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VASCULAR SMOOTH MUSCLE

Volume Editors:
David F. Bohr, M.D.
Andrew P. Somlyo, M.D.
Harvey V. Sparks, Jr., M.D.

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Vascular Smooth Muscle provides the physiologist, pharmacologist, biochemist and biophysicist with a comprehensive review of the structure, chemistry and function of that contractile system of the blood vessel wall.

It is an essential sourcebook for research workers, graduate students, teachers, and clinicians who need basic information regarding:
- the mechanism for contraction and relaxation of vascular smooth muscle
- the physiological regulation systems for contraction and relaxation of vascular smooth muscle
- the architecture, ultrastructure and morphogenesis of the blood vessel wall
- current understanding of abnormalities that develop in vascular smooth muscle function.

The 21 chapters are organized into six sections that deal with vascular smooth muscle from the following perspectives:

- Structure
  The relationship of the smooth muscle wall to the architecture of the blood vessel wall, the ultrastructure of the individual cell, and the morphogenesis of vascular smooth muscle

- Biochemistry
  Pioneering new work on the contractile and regulatory protein, the chemical functions of the subcellular particles, and the energy metabolism of the cell

- Electrolytes and Electrophysiology
  Electrolyte content and fluxes in vascular smooth muscle, and how these influence the membrane and action potentials of the cell.
  The all-important role of calcium in excitation-contraction coupling is presented.

- Muscle Mechanics
  Contractile mechanics of the individual cell and of the vessel wall as a whole, and the circulatory correlations of compliance, resistance and capacitance of the vascular tree

- Phylogenetic Variations
  The epilogue relates smooth muscles to other contractile systems.

Ordering Information
VASCULAR SMOOTH MUSCLE (ISBN: 0-683-00606-1), 1980, 694 pages, 331 figures, $95.00

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FIG. 29. Diagram illustrating behavior of series-coupled myogenic effectors. Upper panel shows consecutive vascular segments. Lower panel illustrates pressure gradient in control state and at reduced pressure. 1, control; 2, after 20% arterial pressure reduction; 3, after 40% arterial pressure reduction. For purposes of illustration, the pressure gradient is taken to be more nearly linear than is the case in the arteriolar network. [From Lalone and Johnson, unpublished data.]