eppendorf

EPPENDORF AWARD FOR YOUNG EUROPEAN INVESTIGATORS

Adel Al Jord
Paris, France

2023 Finalist

Elucidating the physical dialogue between cell compartments for female fertility

»Modern societies across the globe are threatened by an alarming decline of female fertility and increasingly depend on Assisted Reproductive Technologies (ART). A key challenge for understanding the causes of rising female infertility is to elucidate mechanisms governing the development of germ cells, named oocytes. Our recent research addressed this challenge using an interdisciplinary approach, bridging methods from cell, molecular, and evolutionary biology with computational and physical models. We revealed that oocytes deploy a biophysical mechanism, whereby active cytoskeletal components in the cytoplasm agitate the nucleus to regulate essential biomolecular reactions (RNA splicing) occurring in its interior. This newly found physical dialogue between the cytoplasm and the nucleus ensures the success of subsequent oocyte divisions that drive female fertility. The discovery of this mechanism, which conditions optimal oocyte development for fertilization, is expected to guide future frameworks of ART to enhance fertility. Moreover, this finding has far-reaching implications for human health beyond fertility as we suspect this same physical dialogue, when distorted, to promote life-threatening diseases like cancer, neurodegeneration, and viral infections.«

Dr. Adel Al Jord
Fondation du Collège de France Research Fellow
Oocyte Mechanics & Morphogenesis Laboratory
Center for Interdisciplinary Research in Biology
Collège de France, 11 Place Marcelin Berthelot
75005 Paris - France
E-Mail: adel.aljord@college-de-france.fr

Read more about our Award finalist Dr. Adel Al Jord

www.eppendorf.com/award

The Eppendorf Award is presented in partnership with

nature