

# Molecular identification of hymenopteran parasitoids of Australian agromyzids and related endosymbionts

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SUPPORTING INFORMATION Tables S1, S2 and S4

**Table S1.** PCR primers and amplification method used in this study.

**Table S2.** GenBank Accession Number of DNA sequences in this study.

**Table S4.** Additional COI sequence information for *Hemiptarsenus varicornis* obtained from the BOLD database.

**References**

**Table S1.** PCR primers and amplification method used in this study.

Species	Gene	Primer name	Primer sequence (5' to 3')	References
<i>Aprostocetus</i> sp.	5' COI	LepF	ATTCAACCAATCATAAAGATATTGG	Hebert <i>et al.</i> 2004
		LepR	TAAACTTCTGGATGTCCAAAAAATCA	Hebert <i>et al.</i> 2004
<i>Asecodes</i> sp.	5' COI	LepF	ATTCAACCAATCATAAAGATATTGG	Hebert <i>et al.</i> 2004
		LepR	TAAACTTCTGGATGTCCAAAAAATCA	Hebert <i>et al.</i> 2004
	3'COI	C1-J-2183	CAACATTTATTTTGATTTTTTGG	Simon <i>et al.</i> 1994
		TL2-N-3014	TCCATTGCACTAATCTGCCATATTA	Simon <i>et al.</i> 1994
<i>Chrysocharis pubicornis</i>	5' COI	LepF	ATTCAACCAATCATAAAGATATTGG	Hebert <i>et al.</i> 2004
		LepR	TAAACTTCTGGATGTCCAAAAAATCA	Hebert <i>et al.</i> 2004
<i>Closterocerus mirabilis</i>	5' COI	LepF	ATTCAACCAATCATAAAGATATTGG	Hebert <i>et al.</i> 2004
		LepR	TAAACTTCTGGATGTCCAAAAAATCA	Hebert <i>et al.</i> 2004
<i>Diglyphus isaea</i>	middle region COI	DI-CO1-F	ATTAGGGGCTCCAGATATAGC	In this study
		DI-CO1-R	CCAGTTAAACCCCTACTGTG	In this study
		COI2193	TTTTTTGGTCATCCAGAAGT	Sha <i>et al.</i> 2006
		COI2613	ATTGCAAATACTGCACCTAT	Sha <i>et al.</i> 2006
	ITS1	18sF1	TACACACCGCCCGTCGCTACTA	Sha <i>et al.</i> 2007
		5p8sB1d	ATGTGCGTTCRAAATGTCGATGTTCA	Sha <i>et al.</i> 2007
<i>Dacnusa areolaris</i>	5' COI	LepF	ATTCAACCAATCATAAAGATATTGG	Hebert <i>et al.</i> 2004
		LepR	TAAACTTCTGGATGTCCAAAAAATCA	Hebert <i>et al.</i> 2004
<i>Hemiptarsenus varicornis</i>	5' COI	LepF	ATTCAACCAATCATAAAGATATTGG	Hebert <i>et al.</i> 2004
		LepR	TAAACTTCTGGATGTCCAAAAAATCA	Hebert <i>et al.</i> 2004
<i>Neochrysocharis formosa</i>	5' COI	LepF	ATTCAACCAATCATAAAGATATTGG	Hebert <i>et al.</i> 2004
		LepR	TAAACTTCTGGATGTCCAAAAAATCA	Hebert <i>et al.</i> 2004
<i>Neochrysocharis okazakii</i>	3'COI	C1-J-2183	CAACATTTATTTTGATTTTTTGG	Simon <i>et al.</i> 1994
		TL2-N-3014	TCCATTGCACTAATCTGCCATATTA	Simon <i>et al.</i> 1994
	28S	28SF3633	TACCGTGAGGGAAAGTTGAAA	Adachi-Hagimori <i>et al.</i> 2011
		28SR4076	AGACTCCTTGGTCCGTGTTT	Adachi-Hagimori <i>et al.</i> 2011
<i>Opius</i> sp.1	5' COI	LepF	ATTCAACCAATCATAAAGATATTGG	Hebert <i>et al.</i> 2004
		LepR	TAAACTTCTGGATGTCCAAAAAATCA	Hebert <i>et al.</i> 2004
<i>Opius</i> sp.2	5' COI	LepF	ATTCAACCAATCATAAAGATATTGG	Hebert <i>et al.</i> 2004
		LepR	TAAACTTCTGGATGTCCAAAAAATCA	Hebert <i>et al.</i> 2004
<i>Opius cinerariae</i>	5' COI	LepF	ATTCAACCAATCATAAAGATATTGG	Hebert <i>et al.</i> 2004
		LepR	TAAACTTCTGGATGTCCAAAAAATCA	Hebert <i>et al.</i> 2004
<i>Trigonogastrella parasitica</i>	5' COI	LepF	ATTCAACCAATCATAAAGATATTGG	Hebert <i>et al.</i> 2004
		LepR	TAAACTTCTGGATGTCCAAAAAATCA	Hebert <i>et al.</i> 2004
<i>Zagrammosoma latilineatum</i>	5' COI	LepF	ATTCAACCAATCATAAAGATATTGG	Hebert <i>et al.</i> 2004
		LepR	TAAACTTCTGGATGTCCAAAAAATCA	Hebert <i>et al.</i> 2004
	3'COI	C1-J-2183	CAACATTTATTTTGATTTTTTGG	Simon <i>et al.</i> 1994
		TL2-N-3014	TCCATTGCACTAATCTGCCATATTA	Simon <i>et al.</i> 1994

**Table S2.** GenBank Accession Number of DNA sequences in this study.

<b>Species</b>	<b>Sequence Name</b>	<b>GenBank Accession Number</b>
<i>Aprostocetus</i> sp.	5' COI	ON858002–ON858003
<i>Asecodes</i> sp.	5' COI & 3' COI	ON936089–ON936094
<i>Chrysocharis pubicornis</i>	5' COI	ON834716–ON834721
<i>Closterocerus mirabilis</i>	5' COI	ON834693
<i>Diglyphus isaea</i>	COI (middle region)	ON834722–ON834724
	ITS1	ON853647–ON853648
<i>Dacnusa areolaris</i>	5' COI	ON834715
<i>Neochrysocharis formosa</i>	5' COI	ON848939
<i>Neochrysocharis okazakii</i>	3' COI	ON866892–ON866895
	28S	ON847370
<i>Trigonogastrella parasitica</i>	5' COI	OL960092–OL960094
<i>Hemiptarsenus varicornis</i>	5' COI	ON819630–ON819648
<i>Opius cinerariae</i>	5' COI	ON834694–ON834698
<i>Opius</i> sp. 1	5' COI	ON834725–ON834726
<i>Opius</i> sp. 2	5' COI	ON834727–ON834729
<i>Opius cinerariae</i>	5' COI	ON834694–ON834698
<i>Zagrammosoma latilineatum</i>	5' COI & 3' COI	ON866896–ON866899
<i>Rickettsia</i> sp.	16S rDNA	ON866524–ON866526
<i>Wolbachia</i>	<i>wsp</i>	ON866900–ON866906

**Table S4.** Additional COI sequence information for *Hemiptarsenus varicornis* obtained from the BOLD database.

<b>BOLD ID</b>	<b>Location</b>	<b>GPS</b>	<b>Date</b>	<b>COI haplotype</b>
GMAMG730-15	WA, Australia	-21.566, 117.026	2014.07	H.09
AUSBC313-12	SA, Australia	-33.979, 140.953	2011.12	H.11
HYAT417-11	TAS, Australia	-42.986, 147.317	2010.03	H.11
GMAMG832-15	WA, Australia	-21.566, 117.026	2017.07	H.11
GMAMS921-15	WA, Australia	-21.566, 117.026	2014.08	H.11
GMAMF266-15	WA, Australia	-21.566, 117.026	2014.07	H.16
GMAMP256-15	WA, Australia	-21.566, 117.026	2014.07	H.17
GMAMF285-15	WA, Australia	-21.566, 117.026	2014.07	H.20
GMAMI547-15	WA, Australia	-21.566, 117.026	2014.08	H.21
GMAMG916-15	WA, Australia	-21.566, 117.026	2014.07	H.22
GMAMF276-15	WA, Australia	-21.566, 117.026	2014.07	H.22
GMAMJ1109-15	WA, Australia	-21.566, 117.026	2014.09	H.22
GMAMO035-15	WA, Australia	-21.566, 117.026	2014.07	H.22
GMAMF259-15	WA, Australia	-21.566, 117.026	2014.07	H.23
GMAME393-15	WA, Australia	-21.566, 117.026	2014.07	H.24
HYQTB256-12	QLD, Australia	-19.283, 146.801	2011.11	H.25
AUSBC2060-12	SA, Australia	-33.979, 140.953	2011.12	H.26
AUSCL1767-12	SA, Australia	N.A.	2011.12	H.27
HYQTB085-11	QLD, Australia	-19.283, 146.801	2011.06	H.27
GMAMO037-15	WA, Australia	-21.566, 117.026	2014.07	H.28
GMAMF255-15	WA, Australia	-21.566, 117.026	2014.07	H.29
GMAMF270-15	WA, Australia	-21.566, 117.026	2014.07	H.30
HYQTB108-11	QLD, Australia	-19.381, 146.449	2011.07	H.31
GMAMG772-15	WA, Australia	-21.566, 117.026	2014.07	H.32
GMAMG795-15	WA, Australia	-21.566, 117.026	2014.07	H.33
GMAME063-15	WA, Australia	-21.566, 117.026	2014.07	H.34
ANBEE402-11	DongAnh, Vietnam	N.A.	1998.11	H.35
MAMTK272-12	Islamabad, Pakistan	33.686, 73.076	2012.04	H.36
MAMTO139-13	Islamabad, Pakistan	33.686, 73.076	2012.06	H.36
ANBEE400-11	Sabah, Malaysia	N.A.	1998.11	H.36
MAMTN123-13	Islamabad, Pakistan	33.686, 73.076	2012.05	H.37
PMNHE040-15	Islamabad, Pakistan	33.686, 73.076	2012.06	H.38

WA = Western Australia, SA =South Australia, TAS= Tasmania, QLD= Queensland

N.A. = GPS unknown

## References

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