

## Abd-A primers for ants and bees (11/29/2004)

### Primary primers (from Ward and Downie 2004)

AA1182F 5' –CCG GCG ATA TGA GTA CGA AAT TC – 3'  
Position: *Myrmica* 1182-1204 (Ward & Downie 2004)

AA1824R 5' –TAG AAY TGT GCC GCC GCT GCC AT – 3'  
Position: *Myrmica* 1824-1802 (Ward & Downie 2004)

*Myrmica* sequence refers to *Myrmica rubra* (GenBank accession no. AF332515)

### Additional primers (from Ward and Downie 2004)

AA1172F 5' – CAC ATC GGC ACC GGC GAT ATG AG – 3'  
Position: *Myrmica* 1172-1194 (Modified from de Menten et al. 2003)

AA1607F 5' – GCT GCT GTA GAC GCC GCT ACT GC – 3'  
Position: *Myrmica* 1607-1629 (Ward & Downie 2004)

AA1607F2 5' – GCA GCC GTC GAT GCT GCG ACC GC – 3'  
Position: *Myrmica* 1607-1629 (Ward & Downie 2004)

AA1743R2 5' – GG CGT AGC GCC GTT TTG ATG ATG – 3'  
Position: *Myrmica* 1743-1721 (Ward & Downie 2004)

AA1743R3 5' – GG YGT AGC KCC YTT YTG ATG ATG – 3'  
Position: *Myrmica* 1743-1721 (Ward & Downie 2004)

AA1881R 5' – GG TTG TTG GCA GGA TGT CAA AGG – 3'  
Position: *Myrmica* 1881-1859 (Modified from de Menten et al. 2003)

### Comments from Phil Ward (11/20/2004)

The Abd-A primers are customized for ants and will probably have to be modified for bees. Getting the Abd-A sequence for *Apis mellifera* was a bit of a challenge. I amplified it with two overlapping sets of primers

(1) AA1182F/AA1743R3 at 58°C annealing.

(2) AA1607F2/AA1881R with touchdown, 64°C to 60°C

AA1743R3 is GG YGT AGC KCC YTT YTG ATG ATG. It is just a more redundant version of AA1743R2.

AA1607F2 is GCA GCC GTC GAT GCT GCG ACC GC. This primer I customized for *Apis* because it was too divergent to match the ant primer 1607F.