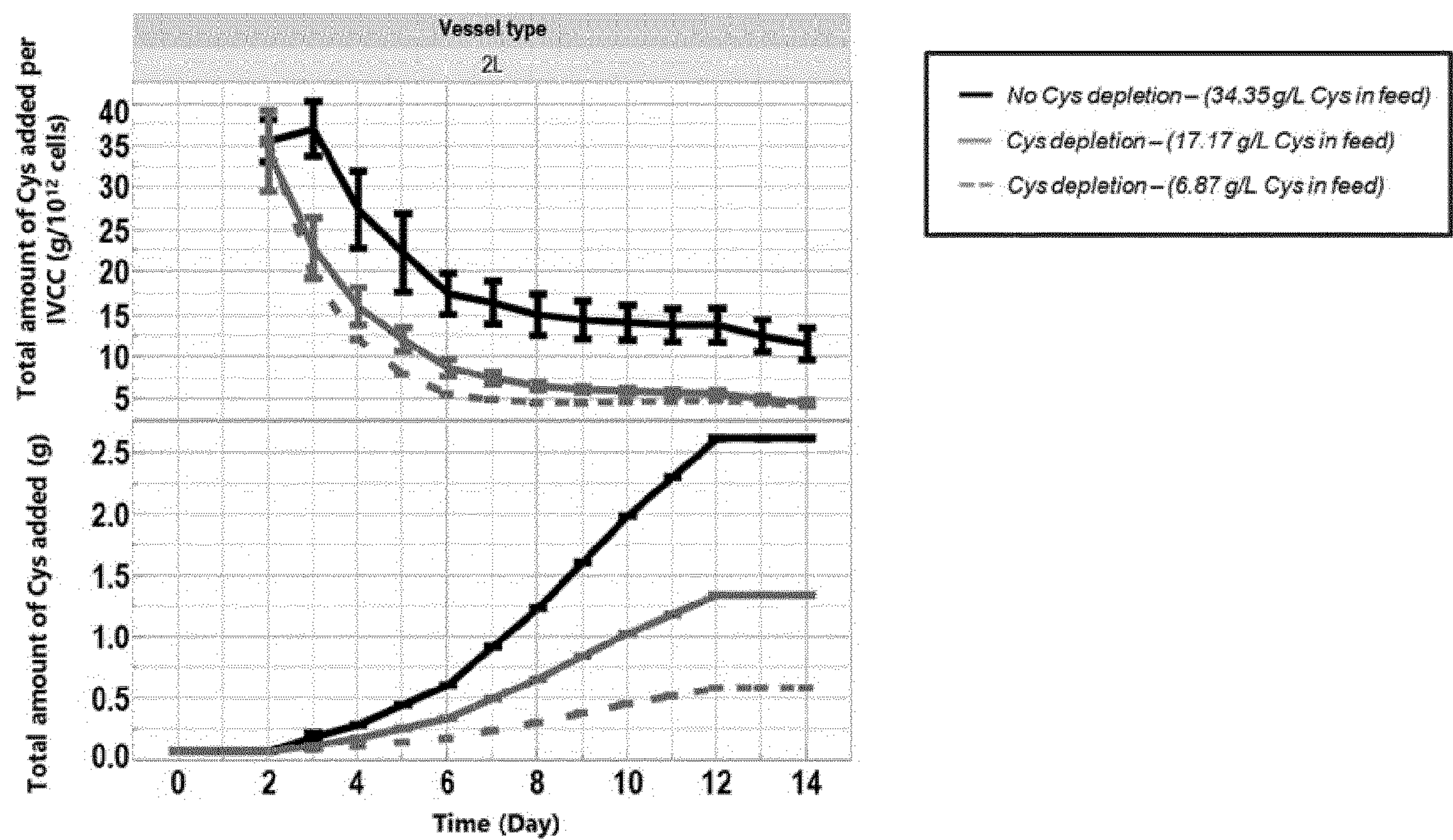


Fig. 14

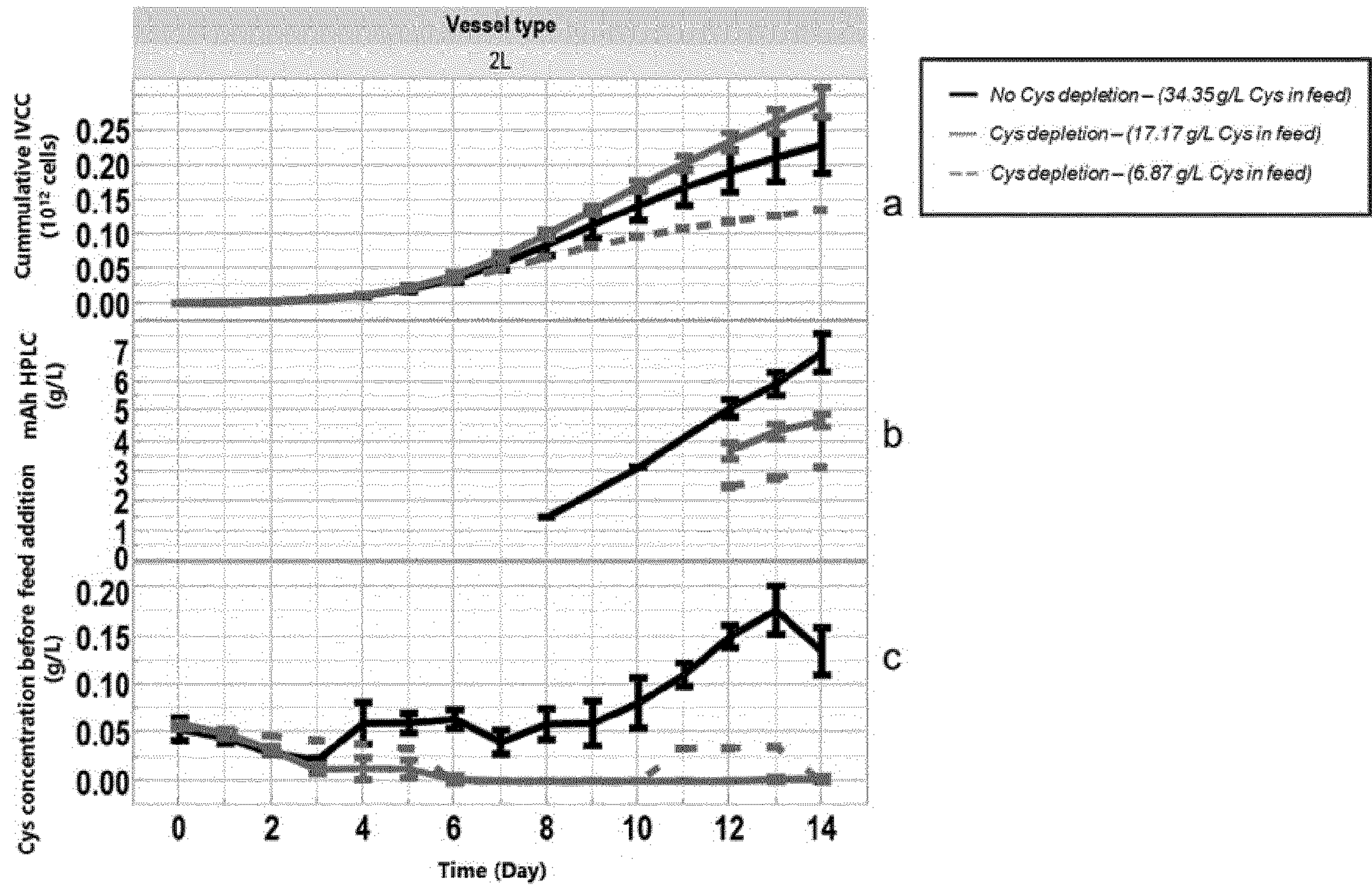


Fig. 15

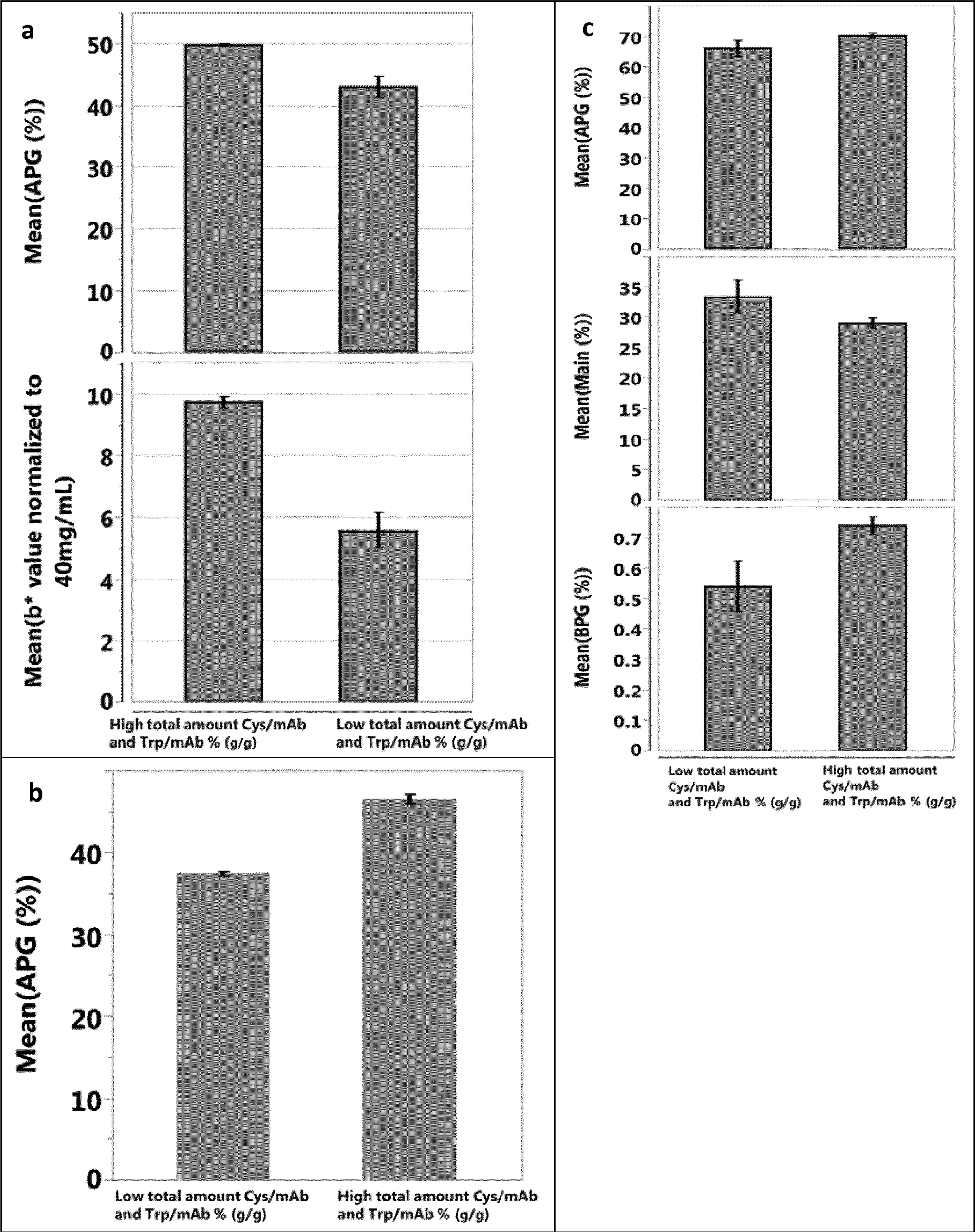
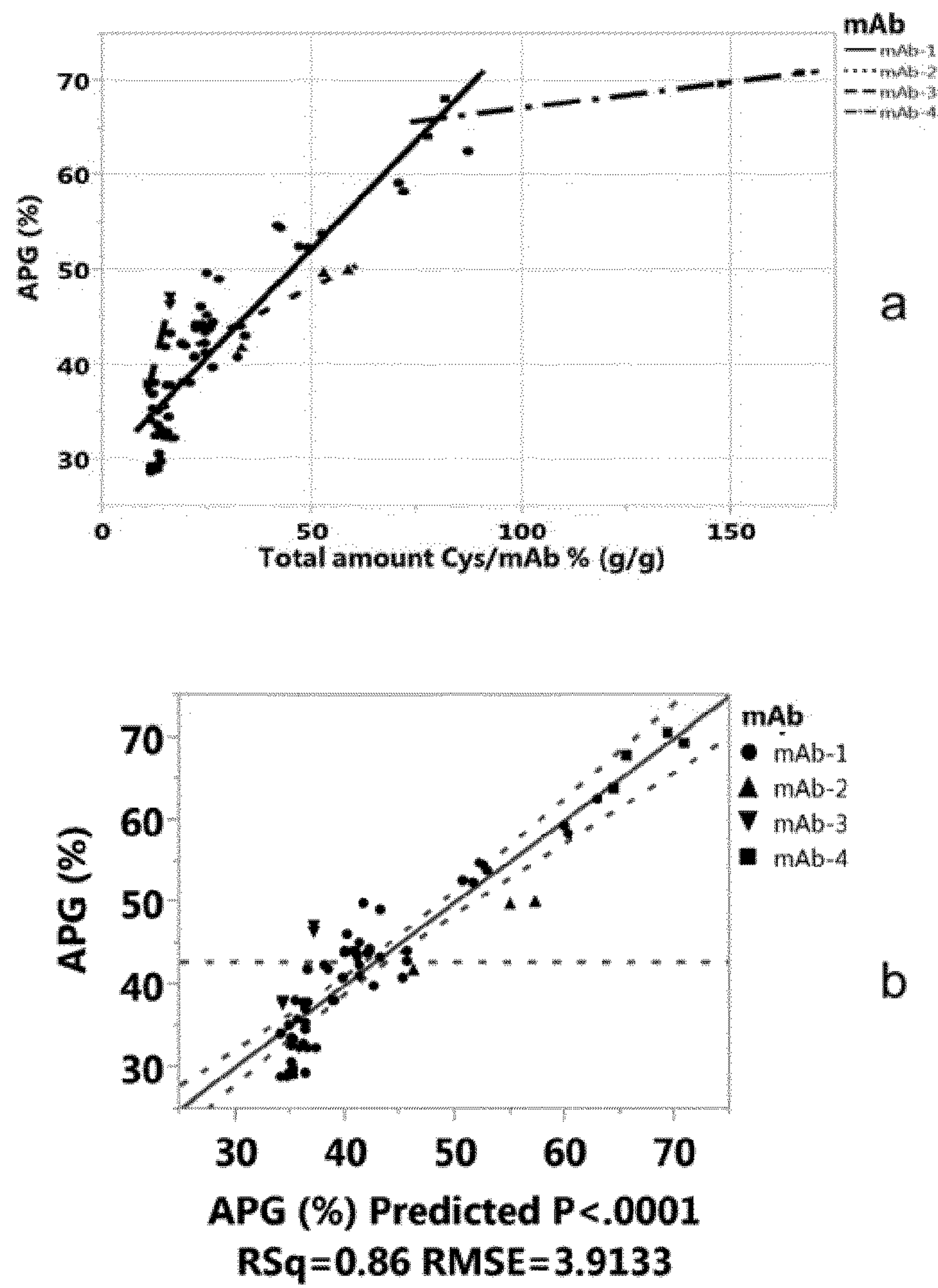


Fig. 16



18/19

Fig 17

$$APG (\%) = \frac{RATIO\ Cys/RC\% * 70.76}{RATIO\ Cys/RC\% + 47.53} + \frac{RATIO\ Trp/RC\% * 3}{RATIO\ Trp/RC\% + 1} + 17$$

Fig 18

