



Corrigendum: Herbal medicines in Brazil: pharmacokinetic profile and potential herb-drug interactions

Andre L. D. A. Mazzari and Jose M. Prieto *

Pharmacognosy, School of Pharmacy, University College London, London, UK

*Correspondence: j.prieto@ucl.ac.uk

Edited by:

Adejuwon Adewale Adeneye, Lagos State University College of Medicine, Nigeria

Reviewed by:

Fang-Rong Chang, Kaohsiung Medical University, Taiwan

Eleni Skaltsa, National and Kapodistrian University of Athens, Greece

Keywords: herb-drug interactions, cytochrome P450, glutathione, glucuronidation, P-glycoprotein, polymorphism, Brazil, pharmacovigilance

A corrigendum on

Herbal medicines in Brazil: pharmacokinetic profile and potential herb-drug interactions

by Mazzari, A. L. D. A., and Prieto, J. M. (2014). *Front. Pharmacol.* 5:162. doi: 10.3389/fphar.2014.00162

We noticed that some symbols were lacking in Table 5 and some of the Plant Family names were not currently accepted.

We hereby present the **Tables 1–9** with all symbols and botanical names re-checked.

Apologies for any inconvenience this may have caused.

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Received: 07 November 2014; accepted: 27 January 2015; published online: 10 March 2015.

Citation: Mazzari ALDA and Prieto JM (2015) Corrigendum: Herbal medicines in Brazil: pharmacokinetic profile and potential herb-drug interactions. *Front. Pharmacol.* 6:23. doi: 10.3389/fphar.2015.00023

This article was submitted to *Ethnopharmacology*, a section of the journal *Frontiers in Pharmacology*.

Copyright © 2015 Mazzari and Prieto. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) or licensor are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.

Table 1 | Medicinal plant species listed in RENISUS with reported effects of on CYP1A2.

Plant species/Family	Effects on CYP1A2	References
<i>Allium sativum</i> (Amaryllidaceae)	+	Le Bon et al., 2003
<i>Curcuma longa</i> (Zingiberaceae)	+	Thapliyal et al., 2002
<i>Eucalyptus globulus</i> (Myrtaceae)	–	Unger and Frank, 2004
<i>Glycine max</i> (Leguminosae)	–	Shon and Nam, 2004
<i>Harpagophytum procumbens</i> (Pedaliaceae)	NE, –	Unger and Frank, 2004; Modarai et al., 2011
<i>Mentha piperita</i> (Lamiaceae)	–	Unger and Frank, 2004
<i>Phyllanthus amarus</i> (Phyllanthaceae)	–	Hari Kumar and Kuttan, 2006
<i>Punica granatum</i> (Lythraceae)	–	Faria et al., 2007a
<i>Trifolium pratense</i> (Leguminosae)	–	Unger and Frank, 2004

+, Enzyme induction; –, Enzyme inhibition; NE, No Effect.

Table 2 | Medicinal plant species listed in RENISUS with reported effects of on CYP2C9.

Plant species/Family	Effects on CYP2C9	References
<i>Allium sativum</i> (Amaryllidaceae)	–, +	Foster et al., 2001; Ho et al., 2010
<i>Eucalyptus globulus</i> (Myrtaceae)	–	Unger and Frank, 2004
<i>Harpagophytum procumbens</i> (Pedaliaceae)	NE, –	Modarai et al., 2011
<i>Mentha piperita</i> (Lamiaceae)	–	Unger and Frank, 2004
<i>Punica granatum</i> (Lythraceae)	–	Hanley et al., 2012
<i>Trifolium pratense</i> (Leguminosae)	–	Unger and Frank, 2004
<i>Zingiber officinale</i> (Zingiberaceae)	–	Kimura et al., 2010

+, Enzyme induction; –, Enzyme inhibition; NE, No Effect.

Table 3 | Medicinal plant species listed in RENISUS with reported effects of on CYP2C19.

Plant species/Family	Effects on CYP2C19	References
<i>Allium sativum</i> (Amaryllidaceae)	–	Foster et al., 2001
<i>Eucalyptus globulus</i> (Myrtaceae)	–	Unger and Frank, 2004
<i>Harpagophytum procumbens</i> (Pedaliaceae)	NE	Modarai et al., 2011
<i>Mentha piperita</i> (Lamiaceae)	–	Unger and Frank, 2004
<i>Trifolium pratense</i> (Leguminosae)	–	Unger and Frank, 2004

+, Enzyme induction; –, Enzyme inhibition; NE, No Effect.

Table 4 | Medicinal plant species listed in RENISUS with reported effects of on CYP2D6.

Plant species/Family	Effects on CYP2D6	References
<i>Allium sativum</i> (Amaryllidaceae)	NE	Markowitz et al., 2003
<i>Eucalyptus globulus</i> (Myrtaceae)	–	Unger and Frank, 2004
<i>Harpagophytum procumbens</i> (Pedaliaceae)	NE, –	Modarai et al., 2011
<i>Mentha piperita</i> (Lamiaceae)	–	Unger and Frank, 2004
<i>Phyllanthus amarus</i> (Phyllanthaceae)	–	Hari Kumar and Kuttan, 2006
<i>Punica granatum</i> (Lythraceae)	–	Usia et al., 2006
<i>Trifolium pratense</i> (Leguminosae)	–	Unger and Frank, 2004

+, Enzyme induction; –, Enzyme inhibition; NE, No Effect.

Table 5 | Medicinal plant species listed in RENISUS with reported effects of on CYP2E1.

Plant species/Family	Effects on CYP2E1	References
<i>Allium sativum</i> (Amaryllidaceae)	–	Le Bon et al., 2003
<i>Curcuma longa</i> (Zingiberaceae)	NE	Salama et al., 2013
<i>Glycine max</i> (Leguminosae)	NE	Shon and Nam, 2004
<i>Momordica charantia</i> (Cucurbitaceae)	–	Raza et al., 1996
<i>Phyllanthus amarus</i> (Phyllanthaceae)	–	Hari Kumar and Kuttan, 2006
<i>Phyllanthus urinaria</i> (Phyllanthaceae)	–	Shen et al., 2008
<i>Punica granatum</i> (Lythraceae)	–	Faria et al., 2007a

+, Enzyme induction; –, Enzyme inhibition; NE, No Effect.

Table 6 | Medicinal plant species listed in RENISUS with reported effects of on CYP3A.

Plant species/Family	Effects on CYP3A	References
<i>Allium sativum</i> (Amaryllidaceae)	NE, –(*/**/****)	Foster et al., 2001; Hajda et al., 2010
<i>Chamomilla recutita</i> (Compositae)	–(*)	Budzinski et al., 2000
<i>Curcuma longa</i> (Zingiberaceae)	NE(*)	Graber–Maier et al., 2010
<i>Eucalyptus globulus</i> (Myrtaceae)	–(*)	Unger and Frank, 2004
<i>Foeniculum vulgare</i> (Apiaceae)	–(*)	Subehan et al., 2006, 2007
<i>Harpagophytum procumbens</i> (Pedaliaceae)	NE, –(*)	Unger and Frank, 2004; Modarai et al., 2011
<i>Mentha piperita</i> (Lamiaceae)	–(*)	Unger and Frank, 2004
<i>Momordica charantia</i> (Cucurbitaceae)	–(*)	Raza et al., 1996
<i>Phyllanthus amarus</i> (Phyllanthaceae)	–(*/**/****)	Hari Kumar and Kuttan, 2006
<i>Punica granatum</i> (Lythraceae)	–(*/**/****)	Faria et al., 2007a
<i>Trifolium pratense</i> (Leguminosae)	–(*)	Budzinski et al., 2000
<i>Uncaria tomentosa</i> (Rubiaceae)	–(*)	Budzinski et al., 2000
<i>Zingiber officinale</i> (Zingiberaceae)	(*)	Kimura et al., 2010

*CYP3A4, **CYP3A5, ***CYP3A7 / +, Enzyme induction; –, Enzyme inhibition; NE, No Effect.

Table 7 | Medicinal plant species listed in RENISUS with reported effects of on glutathione levels.

Plant species/Family	Effects on glutathione levels	References
<i>Achillea millefolium</i> (Compositae)	+	Potrich et al., 2010
<i>Allium sativum</i> (Amaryllidaceae)	+	Ip and Lisk, 1997
<i>Aloe vera/Aloe barbadensis</i> (Xanthorrhoeaceae)	-,+	Kaithwas et al., 2011; Hegazy et al., 2012
<i>Anacardium occidentale</i> (Anacardiaceae)	+	Singh et al., 2004
<i>Baccharis trimera</i> (Compositae)	-	Nogueira et al., 2011
<i>Bauhinia forficata</i> (Leguminosae)	-	Damasceno et al., 2004
<i>Bauhinia variegata</i> (Leguminosae)	+	Raj Kapoor et al., 2006
<i>Calendula officinalis</i> (Compositae)	+	Preethi and Kuttan, 2009
<i>Chamomilla recutita</i> (Compositae)	+	Al-Hashem, 2010
<i>Croton cajucara</i> (Euphorbiaceae)	+	Rabelo et al., 2010
<i>Curcuma longa</i> (Zingiberaceae)	+	Rong et al., 2012
<i>Cynara scolymus</i> (Compositae)	+, NE	Miccadei et al., 2008
<i>Foeniculum vulgare</i> (Apiaceae)	+	Zhang et al., 2012
<i>Glycine max</i> (Leguminosae)	+	Barbosa et al., 2011
<i>Mentha pulegium</i> (Lamiaceae)	+	Alpsoy et al., 2011
<i>Mentha piperita</i> (Lamiaceae)	+	Sharma et al., 2007
<i>Mikania glomerata</i> (Asteraceae)	NE	Barbosa et al., 2012
<i>Momordica charantia</i> (Cucurbitaceae)	+	Raza et al., 1996; Raza et al., 2000
<i>Phyllanthus amarus</i> (Phyllanthaceae)	+	Kumar and Kuttan, 2004, 2005; Karuna et al., 2009; Maity et al., 2013
<i>Phyllanthus niruri</i> (Phyllanthaceae)	+	Bhattacharjee and Sil, 2006; Manjrekar et al., 2008
<i>Psidium guajava</i> (Myrtaceae)	+	Tandon et al., 2012
<i>Punica granatum</i> (Lythraceae)	+, -	Dassprakash et al., 2012; Faria et al., 2007b
<i>Ruta graveolens</i> (Rutaceae)	+	Ratheesh et al., 2011
<i>Zingiber officinale</i> (Zingiberaceae)	+, NE	Ajith et al., 2007

+, Enzyme induction; -, Enzyme inhibition; NE, No Effect.

Table 8 | Medicinal plant species listed in RENISUS with reported effects of on UGT levels.

Plant species/Family	Effects on UGT levels	References
<i>Allium sativum</i> (Amaryllidaceae)	+	Ip and Lisk, 1997
<i>Curcuma longa</i> (Zingiberaceae)	-	Naganuma et al., 2006

+, Enzyme induction; -, Enzyme inhibition; NE, No Effect.

Table 9 | Medicinal plant species listed in RENISUS with reported effects of on P-glycoprotein activity.

Plant species/Family	Effects on P-glycoprotein activity	References
<i>Achillea millefolium</i> (Compositae)	-	Haidara et al., 2006
<i>Allium sativum</i> (Amaryllidaceae)	+	Hajda et al., 2010
<i>Curcuma longa</i> (Zingiberaceae)	NE	Graber-Maier et al., 2010

+, Efflux increase; -, Efflux decrease.