

Ion Selective Electrodes and Solutions to Biofouling

Ion selective electrodes have numerous applications in medical technology and industry, but are limited by the effects of biofouling, which decreases the electrode's selectivity and increases electrode drift. This project proposes limiting the effects of biofouling by adding a fluorophilic decanol derivative to the membrane of an ion selective electrode and adding equine serum to the inner filling solution of the electrode. The response of electrodes doped with the fluorophilic decanol and equine serum was observed for cholic acid, octanoic acid, and equine serum. When compared to the response of control electrodes without the fluorophilic decanol and serum, the serum doped electrodes exhibited the least interference. The selectivity of the doped electrodes was also measured in reference to K^+ and Na^+ , and the addition of the alcohol and serum to the electrodes did not appear to change the selectivity relative to the control electrodes.