



Alvedia Scientific Study

Expression of DEA 1.1 molecules on canine red blood cells

INTERPRETATION OF WEAK DEA1.1 with Alvedia Quick Test, DiaMed Gel Test and Flow Cytometer

1 DiaMed Gel Test



2 Alvedia Quick Test



3 Flow Cytometer Analyser





Interpretation of results of DEA1.1 dog + and DEA1.1 - dog

1 Results on DiaMed Gel Test



Orco
MFI = 0

Sonate
MFI = 386

2 Results on Alvedia Quick Test

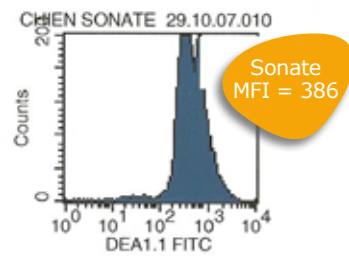
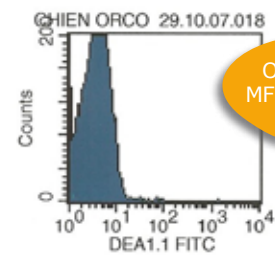


Sonate
MFI = 386



Orco
MFI = 0

3 Flow cytometer analysis



We calculated the percentage of positive cells by comparing cells stained with an unrelated antibody (negative control) and we express the Mean Fluorescence Intensity (MFI) which is in relation to the number of DEA1.1 molecules on the RBC surface.

If the MFI is high, the dog will give a strong DEA1.1 line on the Quick Test and a 4+ on the Gel Test.

If the MFI is low, the dog will give a faint DEA1.1 line on the Quick Test and red blood cells all over the Gel Test like a double population. (see pictures next page)



Interpretation of results with weak DEA1.1 + dogs

1 Results on DiaMed Gel Test

RBC all over the Gel with positive & negative lines result (looks like a double population)



Dog 201
MFI=49

Dog 206
MFI=64

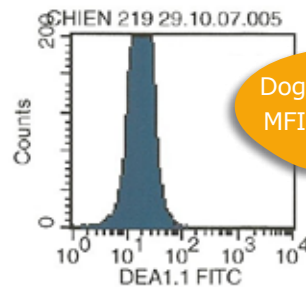
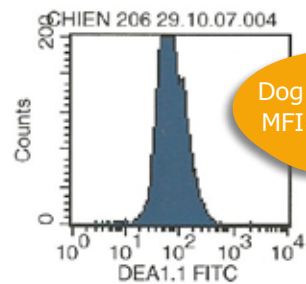
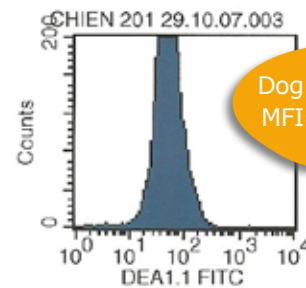
Dog 219
MFI=24



2 Results on Alvedia Quick Test

Very faint
DEA1.1 line

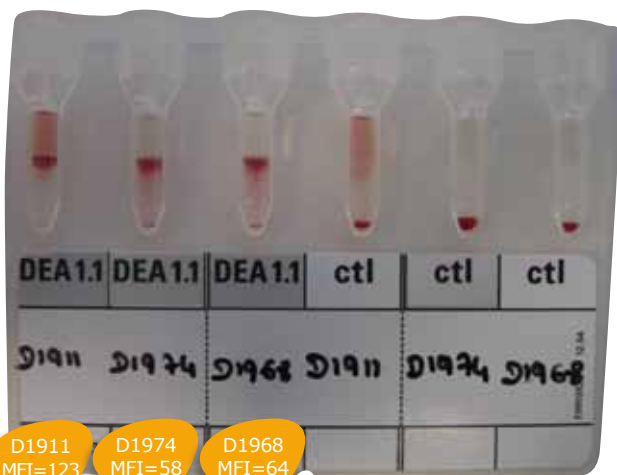
3 Flow cytometer analysis





Interpretation of results with weak DEA1.1 + dogs

1 Results on DiaMed Gel Test



D1911
MFI=123

D1974
MFI=58

D1968
MFI=64

2 Results on Alvedia Quick Test

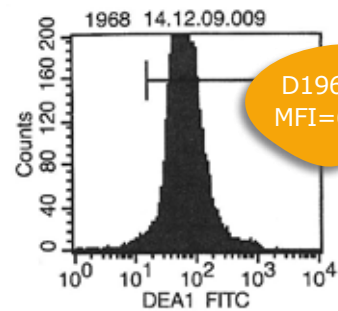
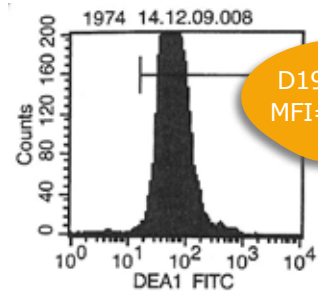
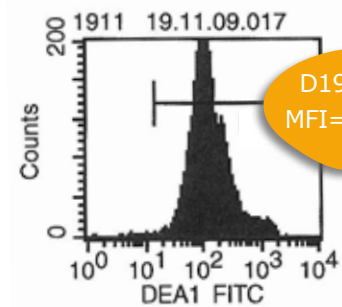


D1911
MFI=123

D1974
MFI=58

D1968
MFI=64

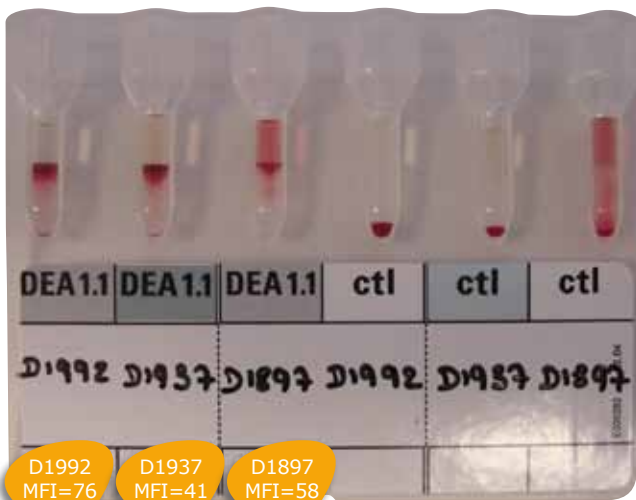
3 Flow cytometer analysis



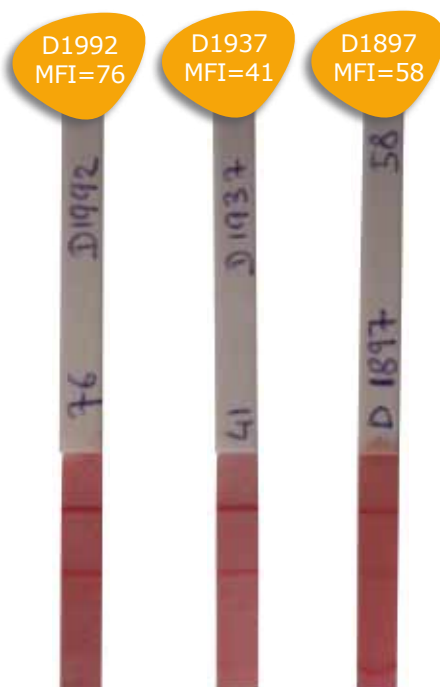


Interpretation of results with weak DEA1.1 + dogs

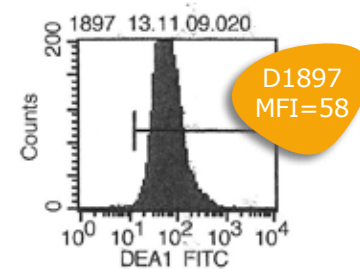
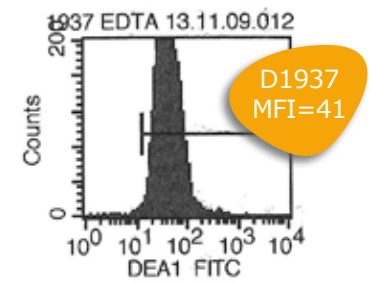
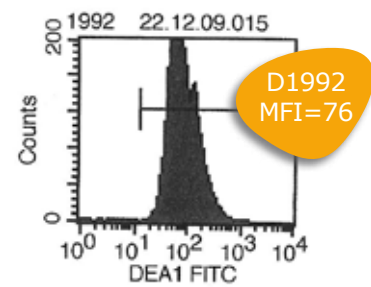
1 Results on DiaMed Gel Test



2 Results on Alvedia Quick Test



3 Flow cytometer analysis



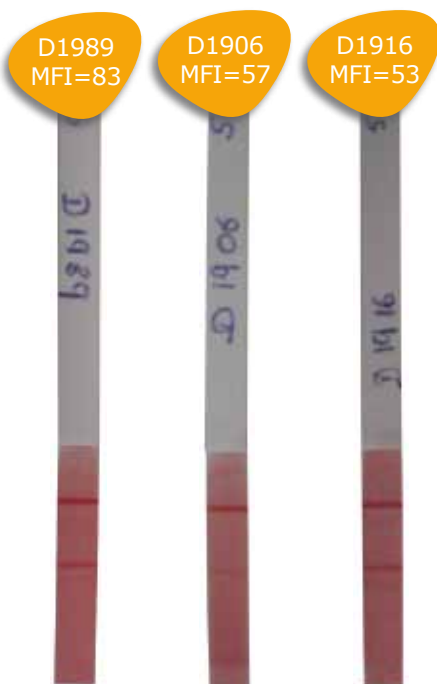


Interpretation of results with weak DEA1.1 + dogs

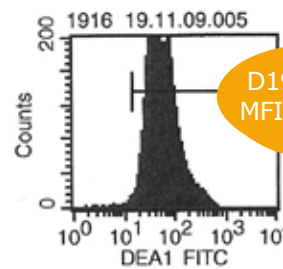
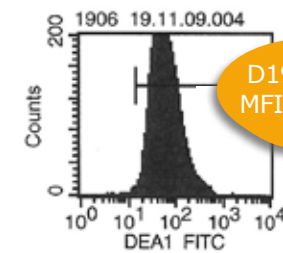
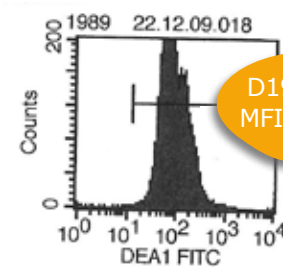
1 Results on DiaMed Gel Test



2 Results on Alvedia Quick Test



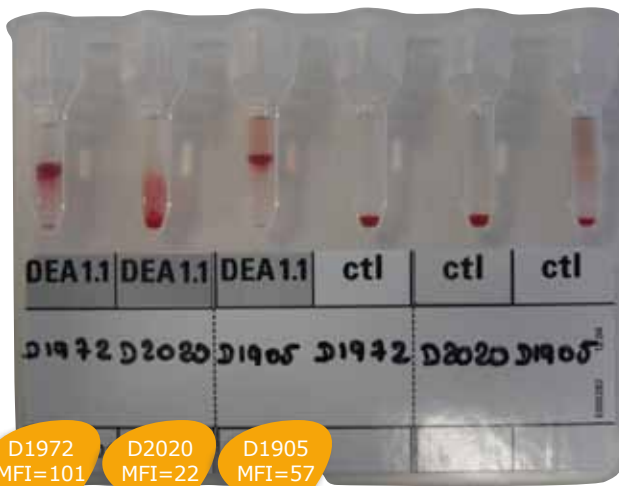
3 Flow cytometer analysis



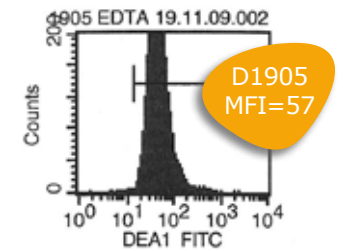
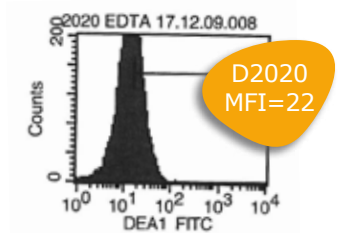
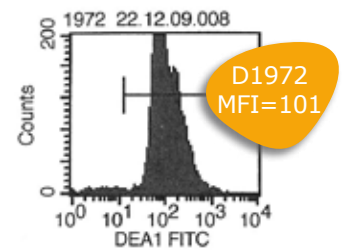


Interpretation of results with weak DEA1.1 + dogs

1 Results on DiaMed Gel Test



3 Flow cytometer analysis



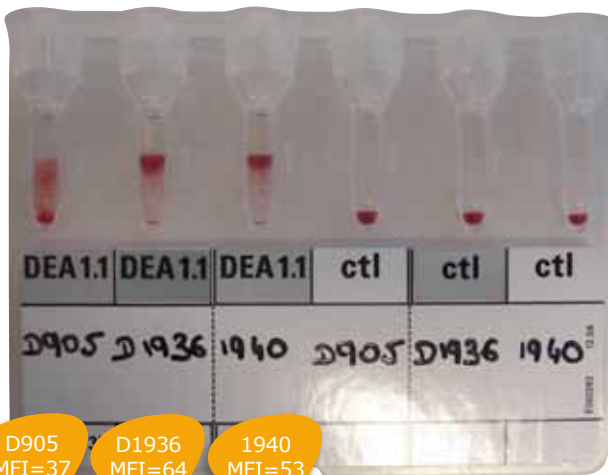
2 Results on Alvedia Quick Test





Interpretation of results with weak DEA1.1 + dogs

1 Results on DiaMed Gel Test

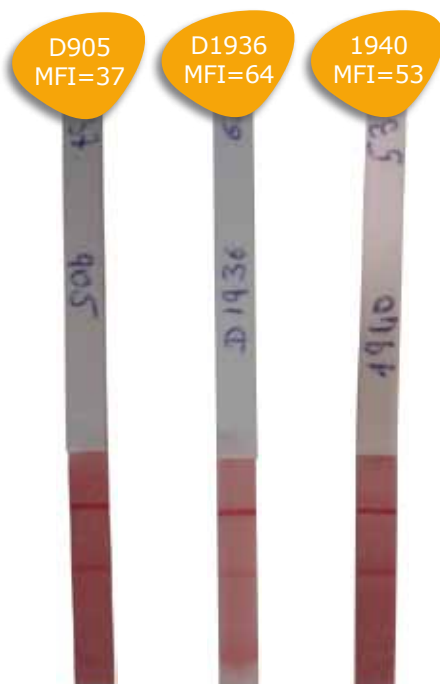


D905
MFI=37

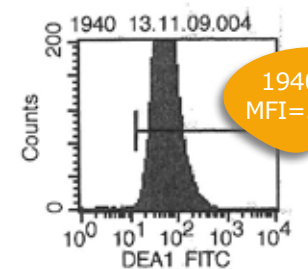
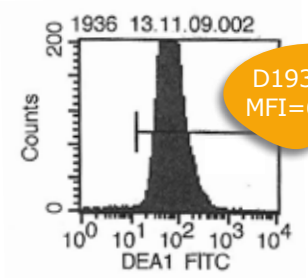
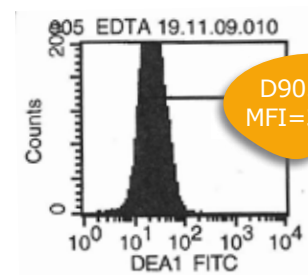
D1936
MFI=64

1940
MFI=53

2 Results on Alvedia Quick Test



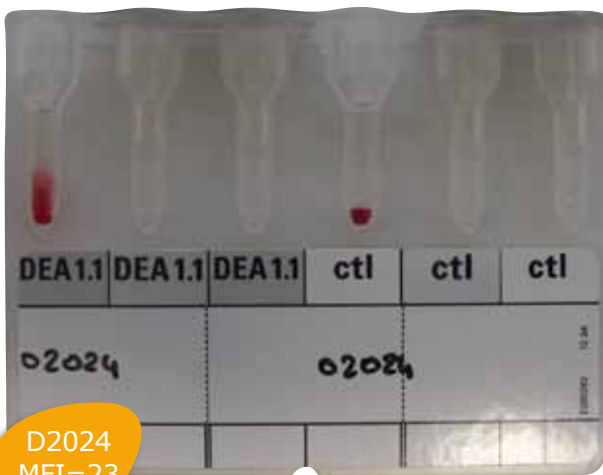
3 Flow cytometer analysis



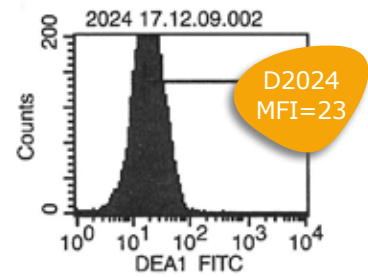


Interpretation of results with weak DEA1.1 + dogs

1 Results on DiaMed Gel Test



3 Flow cytometer analysis



2 Results on Alvedia Quick Test





Conclusions

- Our flow cytometer studies identified a large variation in the expression of DEA1.1 molecules on canine red blood cells (more than 500 analysis) from very weak expression to high expression. In these studies we always used the same monoclonal antibody produces in our laboratory.
- We established a perfect correlation between the 3 methods (flow cytometer, Gel Test, **Alvedia** Quick Test)
- The **Alvedia** Quick Test thanks to its immunochromatography assay can detect all range of DEA1.1 expression on red blood cells.
- The DEA1.1 line intensity on the membrane gives a correct level of the MFI without doing a flow cytometer analysis.
- In terms of transfusion, the weak DEA1.1 must be considered as DEA1.1 positive dogs.

