

# ESPS Peer-review Report

**Name of Journal:** World Journal of Biological Chemistry

**ESPS Manuscript NO:** 8668

**Title:** Critical Role of Bicarbonate and Bicarbonate Transporters in Cardiac Function

**Reviewer code:** 02620463

**Science editor:** Qi, Yuan

**Date sent for review:** 2014-01-02 17:28

**Date reviewed:** 2014-01-15 06:14

CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
<input type="checkbox"/> Grade A (Excellent)	<input type="checkbox"/> Grade A: Priority Publishing	Google Search:	<input checked="" type="checkbox"/> Accept
<input checked="" type="checkbox"/> Grade B (Very good)	<input checked="" type="checkbox"/> Grade B: minor language polishing	<input type="checkbox"/> Existed	<input type="checkbox"/> High priority for publication
<input type="checkbox"/> Grade C (Good)	<input type="checkbox"/> Grade C: a great deal of language polishing	<input type="checkbox"/> No records	<input type="checkbox"/> Rejection
<input type="checkbox"/> Grade D (Fair)	<input type="checkbox"/> Grade D: rejected	BPG Search:	<input type="checkbox"/> Minor revision
<input type="checkbox"/> Grade E (Poor)		<input type="checkbox"/> Existed	<input type="checkbox"/> Major revision
		<input type="checkbox"/> No records	

## COMMENTS TO AUTHORS

The authors in the presented manuscript entitled “Critical Role of Bicarbonate and Bicarbonate Transporters in Cardiac Function” review current literature along with their own experimental data that indicate important physiological roles of CBE exchangers and NBC cotransporters of the SLC4A and SLC26A families in the regulation of cardiac functions. The authors argue that two major ion transporters (the exchanger Slc4a3 and the cotransporter Slc4a4, respectively) that are expressed in mouse heart play important roles in proper regulation of cardiac muscle functions. Furthermore, they also provide experimental evidence, which is in agreement with previous observations published by Fulop et al. 2003, that the HCO<sub>3</sub><sup>-</sup> homeostasis may regulate cardiomyocyte contractility without detectable changes in intracellular Ca<sup>2+</sup> concentrations. In conclusion, this mini review will provide potential readers with current information regarding intriguing role of bicarbonate and its transporters in the modulation of heart function. Therefore, it will be a valuable source of succinct information for readers in this fascinated scientific field. Minor suggestion: - List of abbreviations (in addition to their definition in text) should be included in the revised manuscript. - Some abbreviations are not defined in text when used for the first time (for example on the page 13 for LTCC). - Many sentences throughout the manuscript are extremely long. They should be broken into two shorter sentences that are easier to follow. - In the Figure legends the authors should provide brief information regarding statistical method used to evaluate experiments.

**ESPS Peer-review Report**
**Name of Journal:** World Journal of Biological Chemistry

**ESPS Manuscript NO:** 8668

**Title:** Critical Role of Bicarbonate and Bicarbonate Transporters in Cardiac Function

**Reviewer code:** 02621043

**Science editor:** Qi, Yuan

**Date sent for review:** 2014-01-02 17:28

**Date reviewed:** 2014-01-15 08:06

CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
<input checked="" type="checkbox"/> Grade A (Excellent)	<input checked="" type="checkbox"/> Grade A: Priority Publishing	Google Search:	<input checked="" type="checkbox"/> Accept
<input type="checkbox"/> Grade B (Very good)	<input type="checkbox"/> Grade B: minor language polishing	<input type="checkbox"/> Existed	<input type="checkbox"/> High priority for publication
<input type="checkbox"/> Grade C (Good)	<input type="checkbox"/> Grade C: a great deal of	<input type="checkbox"/> No records	<input type="checkbox"/> Rejection
<input type="checkbox"/> Grade D (Fair)	language polishing	BPG Search:	<input type="checkbox"/> Minor revision
<input type="checkbox"/> Grade E (Poor)	<input type="checkbox"/> Grade D: rejected	<input type="checkbox"/> Existed	<input type="checkbox"/> Major revision
		<input type="checkbox"/> No records	

**COMMENTS TO AUTHORS**

This is a critical review of the literature on the role of bicarbonate anion and various bicarbonate-related transporter proteins in cardiac function. Bicarbonate acts as a pH regulator and its transport across the cell plasma membrane is coupled with other ions that undergo co- or counter-transport, either electrogenically or electroneutrally, often coupled with water transport since some ions are transported in a hydrated form. Thus, bicarbonate mediates essential cellular, in particular cardiac, functions, such as ionic homeostasis, osmosis, pH, transmembrane potential, cell shape and volume, contractility etc., and a review summarizing the current knowledge on this important ion is timely and useful. This knowledge is critical not only from the viewpoint of basic research but also in many clinical settings where artificial fluids buffered by bicarbonate or other buffers are used in perfusion or other procedures. The authors are experts and have made significant contributions in the field. To the opinion of this reviewer, the manuscript is very well written and does not need any revision.

**ESPS Peer-review Report**
**Name of Journal:** World Journal of Biological Chemistry

**ESPS Manuscript NO:** 8668

**Title:** Critical Role of Bicarbonate and Bicarbonate Transporters in Cardiac Function

**Reviewer code:** 02617544

**Science editor:** Qi, Yuan

**Date sent for review:** 2014-01-02 17:28

**Date reviewed:** 2014-01-21 05:04

CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
<input type="checkbox"/> Grade A (Excellent)	<input checked="" type="checkbox"/> Grade A: Priority Publishing	Google Search:	<input checked="" type="checkbox"/> Accept
<input checked="" type="checkbox"/> Grade B (Very good)	<input type="checkbox"/> Grade B: minor language polishing	<input type="checkbox"/> Existed	<input type="checkbox"/> High priority for publication
<input type="checkbox"/> Grade C (Good)	<input type="checkbox"/> Grade C: a great deal of	<input type="checkbox"/> No records	<input type="checkbox"/> Rejection
<input type="checkbox"/> Grade D (Fair)	language polishing	BPG Search:	<input type="checkbox"/> Minor revision
<input type="checkbox"/> Grade E (Poor)	<input type="checkbox"/> Grade D: rejected	<input type="checkbox"/> Existed	<input type="checkbox"/> Major revision
		<input type="checkbox"/> No records	

**COMMENTS TO AUTHORS**

This is a very clear and well-written review. The manuscript is therefore acceptable without modifications.