



SDI Review Form 1.6

Journal Name:	International Journal of Biochemistry Research & Review
Manuscript Number:	Ms_IJBCRR_34643
Title of the Manuscript:	THE PHOSPHOCREATINE-ATP ENERGY SHUTTLE AND MUSCLE ACTION: MISCONCEPTIONS, OVERSIGHTS AND INSIGHTS
Type of the Article	Opinion Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)



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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	ATP and PC have a key role in metabolic processes. The a equilibrium between ATP-PC is defined by authors as energy shuttle optimizing energy utilization and being a part of signal transduction necessary for muscle contraction. The authors highlight thermodynamic analysis of hydrolytic processes regarding PC and ATP and revealed that PC possesses more energy than ATP, concluding that PC is able to function as an energy reserve. The manuscript pointed an important issue: how PC can accumulate during periods of rest as energy molecule PC is meant to serve as a temporary and immediate store of energy. During muscle contraction nervous impulses and Ca^{2+} flux send a signal that lead a reduction of resting ATP, signal necessary for initiating catabolic ATP synthesis, ATP synthesis from PC, ATP release from catabolism and muscle action. PC does not depend on myosin so muscle action is not directly dependent by PC	I fully agree with this treatment, which is the same as I have presented. I hope the additional material now included in the revision offers further clarification.
Minor REVISION comments	The article is well written. A schematic figure of muscle contraction associated with ATP-PC balance should be appreciated.	Thank you! I have addressed only the physico-chemical issues involved: regrettably, a figure of muscle action would be beyond my expertise. However, additional discussion material is now added in the revision. The references cited (particularly revised ref. no. 10) provide the necessary schematic diagrams.



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<u>Optional/General</u> comments	If the authors could perform functional experiments on animal of different ages or after treadmill exercise, they could calculate, for each sample, a ratio between CK enzymatic levels and ATP-PC levels revealing a new parameter for muscle energy utilization. These data could reveal the catabolic processes of muscle tissues and could associate PC energy with slow or fast muscle fibres.	Interesting suggestions for future work, but again beyond the scope of the present paper!
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