

Heide Schatten *Editor*

The Cytoskeleton in Health and Disease

 Springer

Chapter 6

Cytoskeletal Elements and the Reproductive Success in Animals

Alessandra Gallo and Elisabetta Tosti

Abbreviations/Acronyms

| | |
|------|----------------------------|
| AR | Acrosome reaction |
| CG | Cortical granules |
| GV | Germinal vesicle |
| GVBD | Germinal vesicle breakdown |
| MI | Metaphase I |
| MII | Metaphase II |
| ZP | Zona pellucida |

Introduction

In animals, sexual reproduction is the biological process by which a new individual is generated through the fusion of the gametes, the spermatozoon and oocyte, that are formed during gametogenesis which in turn is underlined by meiosis, the peculiar process of cell division that provides haploid cells ready for fertilization. A correct maturation and reciprocal activation of gametes are pre-requisites for fertilization and, although their temporal and spatial sequences are not yet fully clarified, they involve numerous cellular structures, molecules, ions and metabolic pathways.

In the cell, the shape and structure are due to the cytoskeleton, a complex set of structures composed of microtubules, microfilaments and intermediate filaments

A. Gallo • E. Tosti (✉)

Department of Biology and Evolution of Marine Organisms, Stazione Zoologica Anton Dohrn, Villa Comunale, 80121 Naples, Italy
e-mail: alessandra.gallo@szn.it; tosti@szn.it

© Springer Science+Business Media New York 2015
H. Schatten (ed.), *The Cytoskeleton in Health and Disease*,
DOI 10.1007/978-1-4939-2904-7_6

147