3. Typically, the cytoplasm of most animal cells is rich in potassium and poor in sodium, a condition opposite to that found in the blood and extracellular fluids surrounding these cells. Examine closely the following set of data, obtained by precise analysis of the ionic composition of blood from 3 mammalian species.

		Ionic Composition (mM)					
	Species	**Intracellular**			**Extracellular**		
		Na^+	**K^+**	**Cl^-**	**Na^+**	**K^+**	**Cl^-**
1.	**Human**	**19**	**136**	**78**	**119**	**5.0**	**113**
2.	**Dog**	**135**	**10**	**87**	**152**	**5.1**	**112**
3.	**Cat**	**142**	**8**	**84**	**157**	**5.3**	**112**

A) (6 pts) Assuming these data are valid, what mechanism(s) could be proposed to account for the non-equilibrium condition that apparently exists between a human erythrocyte and its environment, with respect to these ions?

B) (8 pts) How can the interspecific differences be explained? (Note: your reasoning must be **explicit!**)

C) (6 pts) Discuss succinctly experimental procedures for testing your hypothesis(es) and the expected results.