New Feline Blood Group
The only currently recognized blood group system in cats is AB, which includes blood types A, B, and AB. However, red cell antigens outside this system have been suspected based on incompatible crossmatch results and presumed hemolytic transfusion reactions, but none has actually been described. In this study, a negative crossmatch reaction with plasma from a blood donor cat (donor 1, named Mike) with red cells from other donor cats led to a detailed survey of the blood compatibilities of 65 type-A blood-donor cats. Subsequently, 2 additional type-A blood-donor cats (donors 2 and 3) were discovered. A case study described, in which a type-A feline renal transplant recipient had a hemolytic transfusion reaction, illustrated the clinical relevance of this discovery. Plasma from donors 1, 2, and 3 was reproducibly incompatible with red cells from all type-A cats in the study, but not with each others’ red cells or those from the renal transplant recipient. These data suggest the presence of an alloantibody produced against a common red cell antigen, which the authors termed Mik. Further studies are needed to determine the mode of inheritance, geographic distribution, and frequency of the Mik antigen. Meanwhile, in light of their findings, the authors suggest performing a crossmatch before any transfusion. It is also suggested that using crossmatch tests with AB-typed donors to indirectly determine blood type may yield erroneous results, and AB blood typing, using either in-house commercially available typing cards or a reference laboratory, is advised.

COMMENTARY: It has commonly been believed that determining the AB blood type in a cat with no history of transfusion is sufficient and that a minor crossmatch, using plasma from an AB-compatible donor with no prior transfusions, should be compatible. Crossmatch testing was done only if additional transfusion was necessary. Results of this study belie this conventional approach. Instead, it seems that typing and crossmatching of cats requiring blood products—regardless of whether they have had a previous transfusion—might need to be done routinely. As more blood compatibility testing is done, it is likely that more red cell antigens will be discovered and crossmatching will become de rigueur.