

ESPS Peer-review Report

Name of Journal: World Journal of Pharmacology

ESPS Manuscript NO: 4025

Title: Roles of cholinergic receptors during attentional modulation of cue detection

Reviewer code: 00504909

Science editor: Zhai, Huan-Huan

Date sent for review: 2013-06-12 13:57

Date reviewed: 2013-06-14 05:15

CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
<input type="checkbox"/> Grade A (Excellent)	<input checked="" type="checkbox"/> Grade A: Priority Publishing	Google Search:	<input 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 checked="" 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)		BPG Search:	<input checked="" type="checkbox"/> Minor revision
<input type="checkbox"/> Grade E (Poor)	<input type="checkbox"/> Grade D: rejected	<input type="checkbox"/> Existed	
		<input type="checkbox"/> No records	<input type="checkbox"/> Major revision

COMMENTS TO AUTHORS

This is a well-written manuscript detailing with the roles of cholinergic receptors during attentional modulation of cue detection. In my opinion, two sections should be added to make the review clearer and more comprehensive. First the author should describe the proposed mechanisms of altered cholinergic transmission in Alzheimer's disease models, with particular focus on the link between Abeta oligomers and specific AchR (alpha 7 and alpha4beta2) to induce synaptic pathology. This would provide a rationale to explain the beneficial effects of ligands acting at specific subtypes of AChR in AD models. Also a general section on the clinical development of cholinergic drugs in cognitive disorders should be added.

ESPS Peer-review Report

Name of Journal: World Journal of Pharmacology

ESPS Manuscript NO: 4025

Title: Roles of cholinergic receptors during attentional modulation of cue detection

Reviewer code: 00505175

Science editor: Zhai, Huan-Huan

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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 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 checked="" 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

Nicely written

ESPS Peer-review Report

Name of Journal: World Journal of Pharmacology

ESPS Manuscript NO: 4025

Title: Roles of cholinergic receptors during attentional modulation of cue detection

Reviewer code: 00503471

Science editor: Zhai, Huan-Huan

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CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
<input type="checkbox"/> Grade A (Excellent)	<input type="checkbox"/> Grade A: Priority Publishing	Google Search:	<input 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 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

This is an interesting review on the functions of ACh in relation to cognitive/attentional functions. I do have some comments the author needs to address. The most important suggestion is to make more explicitly clear that this paper is mainly related to the attentional functions of the ACh system. First paragraph: "...often organized into anterior and posterior systems..." It is not clear to me to what the author refers to. I would suggest making more clear what these anterior/posterior systems are. In the same sentence the authors refer to 'the actions' of ACh. Does he refer to "selection and subsequent processing of stimuli"? The author mentions that there are numerous theories. Indeed, there are also theories that ACh is critical for learning and memory (Bartus et al). So, the author should make clearer to what specific functions and regions he refers to in the first paragraph. With respect to cortical regions attentional functions I would like to refer to some recent review of Klinkenberg et al. In this review on ACh and attention it is shown that not all cortical regions are implicated in attentional functions. With respect to the role of the M1 receptor and cognitive functions/attention, I again would like to refer to a recent publication of Klinkenberg et al where they compared scopolamine and biperiden (M1 antagonist). This study shows no clear effect on attention, but mainly an effect on short-term memory (delayed matching task). So, I don't think that it is very clear that the M1 receptor is involved in attention. The author states that: "Collectively, the available evidence suggests that decreasing cholinergic receptor activity at multiple subtypes can have a synergistic negative effect on attentional performance and that agonism, increasing the activity of $\alpha 4\beta 2$ nicotinic receptors, can overcome attentional deficits following muscarinic receptor blockade." I am not so sure whether this is a valid statement. There are many drugs that can reverse muscarinic blockade-induced deficits. So, the effects may not be specific or these data suggest that



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multiple neurotransmitters interact in a functional manner. Furthermore, these effects are not only observed for attentional functions (you have to consider all findings in the literature). Although the author may want to focus on attentional functions, there are many more aspects that are just left out. One way to get around this is to state explicitly that it is appreciated that ACh has many functions, but that the present mini-review only describes the attentional aspects. The alpha-7 receptor has also been implicated in attention (review by Leiser et al). I think this receptor should be mentioned when mentioning nicotinic receptors (much more is described for muscarinic receptors in this manuscript). There is even an alpha-7 compound in phase III of clinical testing, which may reflect the relevance of this target. In the summary and conclusions it is mentioned that allosteric modulators could be very beneficial for treatment. This only very briefly described in the body of the text. I think some more explanation should be given in the main text in order to give this statement in the summary and conclusions more body.