

Title: The role of neuraminidases in platelet function in general and during storage

Platelets, crucial for cessation of bleeding, deteriorate rapidly during storage. Known as the 'platelet storage lesion' (PSL) this leads to a short 5-day shelf-life for platelets. Although the PSL is not well understood, platelets from some donors do not store as well as others, leading to reduced survival and clinical effectiveness following transfusion into patients. Platelets contain many sugars, important for removal of dying/dysfunctional platelets from the body. The sugars can be removed by specific enzymes called neuraminidases. However, it is currently unknown whether 1) neuraminidases play a role in the function of healthy platelets and 2) platelets from certain donors contain different neuraminidase(s) or levels on their surface. These findings are essential to understand how platelets work, important for the Blood service in order to improve quality of platelet products and storage conditions.