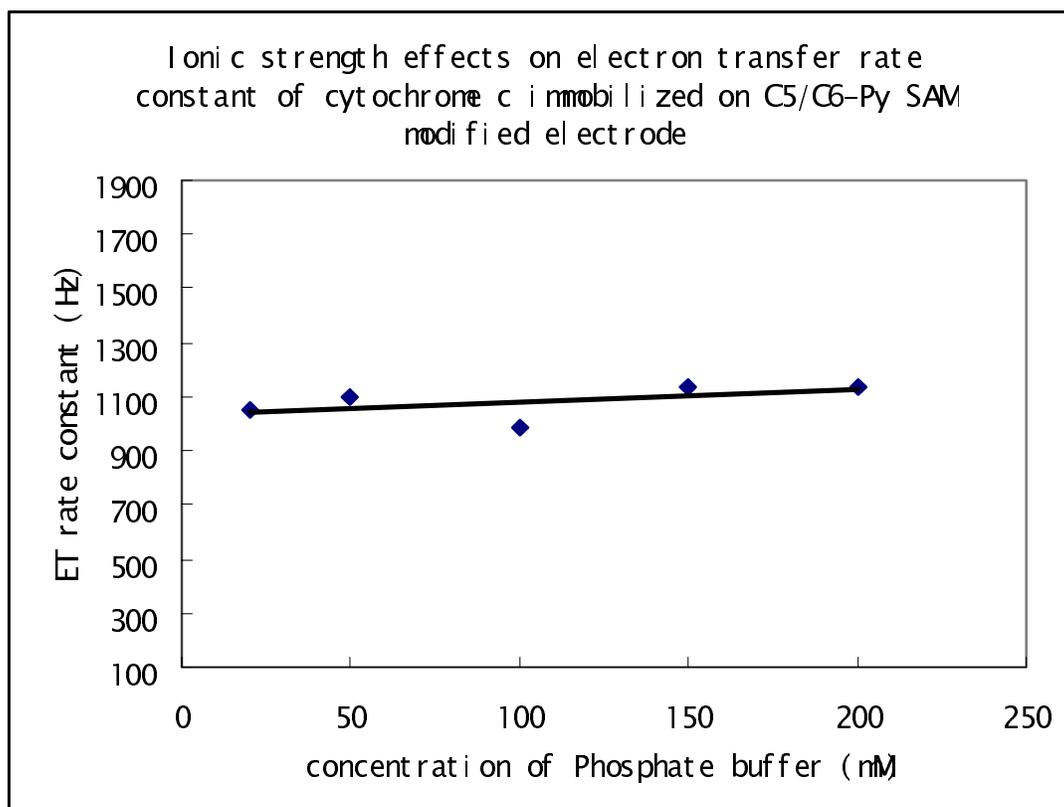


The Impact of Ionic Strength on the Measured Rate Constant

To address the importance of iR drop on the measured standard heterogeneous rate constant, experiments were performed at a range of solution ionic strengths for the C5/C6-Py system. This system was studied because it had the highest rate constant of the alkyl tethered systems and should be most susceptible to problems with the iR drop artifact. Data were collected for buffer solution concentrations ranging from 20 mM to 200 mM. buffer solution and at different viscosities. The data in the graph show the trend in the rate constant with ionic strength in the aqueous buffer solution. The data in the table show the extreme rate constants at three different viscosities.



Solutions of different viscosity	k (Hz) 20 mM buffer	k (Hz) 200 mM buffer
0 g/L glucose	1513	1720
200 g/L glucose	1050	1140
400 g/L glucose	672	815

The SAM modified electrodes were incubated in 20 mM buffer solution with 50-100 μ M cytochrome c and run cyclic voltammetry in different ionic strength solution by changing the concentration of phosphate buffer at pH 7. The viscosities of the solution were altered by adding 200 g/L or 400 g/L glucose.