

Contents

1 Mast Cells and the Allergic Response	1
Introduction	1
Mast Cell Activation and Mediator Release	3
Mast Cell Activation	3
Mast Cell Mediators	4
Preformed Mediators	4
Newly Generated Mediators	7
Mast Cell Mediators and Their Antagonists In Vivo and In Vitro	8
2 Mast Cell Heterogeneity	13
Morphological Heterogeneity	13
Ontogeny of Mast Cells	15
Functional Differences	17
3 Superficial Mast Cells and the Asthmatic Response	23
Introduction	23
Bronchoalveolar Lavage Technique	24
Human Bronchoalveolar and Dispersed Lung Mast Cells	26
Morphological Heterogeneity of Human Lung Mast Cells	27
Human Lung Mast Cells	29
Mediator Release from Human Bronchoalveolar Mast Cells	29
4 Some Functional Properties of Human Bronchoalveolar and Dispersed Lung Mast Cells	35
Introduction	35
Histamine Content and IgE-Dependent Histamine Release	35
The Effect of Anti-allergic Compounds	37
Disodium Cromoglycate	37

Nedocromil Sodium	39
Salbutamol	39
Theophylline	41
5 Hyperosmolar Histamine Release from Human Lung Mast Cells: Its Relevance to Exercise-Induced Asthma	43
Introduction	43
Mannitol-Induced Histamine Release	45
Basophils	45
Lung Mast Cells	46
Increased Extracellular Osmolarity and Histamine Release ..	49
6 Newly Generated Mediators from Human Lung Mast Cells	55
Mediator Release from Human Dispersed Lung Mast Cells ..	55
Mediator Release from Human Bronchoalveolar Cells	57
Newly Generated Mediators of Immediate Hypersensitivity ..	61
Prostaglandins and Thromboxanes	62
Prostaglandin D ₂	63
Prostaglandin F _{2α}	63
Prostaglandin E ₂	64
Prostacyclin (PGI ₂)	64
Slow Reacting Substances and the Leukotrienes	64
SRS-A Production	65
Biological Effects	66
Platelet Activating Factor	67
7 Bronchoalveolar Mast Cells and Asthma	73
Extrinsic Asthma	74
Intrinsic Asthma	78
Effect of Corticosteroids	81
Subject Index	83