MOLECULAR ASPECTS OF GENERAL ANAESTHESIA

Essay
Submitted for Partial Fulfillment
of M.Sc. Degree in Anaesthesia

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List of Contents

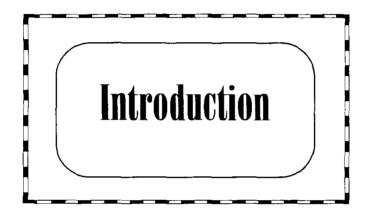
		PAGE
Introduction		1
Chapter (1):	Anatomy of the Cell Membrane	2 - 4
Chapter (2):	Sodium and Potassium Channels	5 - 15
Chapter (3):	Structure and Function of Calcium Channels.	16 - 19
Chapter (4):	Ligand-Gated Ion Channels	20- 22
Chapter (5):	Effects of Anaesthetic Agents on Ion Channels	23 - 42
Chapter (6):	Opioid Receptors and their Relevance to Anaesthesia	43 - 47
Chapter (7):	GABA Receptors and Benzodiazepines	48 - 51
Chapter (8):	Interaction of Anaesthetic Agents with Signal Transduction	52 - 58
Chapter (9):	Effect of Anaesthetic on Uptake, Synthesis and Release of Transmitters	59 - 64
Chapter (10):	Excitatory and Inhibitory Synaptic Mechanisms in Anaesthesia.	65 - 67
Chapter (11):	Central Neuronal Pathways and Anaesthesia	68 - 70
Summary		71 - 75
References		76 - 97
Arabic Summar	y	1 - 4

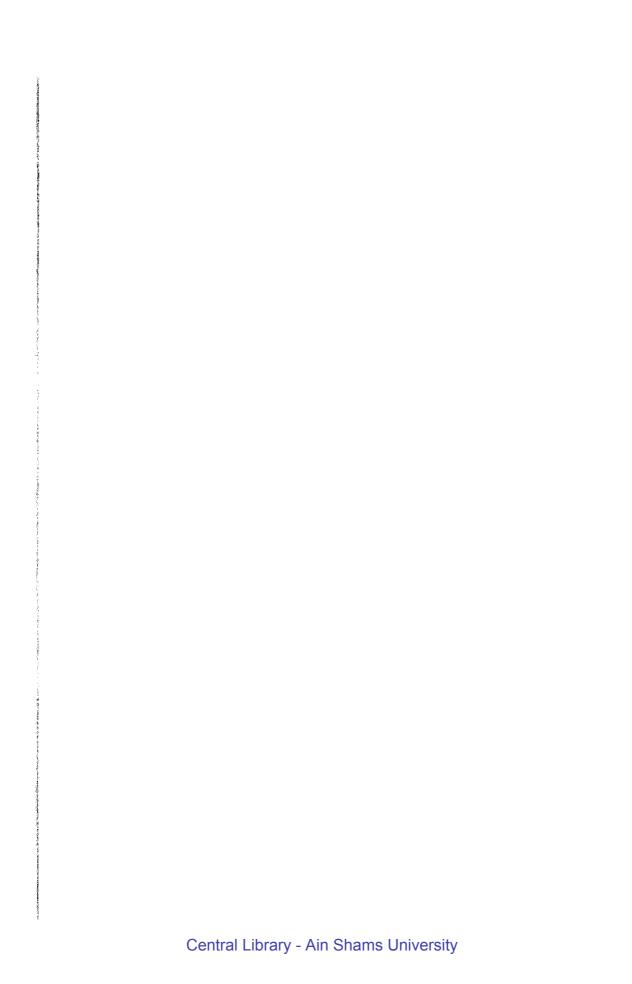
List of Tables

No.	Page
Table (1):	12
Table (2):	17

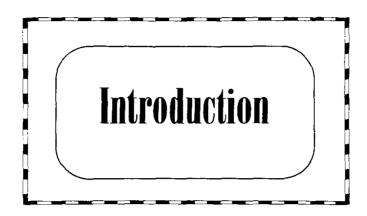
List of Figures

No.	Page	No.	Page
Figure (1):	2	Figure (2):	6
Figure (3):	8	Figure (4):	10
Figure (5):	25	Figure (6):	27
Figure (7):	30	Figure (8):	33
Figure (9):	52	Figure (10):	54
Figure (11) :	55	Figure (12) :	56





Introduction (1)



The term anaesthesia can be described in practical terms as the condition of a patient corresponding to the one produced by diethylether which permits surgery to be performed without the patient removing, reacting to pain, or remembering the surgical intervention after recovery from anaesthesia (*Urban*, 1992).

The action of an anaesthetic at a particular molecular site will depend on how this molecular site is integrated into the function of the CNS (*Urban*, 1992).

The anaesthetic effect on a particular membrane protein (e.g., a sodium channel) is the result of several and simultaneous actions at presumably distinct sites of the sodium channel macromolecule. The total anaesthetic response of a neuron again results from the summation of the responses of its different ion channels and ion pumps to the anaesthetic and the various inputs it receives from neurones of surrounding network (*Urban*, 1993).

While the molecular basis of the action of most anaesthetic agents is unknown, it is a commonly held view that general anaesthetic drugs have a more pronounced effect on synaptic mechanisms in the CNS than on the propagation of electrical signals along axons (Larrabee et al., 1952).



Anatomy of the Cell Membrane

