

CONTENTS

SECTION I

MEASUREMENT OF EPINEPHRINE, NOREPINEPHRINE AND RELATED COMPOUNDS

Bioassay procedures. J. H. GADDUM.....	241
<i>Discussion</i> : Points to be considered in running chromatograms of tissue extracts. MARTHE VOGT.....	249
Survey of chemical and physical methods for measuring catecholamines. SIDNEY UDEFRIEND.....	252
Fluorescence and its measurement. ROBERT L. BOWMAN.....	256
The development and applications of the trihydroxyindole method for catecholamines. U. S. VON EULER.....	262
Techniques to improve the specificity of the trihydroxyindole procedure. GERALD COHEN.....	269
Estimation of epinephrine and norepinephrine concentrations in human plasma by the trihydroxyindole method. HENRY L. PRICE.....	273
A simple technique involving solvent extraction for the estimation of norepinephrine and epinephrine in tissues. PARKHURST A. SHORE.....	276
The fluorimetric estimation of catechol compounds by the ethylenediamine condensation method. H. WEIL-MALHERBE.....	278
Suitability of the ethylenediamine method of Weil-Malherbe and Bone and modifications for quantitating plasma pressor amines. WILLIAM MUIR MANGER.....	289
Some spectrophotofluorimetric observations on blood and urine catecholamine assays. J. RICHARD CROUT.....	296
Detection and assay of dopamine. ARVID CARLSSON.....	300

SECTION II

BIOSYNTHESIS OF CATECHOLAMINES

The development of current concepts of catecholamine formation. H. BLASCHKO.....	307
Role of L-dopa decarboxylase in the biosynthesis of catecholamines in nervous tissue and the adrenal medulla. P. HOLTZ.....	317
Studies on inhibition of L-dopa decarboxylase <i>in vitro</i> and <i>in vivo</i> . W. G. CLARK.....	330
Biosynthesis of adrenaline and noradrenaline. NORMAN KIRSHNER.....	350
Catecholamine formation in intact tissues. LEMUEL C. LEEPER.....	358
The storage and release of catecholamines. P. HAGEN.....	361
Catecholamine metabolism in patients with pheochromocytoma. ALBERT SJOERDSMA.....	374

SECTION III

DISPOSITION OF CATECHOLAMINES

Possible mechanisms for the termination of the physiological actions of catecholamines. GEORGE B. KOELLE.....	381
The role of amine oxidases in the destruction of catecholamines. E. A. ZELLER.....	387



Studies on the formation of 3-methoxy-4-hydroxy-D-mandelic acid, a urinary metabolite of norepinephrine and epinephrine. MARVIN D. ARMSTRONG AND ARMAND McMILLAN.....	394
The metabolism of catecholamines <i>in vivo</i> and <i>in vitro</i> . JULIUS AXELROD..	402
Excretion and metabolism of epinephrine. FRED ELMADJIAN.....	409
Metabolic products of adrenaline and noradrenaline in human urine. McC. GOODALL.....	416

SECTION IV

ACTIONS OF EPINEPHRINE AND NOREPINEPHRINE AT CELLULAR AND SUBCELLULAR SITES

The receptors for epinephrine and norepinephrine (adrenergic receptors). ROBERT F. FURCHGOTT.....	429
<i>Discussion:</i> The receptors for epinephrine and norepinephrine. R. P. AHLQUIST.....	441
Blockade of the actions of adrenaline and noradrenaline. MARK NICKERSON..	443
<i>Discussion:</i> Some aspects of blockade of inhibitory adrenergic receptors or adrenoceptive sites. I. H. SLATER AND C. E. POWELL.....	462
Action of epinephrine and norepinephrine in broken cell preparations. T. W. RALL AND E. W. SUTHERLAND, JR.....	464
<i>Discussion:</i> Actions of serotonin and epinephrine on intact and broken cell preparations from the liver fluke, <i>Fasciola hepatica</i> . TAG E. MANSOUR..	465
<i>Discussion:</i> The effect of sympathomimetic amines on phosphorylase activity of the isolated rat heart. NIELS HAUGAARD, WALTHER R. KUKOVETZ AND MARILYN E. HESS.....	466
Relation of biochemical effects of epinephrine to its muscular effects. SYDNEY ELLIS.....	469

SECTION V

CENTRAL ACTIONS OF CATECHOLAMINES

Catecholamines in brain. MARTHE VOGT.....	483
The occurrence, distribution and physiological role of catecholamines in the nervous system. ARVID CARLSSON.....	490
The effects of catecholamines on the central nervous system. ALAN B. ROTHBALLER.....	494
Interaction of drugs with norepinephrine in the brain. BERNARD B. BRODIE, SYDNEY SPECTOR AND PARKHURST A. SHORE.....	548
<i>Discussion:</i> Central actions of catecholamines. SEYMOUR S. KETY.....	565