

## COMMENTS

In this manuscript by Papadopulos-Elopulos the cyclic nature of charge exchange between actin and myosin, regulated by the oxidation and reduction of SH moieties, is discussed within the context of mitotic control. There is a lucid presentation and documentation of evidence which serves as a realistic foundation for postulating that the actin-myosin system and its redox state is a key factor in regulating proliferation. There is a realistic basis for the proposed relationships between modifications in the redox state of the actin-myosin system and other key biological processes (e.g. transport, muscle function, metabolism...). Most important in this article, there is a clear integration of older and recent data as well as "classical" and "contemporary" concepts. There is no doubt that the model proposed by Papadopulos-Elopulos can serve as a basis for further experimental evaluation of the involvement of periodic charge exchanges between actin and myosin and the control of major biological processes. As such, this is a functional model and one which should be published in Journal of Theoretical Biology.

### RECOMMENDATION:

- send to press as is
- send to press after revision
- send back to referees after revision
- reject

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