



Estrogen receptor alpha as a key target of organochlorines to promote angiogenesis

Submitted by Emmanuel Lemoine on Wed, 12/11/2013 - 17:07

Titre	Estrogen receptor alpha as a key target of organochlorines to promote angiogenesis
Type de publication	Article de revue
Auteur	Clere, Nicolas [1], Lauret, Emilie [2], Malthièry, Yves [3], Andriantsitohaina, Ramaroson [4], Faure, Sébastien [5]
Editeur	Springer Verlag
Type	Article scientifique dans une revue à comité de lecture
Année	2012
Langue	Anglais
Date	2012/12
Numéro	4
Pagination	745 - 760
Volume	15
Titre de la revue	Angiogenesis
ISSN	0969-6970, 1573-7209
Mots-clés	Biomedicine [6], Cancer [7], Cardiology [8], Cell [9], Chlordecone [10], Endothelial [11], Estrogen [12], Lindane [13], Oncology [14], Ophthalmology [15], Pro-angiogenic [16]
Résumé en anglais	<p>Epidemiological studies report that exposure to pesticides like chlordecone and lindane increases risk of cancer. They may act as endocrine disruptors via the activation of estrogen receptor α (ERα). Carcinogenesis involved angiogenesis and no available data regarding these organochlorines have been reported. The present study aimed at investigating the effects of lindane and chlordecone on cellular processes leading to angiogenesis through an involvement of ERα. Angiogenesis has been analyzed both in vitro, on human endothelial cells, and in vivo by quantifying neovascularization with the use of ECMgel® plug in mice. Both pesticides increased endothelial cell proliferation, migration and MMP2 activity. These toxics potentiated cell adhesion by enhancing FAK phosphorylation and stress fibers. The two organochlorines increased nitric oxide production via an enhancement of eNOS activity without modification of oxidative stress. Evidence has been provided that the two toxins increased in vivo neovascularization. Most interestingly, all the above processes were either partially or completely prevented after silencing of ERα. Altogether, these data highlight that organochlorines modulate cellular angiogenic processes through activation of ERα. This study further reinforces the harmful effects of these pesticides in carcinogenesis, particularly in the modulation of angiogenesis, a critical step in tumor promotion, through ERα.</p>
URL de la notice	http://okina.univ-angers.fr/publications/ua251 [17]
DOI	10.1007/s10456-012-9288-7 [18]
Lien vers le document	http://dx.doi.org/10.1007/s10456-012-9288-7 [18]

Liens

- [1] <http://okina.univ-angers.fr/nicolas.clere/publications>
- [2] [http://okina.univ-angers.fr/publications?f\[author\]=680](http://okina.univ-angers.fr/publications?f[author]=680)
- [3] <http://okina.univ-angers.fr/yves.malthiery/publications>
- [4] <http://okina.univ-angers.fr/r.andrian/publications>
- [5] <http://okina.univ-angers.fr/sfaure/publications>
- [6] [http://okina.univ-angers.fr/publications?f\[keyword\]=1788](http://okina.univ-angers.fr/publications?f[keyword]=1788)
- [7] [http://okina.univ-angers.fr/publications?f\[keyword\]=1382](http://okina.univ-angers.fr/publications?f[keyword]=1382)
- [8] [http://okina.univ-angers.fr/publications?f\[keyword\]=1207](http://okina.univ-angers.fr/publications?f[keyword]=1207)
- [9] [http://okina.univ-angers.fr/publications?f\[keyword\]=1734](http://okina.univ-angers.fr/publications?f[keyword]=1734)
- [10] [http://okina.univ-angers.fr/publications?f\[keyword\]=1209](http://okina.univ-angers.fr/publications?f[keyword]=1209)
- [11] [http://okina.univ-angers.fr/publications?f\[keyword\]=1742](http://okina.univ-angers.fr/publications?f[keyword]=1742)
- [12] [http://okina.univ-angers.fr/publications?f\[keyword\]=1789](http://okina.univ-angers.fr/publications?f[keyword]=1789)
- [13] [http://okina.univ-angers.fr/publications?f\[keyword\]=1211](http://okina.univ-angers.fr/publications?f[keyword]=1211)
- [14] [http://okina.univ-angers.fr/publications?f\[keyword\]=153](http://okina.univ-angers.fr/publications?f[keyword]=153)
- [15] [http://okina.univ-angers.fr/publications?f\[keyword\]=1212](http://okina.univ-angers.fr/publications?f[keyword]=1212)
- [16] [http://okina.univ-angers.fr/publications?f\[keyword\]=1790](http://okina.univ-angers.fr/publications?f[keyword]=1790)
- [17] <http://okina.univ-angers.fr/publications/ua251>
- [18] <http://dx.doi.org/10.1007/s10456-012-9288-7>

Publié sur *Okina* (<http://okina.univ-angers.fr>)