Podocalyxin and endomucin are two sialomucins found on the endothelial cell surface of vascular endothelial cells. It is believed that these mucins may play a role in regulating capillary permeability via the intercellular interactions. The opening and closing of junctions between endothelial cells may be modulated, in part, by charge repulsions induced by the heavy sialic acid content of these mucins. Immunostaining using lectins was used to determine sialic acid content and distribution on the endothelial surface. To further quantify sialic acid on the endothelial surface, an HPLC method is being developed. Most HPLC assays for sialic acid detection use pulsed amperometric detection (PAD). However, it is not always the most practical option. We are developing a method to quantify sialic acids via anion exchange HPLC using a UV detector. Sialic acid is present in cell medium after the cells are exposed to neuraminidase, which cleaves sialic acid from sialoglycoproteins. The sialic acids are removed from the medium via anion exchange solid phase extraction cartridges then lyophilized and reconstituted in mobile phase. The mobile phase is 50 mM NaH2PO4 adjusted to pH 5.30 and run isocratically. The sialic acid is detected at 206 nm and elutes at 3.07 minutes. The peak area on the chromatograph is then compared to a calibration curve to obtain an exact concentration. This simplified quantitative method for determining sialic acid concentration allows for easier study of the structure-function relationship between sialic acid and endothelial permeability.