PEPCK primers for bees/wasps (6/7/2004)

Forward Primers:

19.5 dF	5'-GGN GAY GAY ATI GCB TGG ATG-3'
G146F	5'-GAA CGG ATT CTT CGG TGT TGC-3'

Reverse Primers:

22.5 drc	5'-GAA CCA RTT RAC RTG RAA GAT C-3'
G147R	5'-GCG AGT TTA GCG TCC TCC ACT T-3'

PCR conditions:

19.5dF/22.5drc: 94^{o}C 45 sec, 55^{o}C 45 sec, 72^{o}C 60 sec (35 cycles)

G146F/G147R: 94^{o}C 45 sec, 55^{o}C 45 sec, 72^{o}C 60 sec (35 cycles)

Note: Leys et al. (2002) first used primers from Friedlander et al. 1996 (19.5dF/22.5drc) to generate preliminary sequences for a sample of xylcopine bees. Later they developed more specific primers (G146F/G147R) which worked on a broader sample of the taxa. We have had little experience with these primers but Leys et al. (2002) concluded that PEPCK was an excellent data set in their study.

For more information on PEPCK see:

Friedlander, T.P., J.C. Regier, C. Mitter, & D.L. Wagner (1996). A nuclear gene for higher level phylogenetics: Phosphoenolpyruvate carboxykinase tracks Mesozoic-age divergences within Lepidoptera (Insecta). Mol. Biol. Evol. 13:594-604.

Leys, R., S.J.B. Cooper, & M.P. Schwarz (2002). Molecular phylogeny and historical biogeography of the large carpenter bees, genus *Xylocopa* (Hymenoptera: Apidae). Biol. J. Linn. Soc. 77: 249-266.