A Study of Various Activating Mutations and Conditions of the Epithelial Sodium Channel

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Acknowledgements

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Part I.

Introduction

1. ENaC in the Body

1.1. ENaC biology and physiology

Blood pressure must be maintained within a narrow window of acceptable values. Too low, and vital organs do not receive sufficient oxygen and nutrients to function, but blood vessels sustain damage when pressure is too high. It is not surprising, then, that the human body has evolved several mechanisms for responding to changes in blood pressure, each with their own timescale[guyton91?]. ENaC is the essential mechanism of the longest-term control, kidney excretion.

When the kidney is not receiving enough salt (which could be a result of a low-salt diet or reduced blood pressure), it initiates a cascade which ends with the mineralocorticoid hormone aldosterone inducing expression of ENaC in the distal nephron.

This whole process is called the "renin-angiotensin-aldosterone system", or RAAS. It is reviewed well with an eye toward blood pressure in[lifton01?].

References