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Nota di contenuto	CONTENTS; FOREWORD ; ACKNOWLEDGEMENTS ; DEDICATION ; List of Contributors ; ABOUT THE AUTHORS ; The Flagellar Mechanics of Spermatozoa and its Regulation ; INTRODUCTION; 1. STRUCTURE, BIOCHEMICAL COMPOSITION AND BUILDING OF AN AXONEME; 1-1. Structure; 1-2. Biochemical Composition; 1-3. The Structural and Biochemical Complexity of the Flagellar Axoneme; 1-4. The Building of an Axoneme; 2. BIOPHYSICAL PARAMETERS OF BEATING FLAGELLA THAT GOVERN SPERM MOTILITY; 3. OPERATION OF A FLAGELLAR MICROMOTOR; 3-1. Cilia and Flagella Use Similar Elements for Their Functioning; 3-2. Notion of Sliding 3-3. Bending Engendered by the Sliding3-4. Regulation Responsible of Alternative Movement; 3-5. Enzymological and Structural Data on the Flagellar Micro-Motor; 3-6. Need for a Resistance to Sliding; 4. OPERATIONAL MODELS; 4-1. Presentation of the Main Models; 4-2. Wave Propagation; 4-2-1. Curvature-controlled Model; 4-2-2. Sliding-controlled Switching Model; 4-3. Predictions on the Mechanism for Regulation of Waves and Its Consequences; 5. INTERNAL VERSUS EXTERNAL REGULATION OF AXONEMAL ACTIVITY ; 5-1. Internal Regulation; 5-2. Regulatory Complexes in the Axoneme; 5-3. External Regulation 5-4. Initiation of Flagella Activity: Biochemical Aspects5-5. Mechanisms Underlying Motility Maturation and Activation Events; 5-6. Initiation of

Flagella Activity: Phenomenological Aspects; 6. ENERGETIC ASPECTS; 6-1. Source and use of Energy: Biochemical Aspects; 6-2. Force, Power and Energy in the Flagellum: Mechanical Aspects; 7. EVOLUTIONARY CONSIDERATIONS ON THE AXONEMAL ORGANELLE AND ON THE SPERM GUIDANCE MECHANISMS; 8. CONCLUSIONS ABOUT SPERM MOTILITY AND ITS ACTIVATION; CONFLICT OF INTEREST; ACKNOWLEDGEMENTS; NOTIFICATION; REFERENCES; Sea Urchin Sperm Chemotaxis ; 1. INTRODUCTION

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FEATURES OF ASCIDIAN SPERM CHEMOTAXIS SPECIFICITY OF ASCIDIAN SPERM CHEMOTAXIS; SIGNALING OF SPERM CHEMOTAXIS; Sperm Attractants; Receptor of Sperm Attractants; Species Specificity of Sperm Chemotaxis Revisited: Discussion on the Molecular Basis of Specificity; Sperm Attractants Induce Ca^{2+} Bursts in the Spermatozoa; CONTROL OF SPERM FLAGELLAR MOVEMENT DURING CHEMOTAXIS; $[Ca^{2+}]_i$ Controls Sperm Flagellar Movement; Molecular Components of the Axonemes in Ascidian Sperm; Calaxin is a Ca^{2+} -sensor Protein of Outer Arm Dynein

Calaxin Drives Sperm Chemotaxis by Propagating Flagellar Asymmetric Waveform
