**Background**

The MDmulticard® Basic Extended Phenotype (Medion Grifols Diagnostics, Duedingen, CH) was launched in September 2016 and allows simultaneous typing for Jkâ, Jkâ', Fyâ, Fyâ', S, s antigens using lateral flow technique. [1]

**Aims**

In order to implement the MDmulticard® as an additional analytic platform we examined a series of samples taken from patients suffering from clinical conditions known to hamper serological red blood cell (RBC) antigen typing.

63 Samples

**Results**

The MDmulticard® was easy to handle and provided rapid results (in average 9 minutes from test start) making the method suitable for emergency applications. In general, the results were confirmed by alternative methods or known pre-values.

Two of known Fyâ' negative samples showed false positive reactions by MDmulticard® due to the patients’ strongly positive DAT (± 4+). One sample delivered a weak Jkâ' positive result by MDmulticard® although the patient was known to be Jkâ' negative by PCR. Clinical evaluation revealed recent transfusion of Jkâ' positive RBC concentrates. In two IgM-DAT positive samples, the predicted phenotype by PCR was accurately diagnosed by MDmulticard® upon washing the patient’s RBCs with NaCl 0.9%.[3] A similar observation was made with cord blood cells. Another sample from a patient with severe cold AIHA needed to be washed with warm NaCl 0.9%.

**Summary**

MDmulticard® allows reliable RBC typing even of DAT positive samples. MDmulticard® may be applied to samples of patients suffering from clinical conditions such as sickle cell disease, AIHA or paraproteinemia impairing standard serological typing. In pre-transfused patients or such with a strongly positive DAT, the distinct positive reaction by MDmulticard® allows to differentiate between false positive reactions and inherited antigen positive RBCs. For emergency situations, the MDmulticard® proves to provide rapid and reliable antigen typing which allows transfusing the patient with phenotype compatible RBC concentrates.

**References**

[1] Herziger et al., 2017