



## **C4d COMPLEMENT** MONOSPECIFIC SOLUTION **FOR IHC-P** application

DB Biotech introduces a new quality of monospecific rabbit clonal antibodies for clinical diagnostics and research developed by an original in vitro cloning technology owned by the company.

### **ADVANTAGES OF DB BIOTECH RABBIT CLONAL ANTIBODIES:**



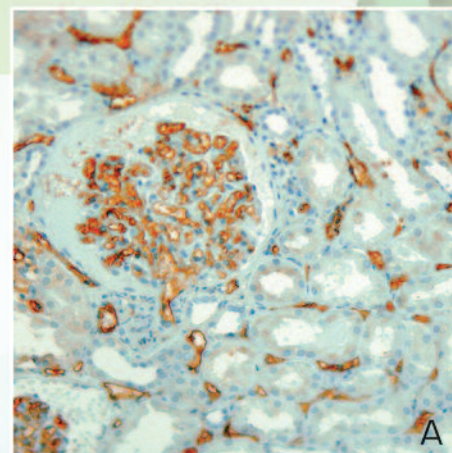
- **Exceptional specificity** recognizing the corresponding antigen at the concentration of  $\geq 5$  ng
- **Highest sensitivity, affinity and avidity**
- **Reliability on any tissue**

C4d is a split product of the complement C4 and its deposition serves as a sensitive and specific marker for antibody mediated rejection (AMR) of the transplanted organs.

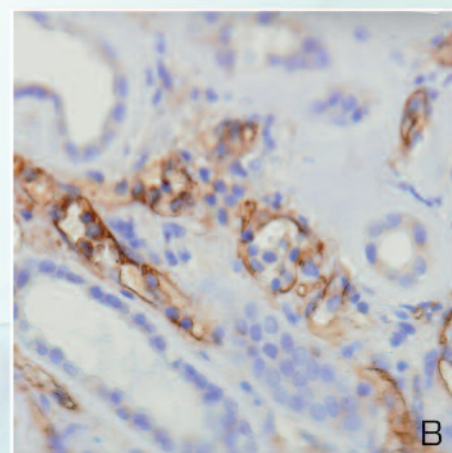
AMR is one of the most important adverse events after organ transplantation and if untreated, leads to significant graft loss. During AMR, C4d binds covalently to the target structures which makes it easy to detect with corresponding antibodies. Currently, all renal transplant biopsies and biopsies from other organs as well, are required to stain with C4d antibody.

**C4d rabbit clonal antibody developed by DB Biotech (DB107, clone A24-T) shows absolute specificity and high sensitivity in the detection of AMR in the settings of relatively busy kidney-transplant pathology service. It gives precise results from the formalin-fixed and paraffin-embedded tissue in cases where no fresh tissue is available for further immunofluorescence investigation.**

Formalin-fixed and paraffin-embedded human transplanted kidney stained with anti-C4d complement (DB107) antibody shows diffuse strong positive immunostaining of peritubular and glomerular capillaries (A), indicating acute antibody mediated rejection and diffuse strong positive immunostaining of dilated peritubular moderate capillaries (B), indicating acute antibody mediated rejection.



DB107 C4d complement



DB107 C4d complement



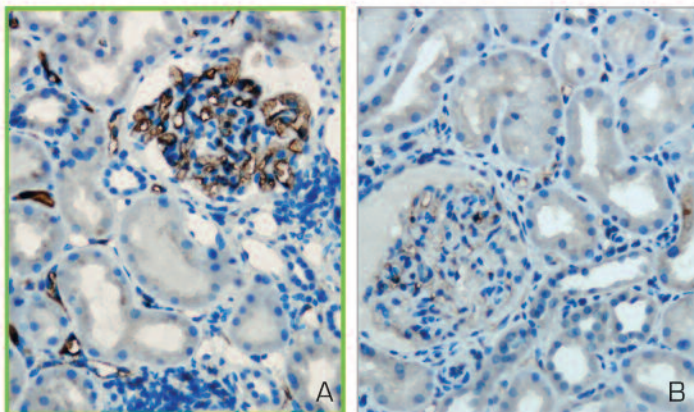
## CASE STUDIES

### What is the difference between monoclonal and DB Biotech clonal antibodies?

Clonal antibodies are monospecific such as monoclonals. The principal difference between these two types of antibodies is that the DB Biotech clonal antibodies recognize solely very specifically selected linear epitope on the antigen molecule after its detailed proteomic analysis whereas the monoclonal antibodies recognize very often steric epitopes that frequently change their conformation during tissue preparation, protein extraction, etc., making the corresponding monoclonal antibody unspecific, less avid and in extreme cases not functional.

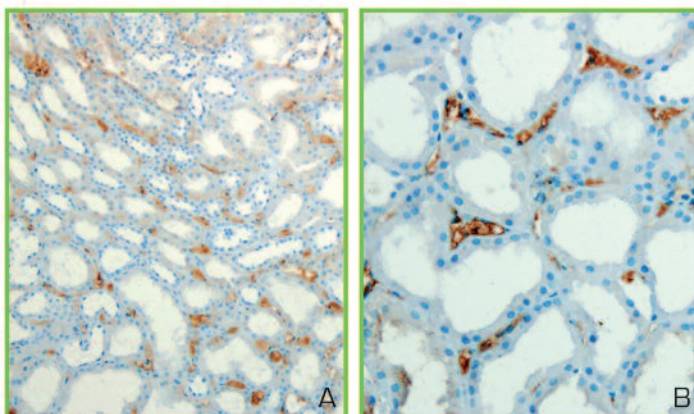
### PRODUCT FORMAT

<b>concentrated</b>	1 ml, 500µl, 200µl and 100µl 20µl TRIAL SIZE AVAILABLE
<b>pre-diluted</b>	RTU 7ml, 15ml
<b>minimum dilution</b>	1:100-200



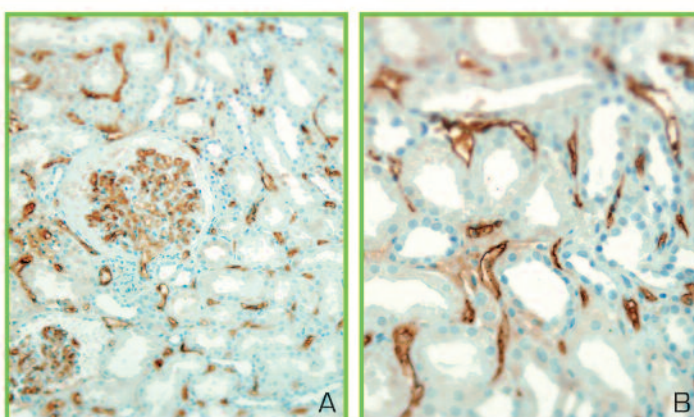
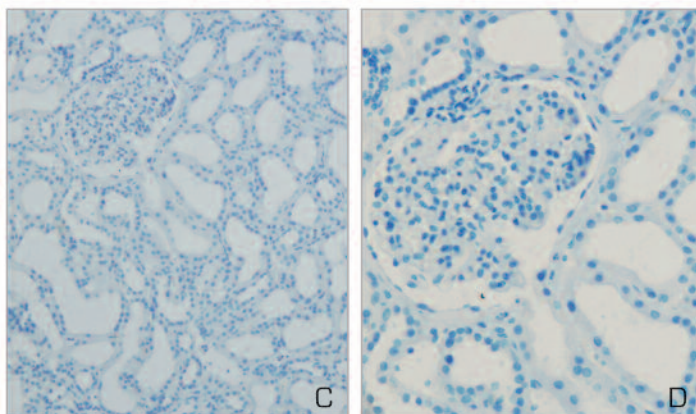
**Case 1:** Biopsy 26 months after transplantation because of unstable graft function.

Histologically, focal peritubular capillaritis was noted. Immunohistochemically, up to 60% of peritubular and glomerular capillaries stained with DB Biotech C4d antibody DB107 [A]. Case was considered suspicious for antibody-mediated rejection. **Somewhat less intensive positive staining with routinely used monoclonal antibody (B).**\*



**Case 2:** Post-transplant day 5.

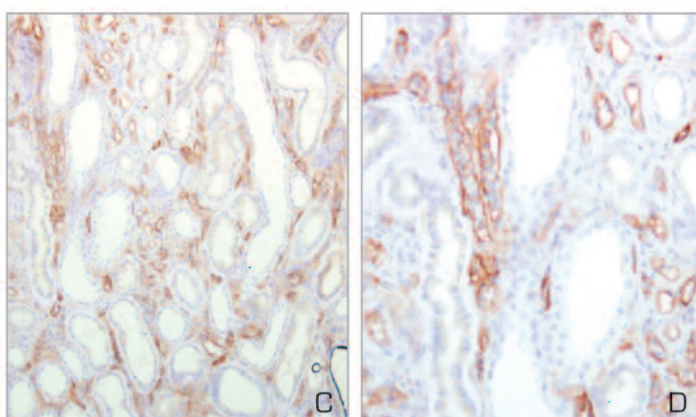
Sudden rise of the serum creatinine after previous decrease. Histologically acute tubular necrosis-like changes were found. Diffuse C4d positivity in peritubular and glomerular capillaries, stained with DB107 (A and B). This finding, together with positive post-transplant HLA cross-match were diagnostic of acute antibody-mediated rejection. **With the routinely used monoclonal antibody, no C4d staining was found (C and D).**\*



**Case 3:** Non-functional explanted graft, with morphological changes consistent with chronic active antibody-mediated rejection (transplant glomerulopathy and capillaritis).

Diffuse C4d positivity in peritubular and glomerular capillaries, stained with DB107 (A and B) and routinely used monoclonal antibody (C and D).

**Both antibodies with comparable staining.**\*



\* All the testing was kindly performed and provided by Marián Švajdler, MD. from Louis Pasteur University Hospital, Department of Pathology, Košice, Slovak Republic.



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