Mechanical and genetics basis of cellularization and serosal window closure in Tribolium castaneum

Vazquez Faci, T.

Propositions

1. The cellular shape during the early development of insects is highly influenced by mechanical factors (Chapter 2).

2. The fact that cell-cell interactions form Voronoi tessellations shows that embryo development can be modeled in a simple and elegant way (Chapter 2).

3. Innexin 7 protein is important to form the cell during the last part of cellularization (Chapter 3).

4. The trimer Laminin α1,2, β, γ of *Tribolium castaneum* has a key role in the serosal window closure (Chapter 4).

5. During development there are physical and chemical factors acting at the same time.

6. *Tribolium castaneum* should have a bigger role in the study of insect development than *Drosophila melanogaster.*

7. Although *Tribolium castaneum* is a good model to study insect development, there is little knowledge about its signaling pathways.

8. The fact that there are many histological approaches to visualize *Tribolium castaneum* embryos but limited availability of in vivo methods, reflects the bottlenecks to study living organisms using microscopy.

9. Science is objective *per se* but scientists are not.

10. All vaccines should be free and mandatory for everyone to eradicate as many diseases as possible.

11. In science it is common to teach that the disciplines as clearly differentiated, but in reality the separation is blurred.