

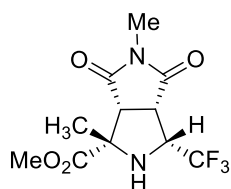
Anexo III

Colección de cromatogramas de HPLC

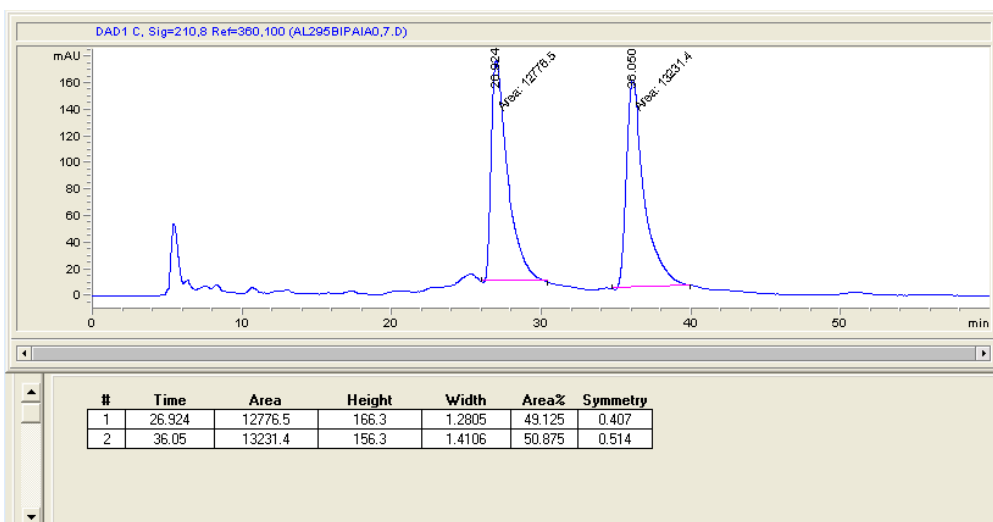
ANEXO III.I ILUROS DE AZOMETINO TRIFLUOROMETILADOS EN REACCIONES DE CICLOADICIÓN 1,3-DIPOLAR CATALÍTICA ASIMÉTRICA

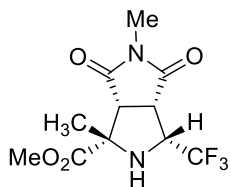
- Cicloadición 1,3-dipolar catalítica asimétrica ente α -trifluorometilimas y *N*-metilmaleimida

endo-3a:

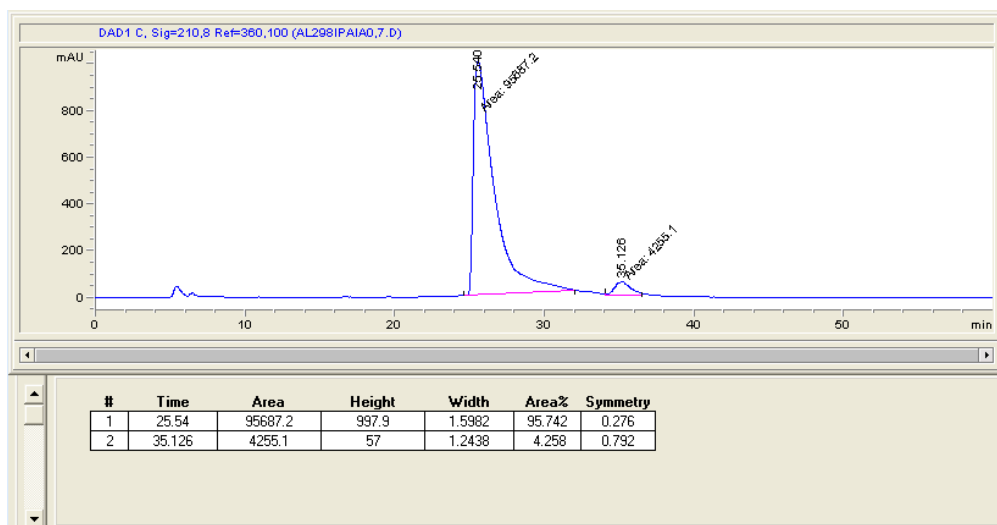


(±)-3a

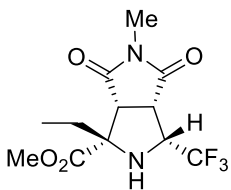




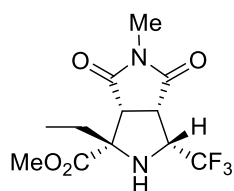
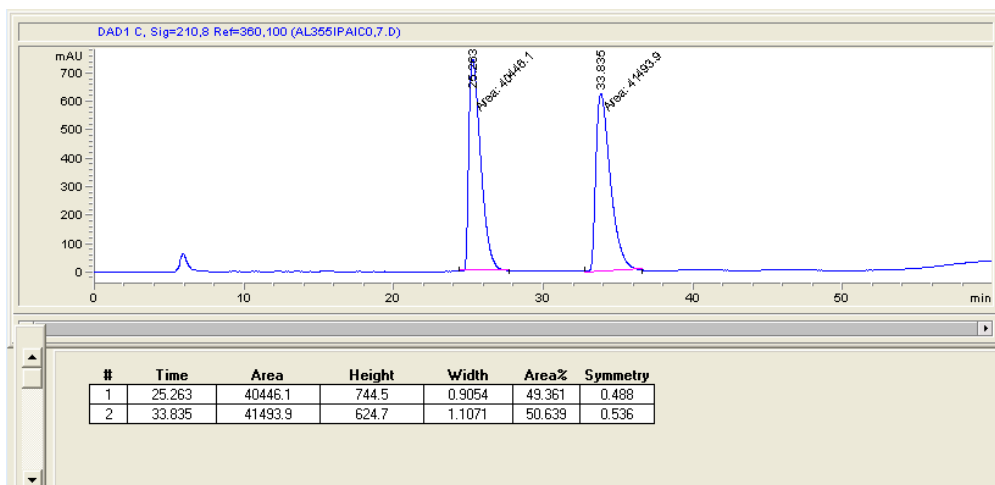
(-)-(1*S*, 3*R*, 3*aS*, 6*aR*)-**3a** (91% *ee*)



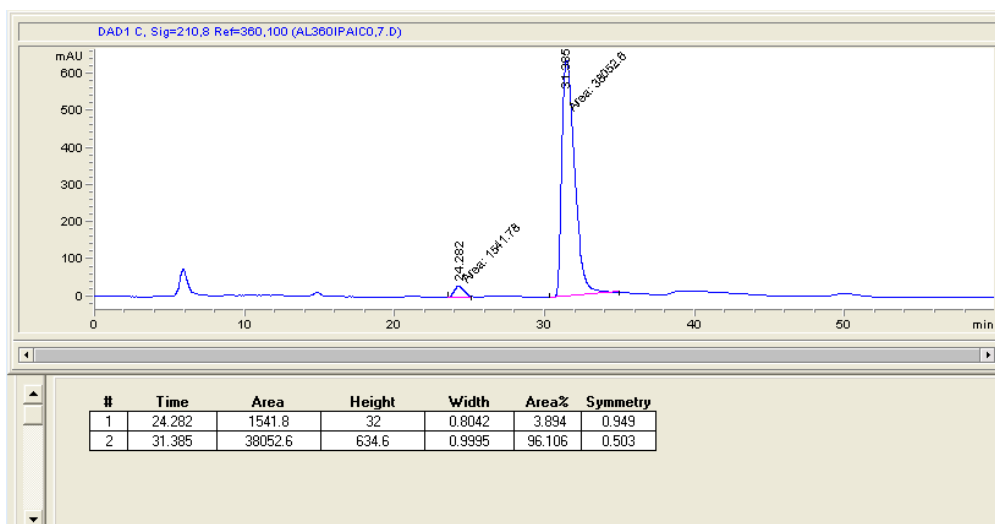
endo-**3b**:



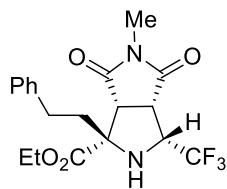
(±)-**3b**



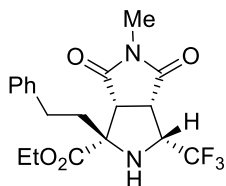
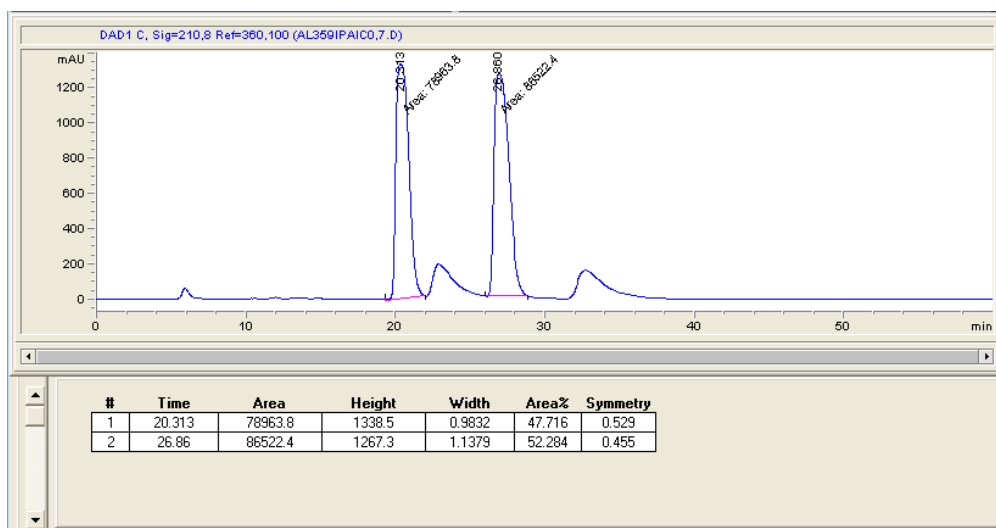
(-)-(1*S*, 3*R*, 3*aS*, 6*aR*)-**3b** (92% *ee*)



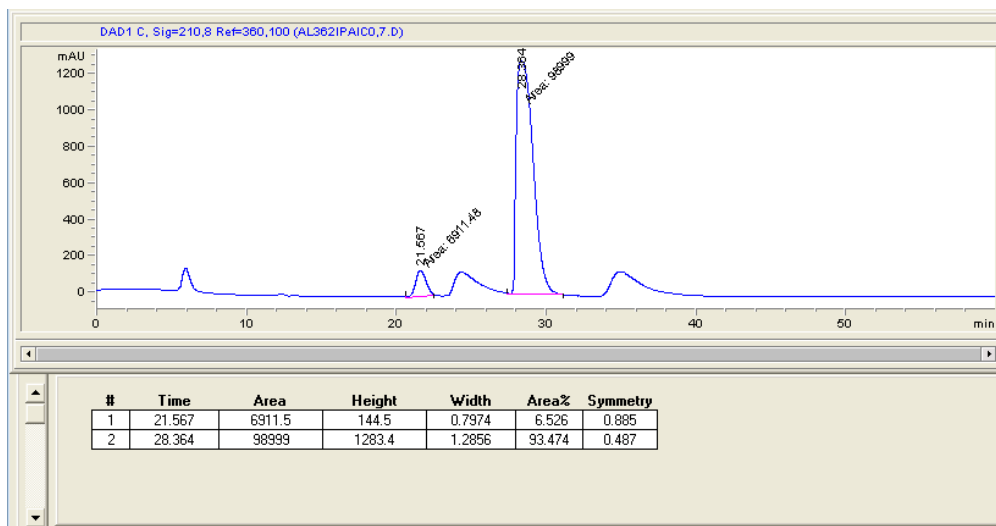
endo-3e:



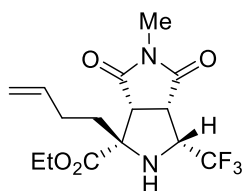
(±)-**3e**



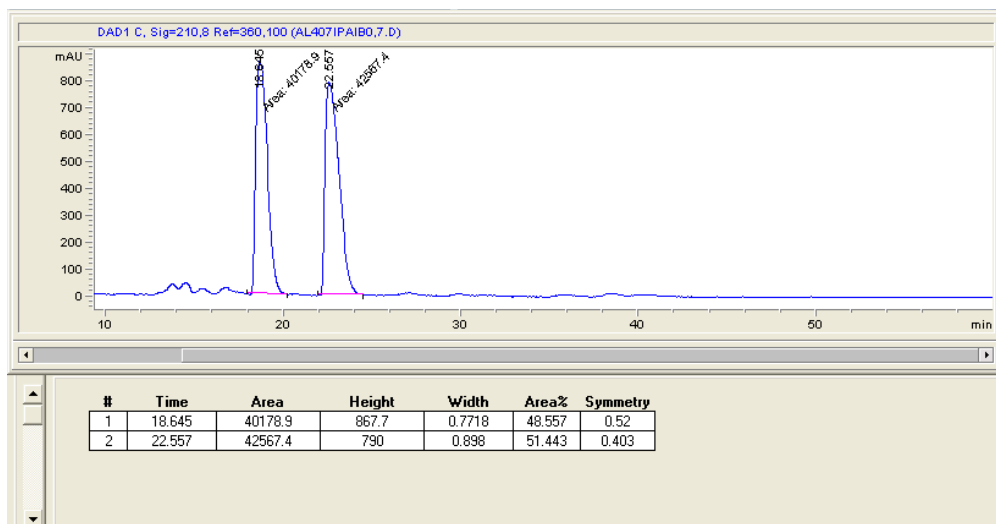
(-)-(1*S*, 3*R*, 3*aS*, 6*aR*)-**3e** (87% *ee*)

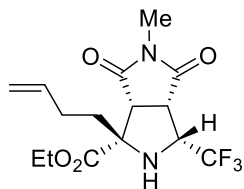


endo-3f:

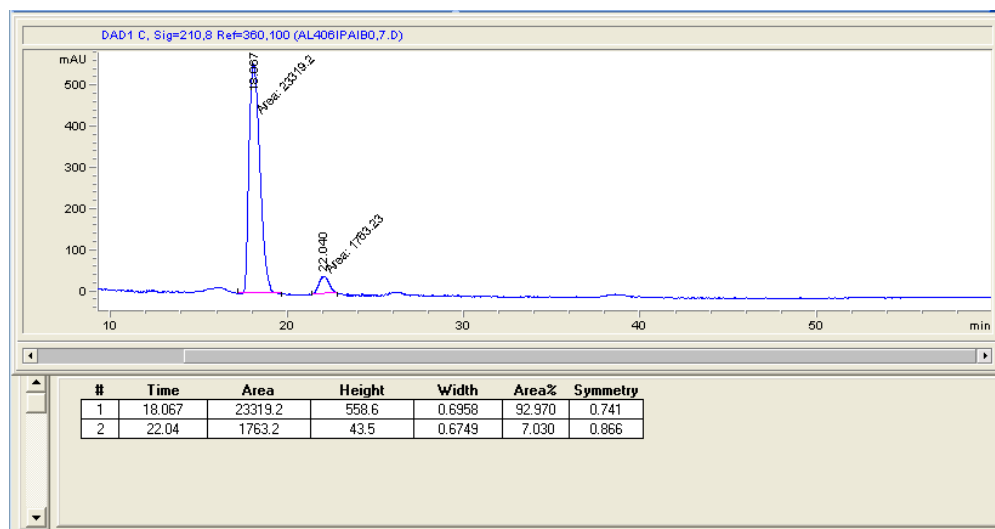


(±)-3f



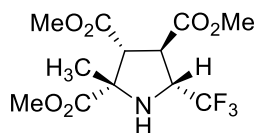


(-)-(1*S*, 3*R*, 3*aS*, 6*aR*)-**3f** (86% *ee*)

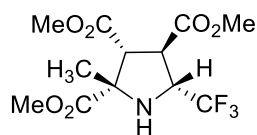
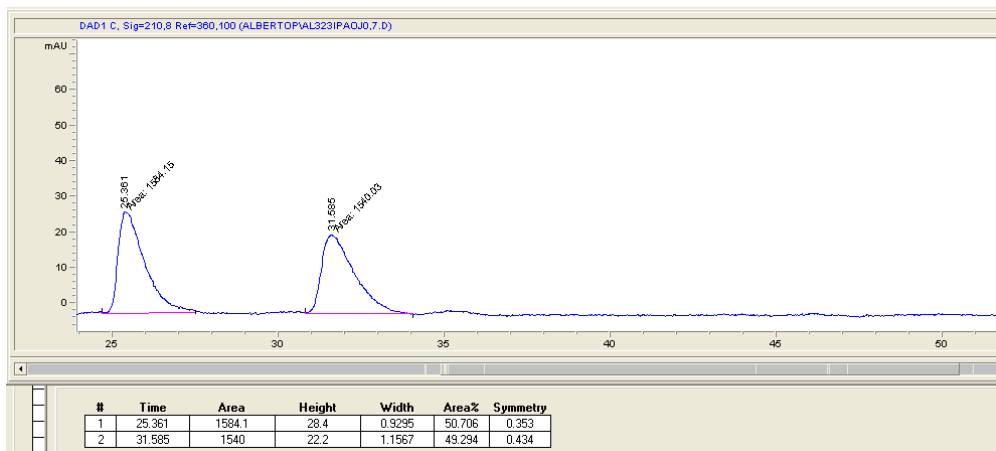


- **Cicloadición 1,3-dipolar catalítica asimétrica entre α -trifluorometilimas y dipolarófilos acíclicos**

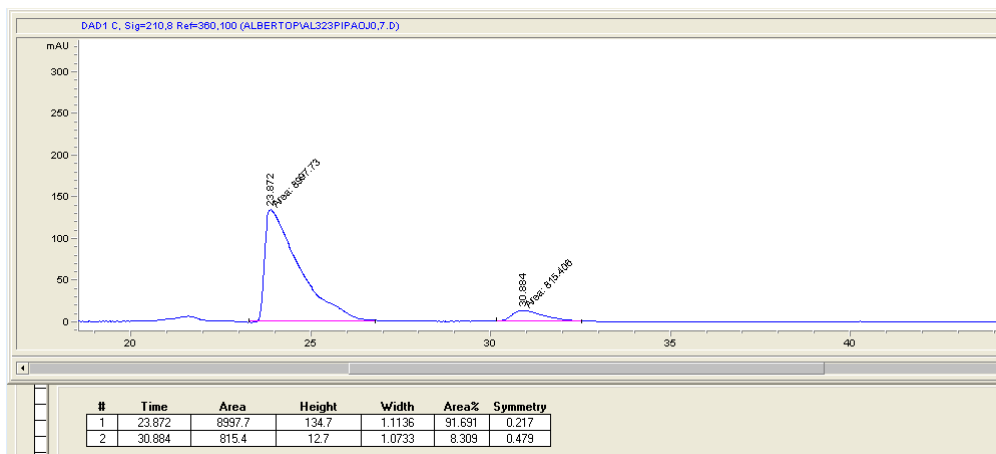
endo-**16**:



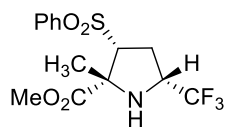
(\pm)-**16**



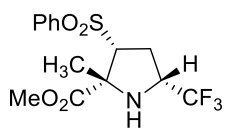
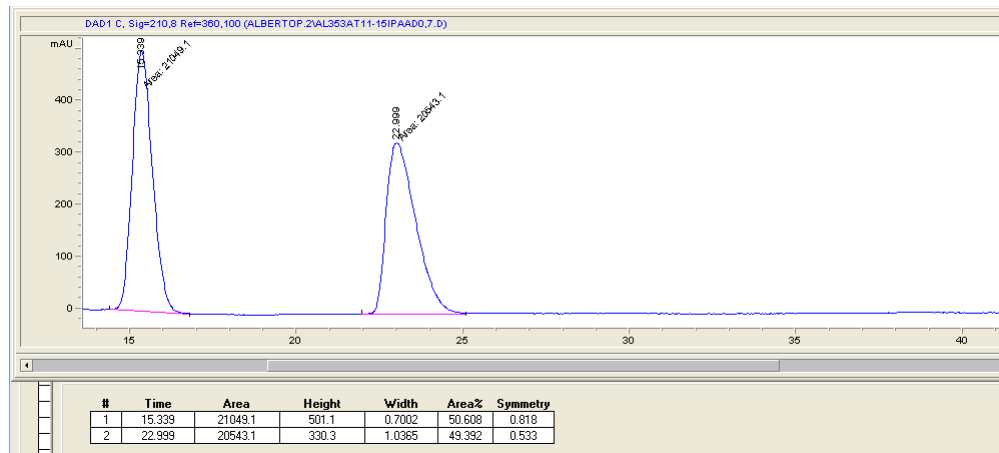
(+)-(2S, 3R, 4R, 5R)-16 (83% ee)



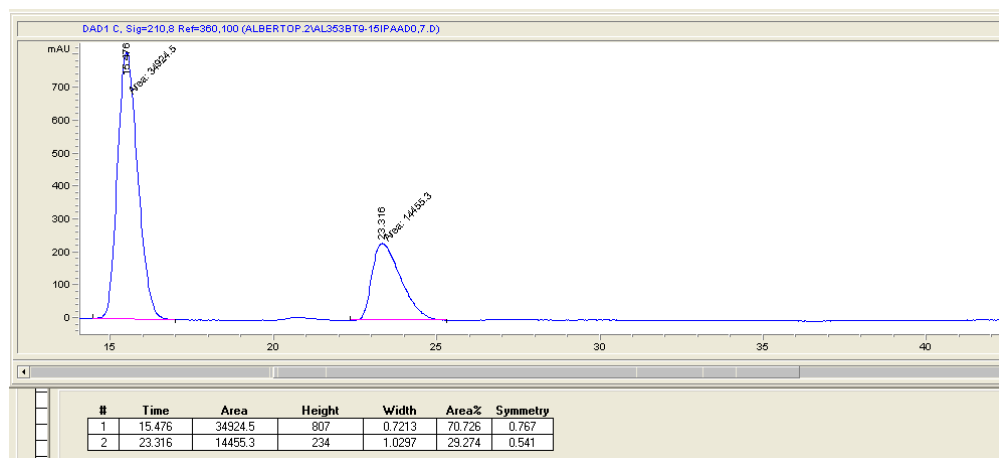
endo-21:



(±)-21

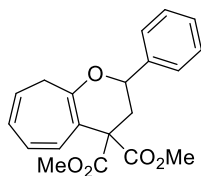


(-)-(2*R*, 3*R*, 5*R*)-**21** (41% ee)

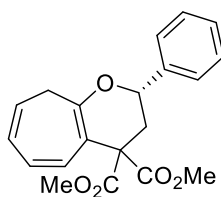
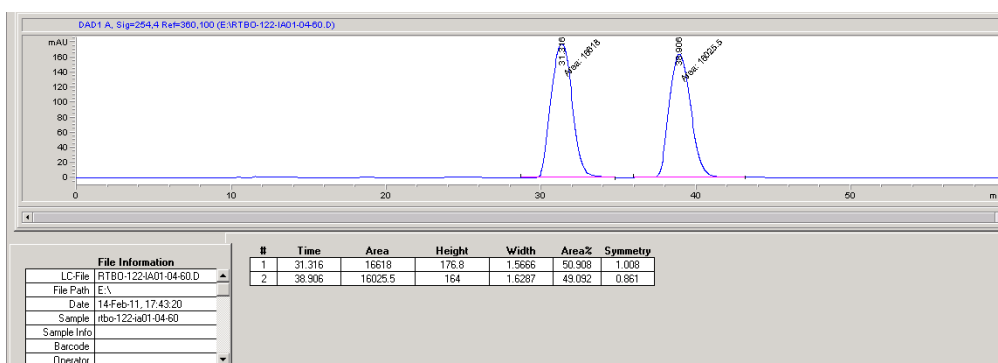


➤ Cicloadición [8+3] catalítica asimétrica entre troponas y 1,1-ciclopropanodiésteres

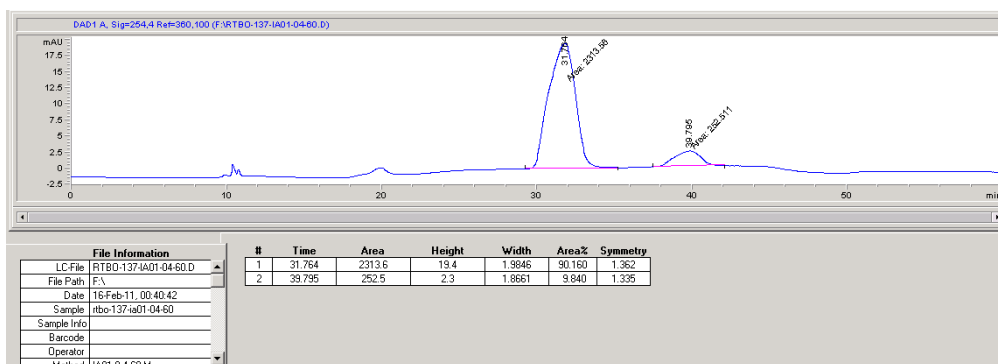
35a:



(±)-35a

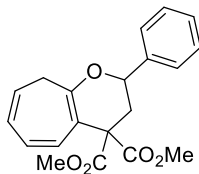


(+)-(-S)-35a (80% ee)

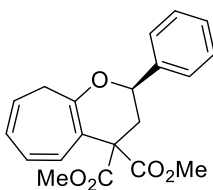
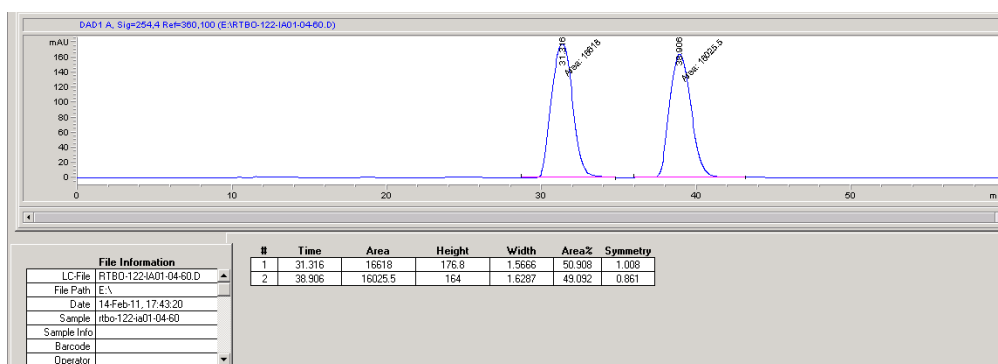


➤ **Cicloadición [8+3] entre troponas y 1,1-ciclopropanodíesteres enantioenriquecidos**

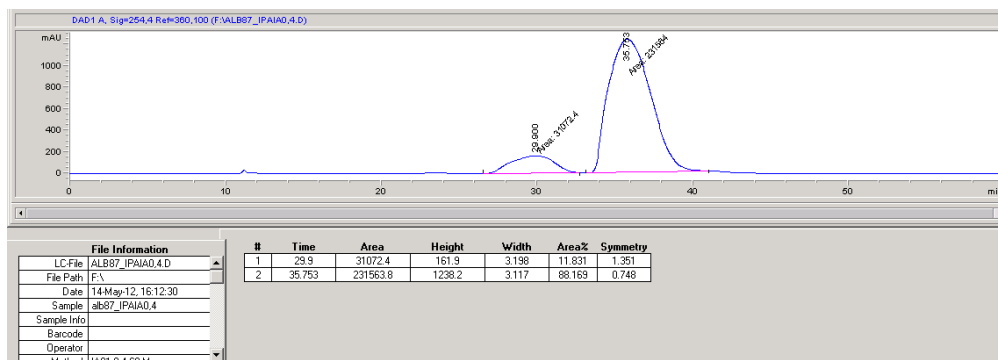
35a:

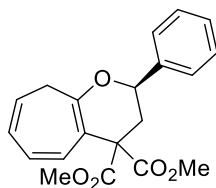


(±)-35a

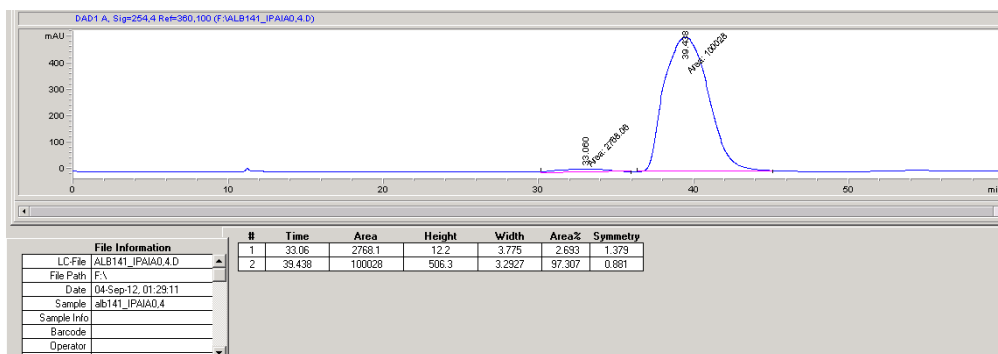


(-)-(*R*)-35a (76% ee; T = 70 °C)

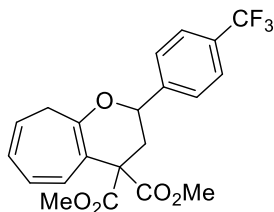




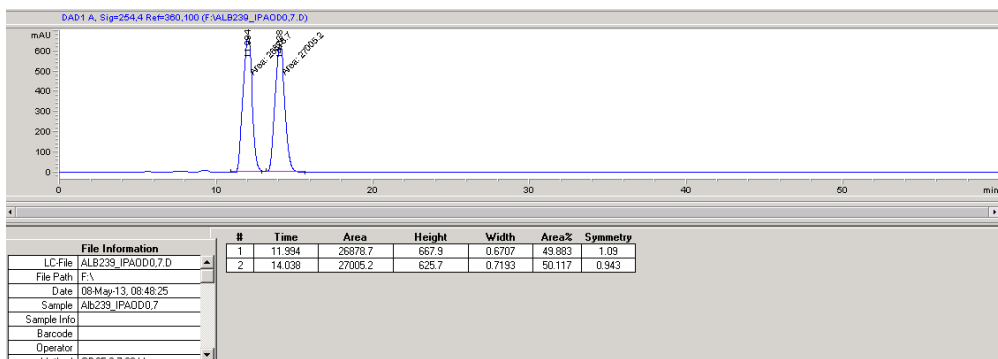
(-)-(R)-35a (95% ee; T = 55 °C)

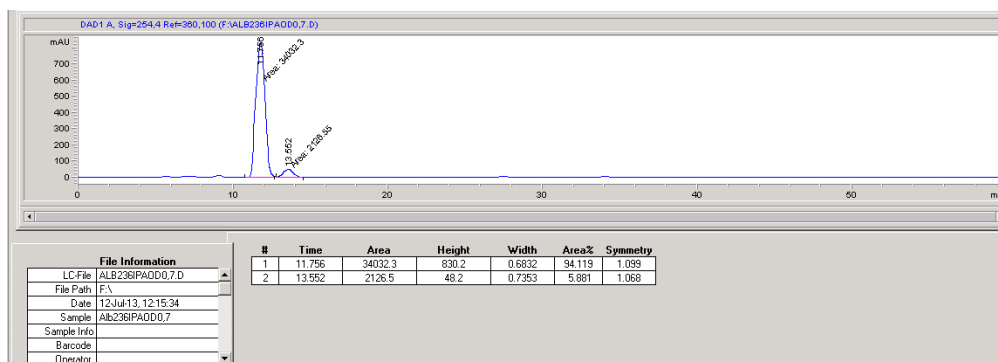
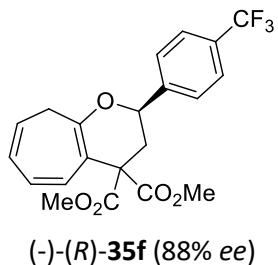


35f:



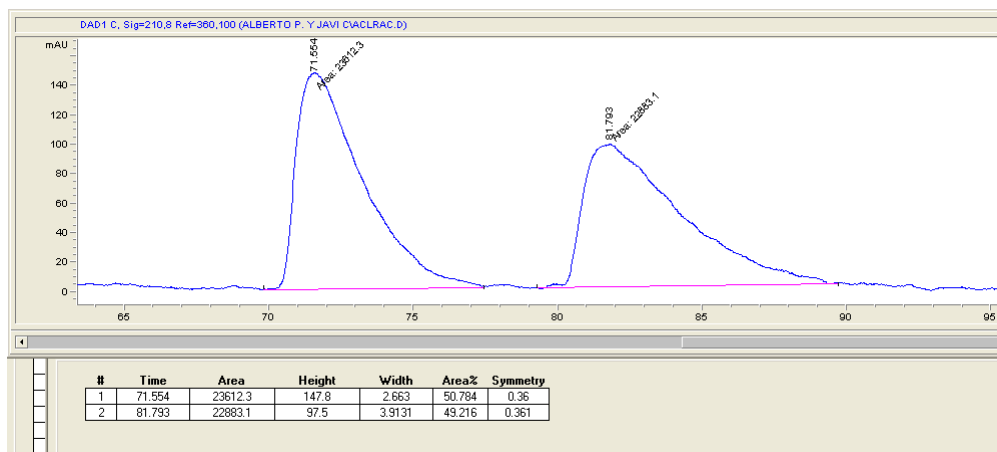
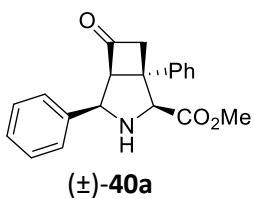
(±)-35f

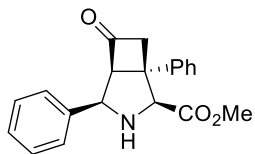




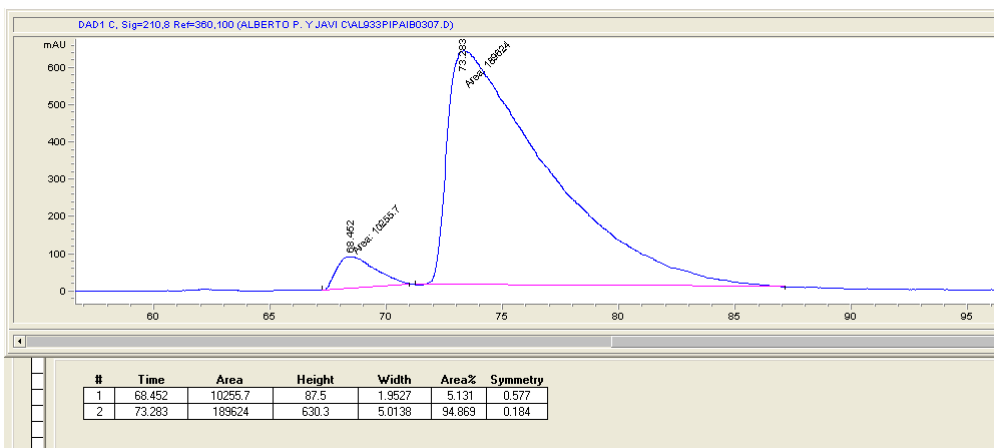
- **Cicloadición 1,3-dipolar catalítica asimétrica entre iluros de azometino y 3-fenilciclobutenona**

endo-40a:

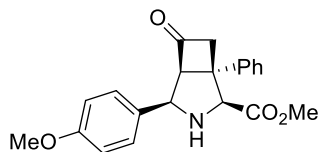




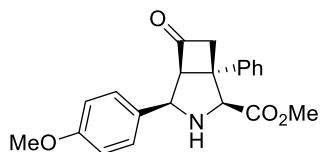
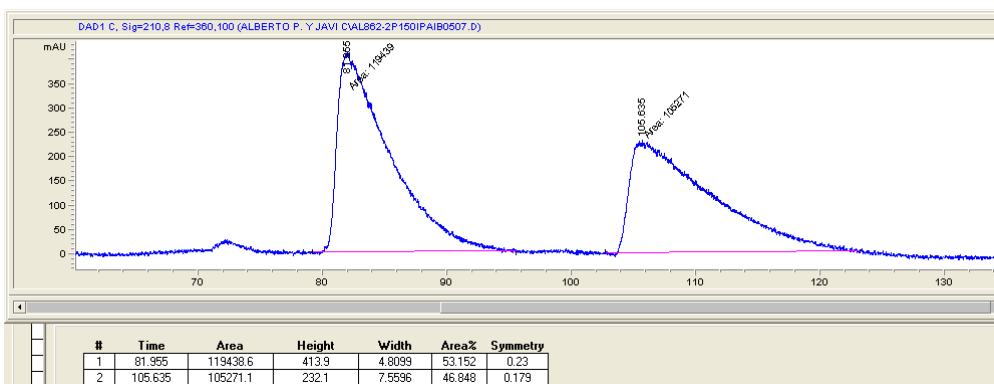
(+)-(1*S*, 3*R*, 3*aS*, 5*aR*)-40a (90% ee)

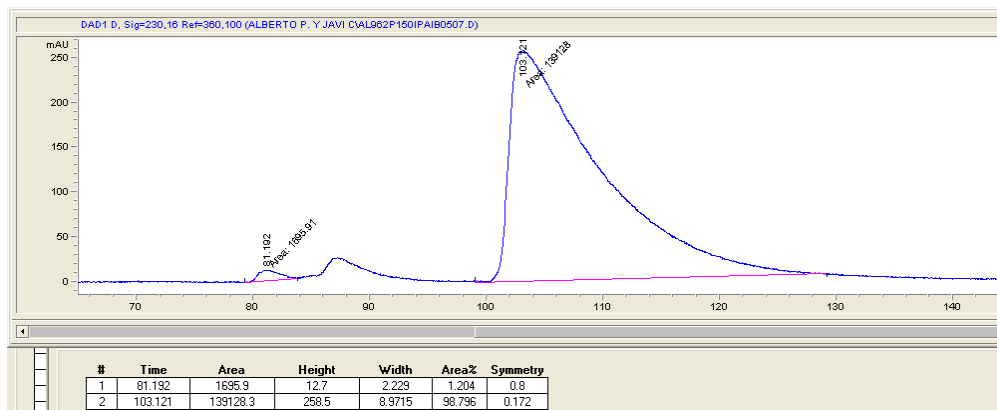
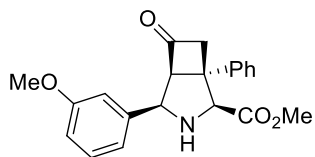
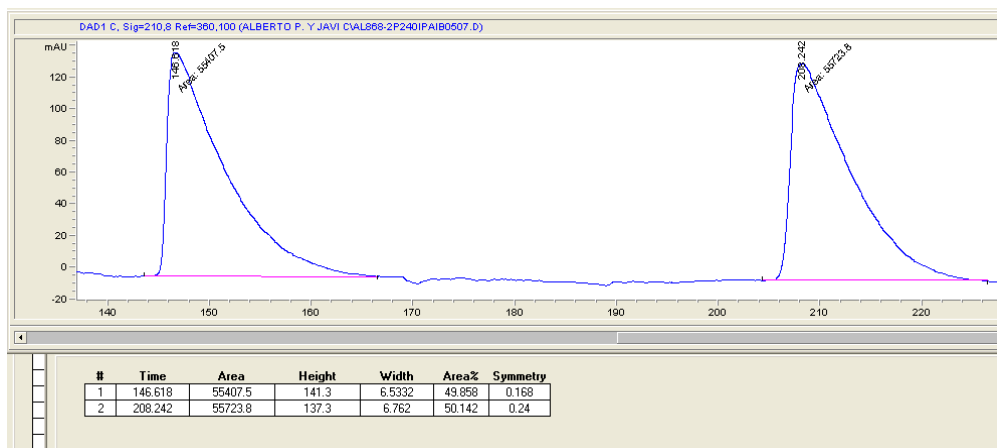


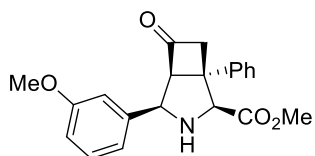
endo-40b:



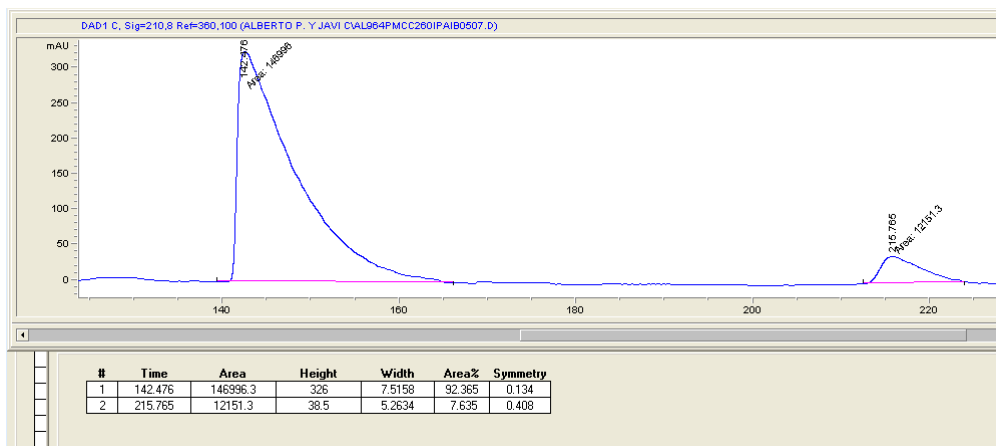
(±)-40b



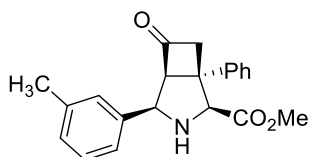
(+)-(1*S*, 3*R*, 3*aS*, 5*aR*)-40b (98% ee)**endo-40c:****(±)-40c**



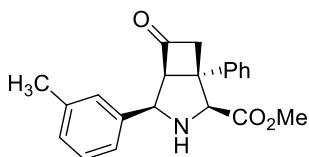
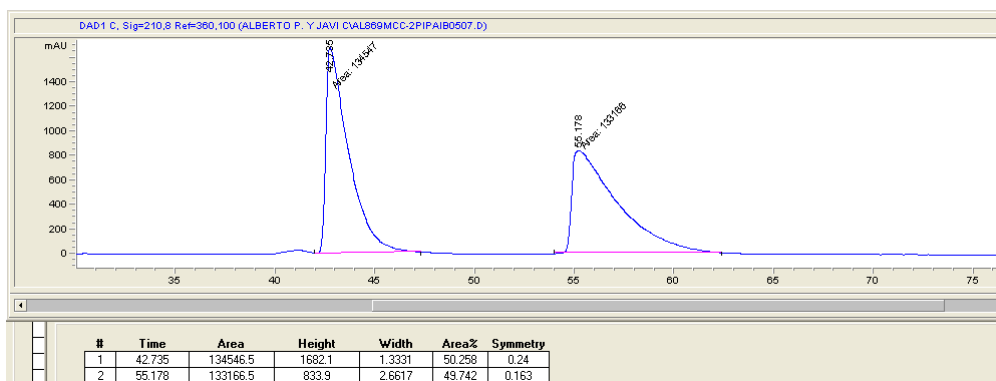
(+)-(1*S*, 3*R*, 3*aS*, 5*aR*)-**40c** (85% *ee*)

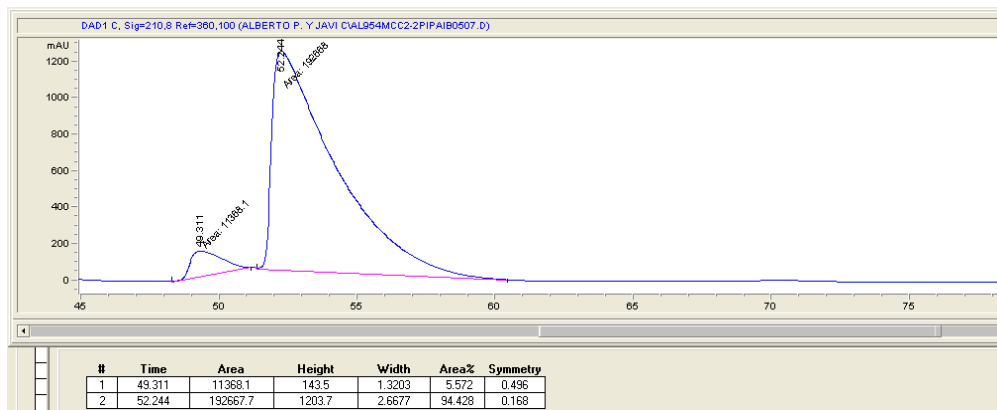
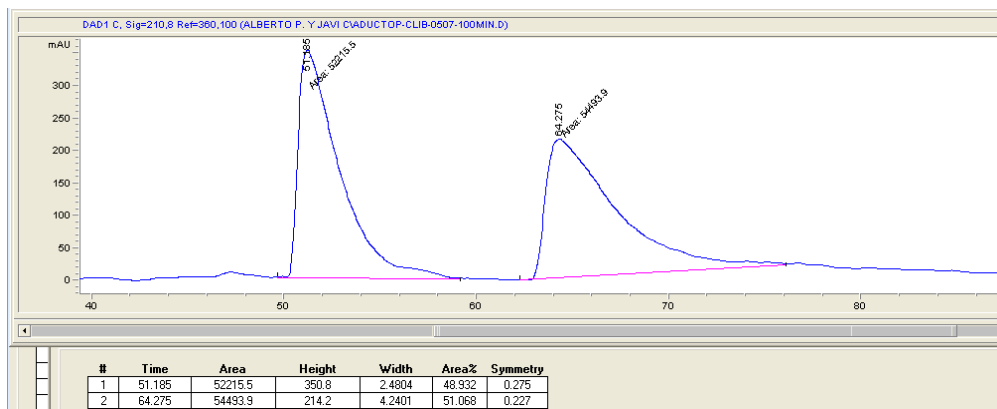
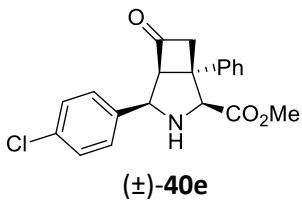


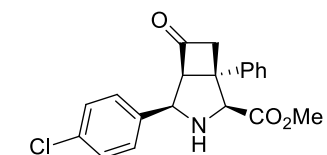
endo-**40d**:



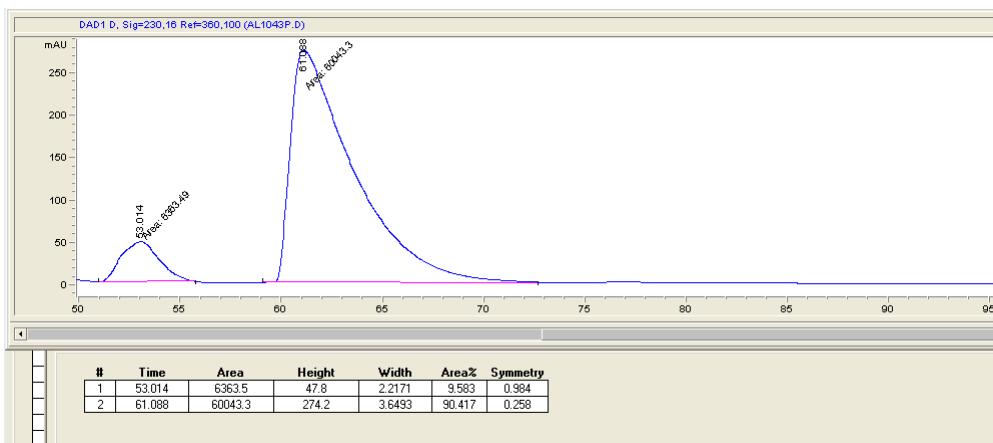
(±)-**40d**



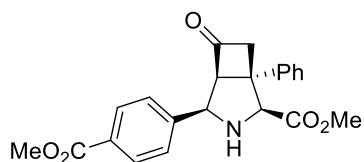
(+)-(1*S*, 3*R*, 3*aS*, 5*aR*)-40d (89% ee)**endo-40e:**



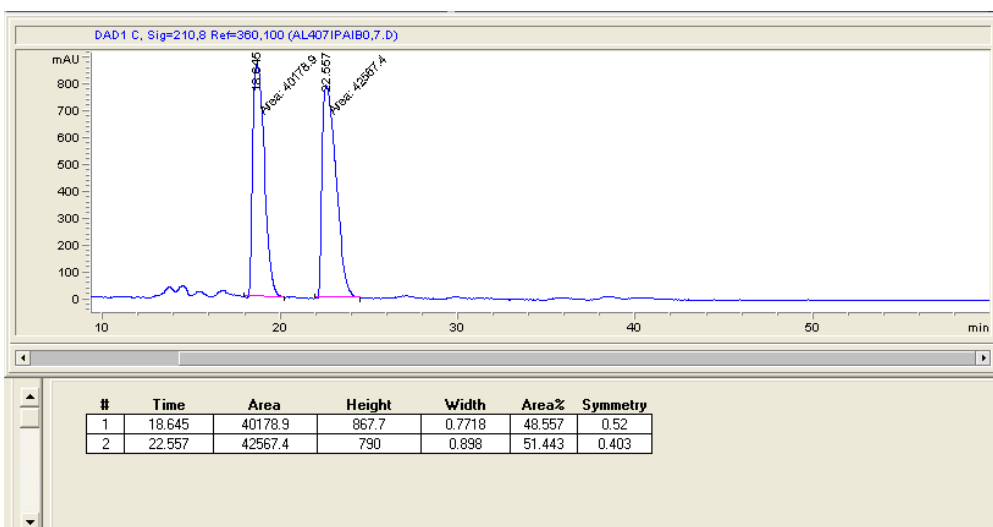
(+)-(1*S*, 3*R*, 3*aS*, 5*aR*)-**40e** (81% ee)

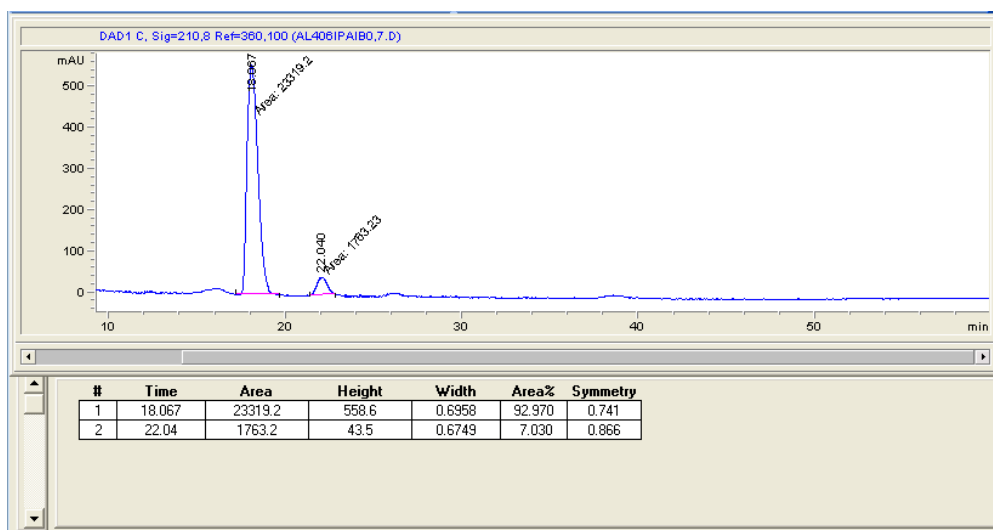
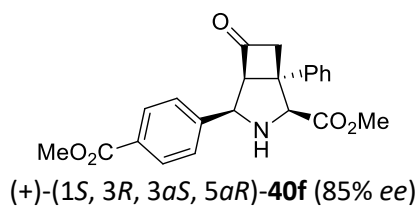


endo-**40f**:

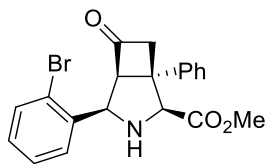


(±)-**40f**

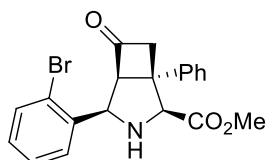
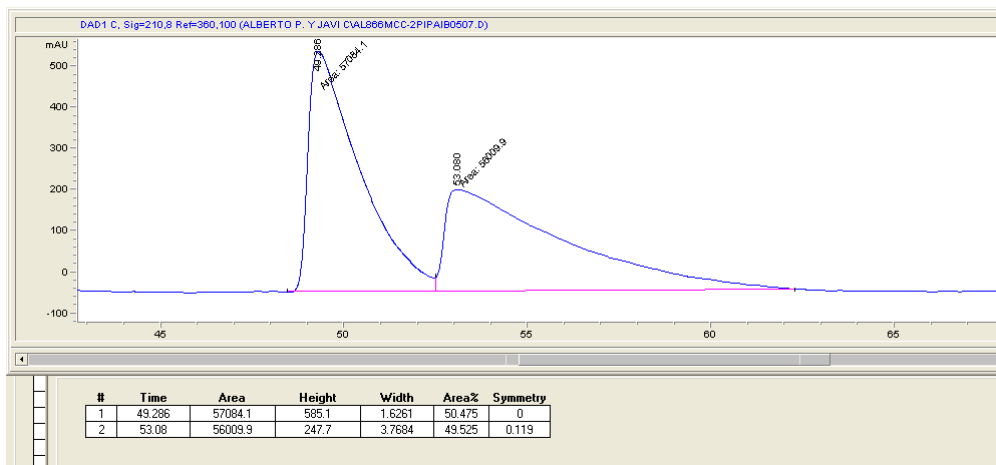




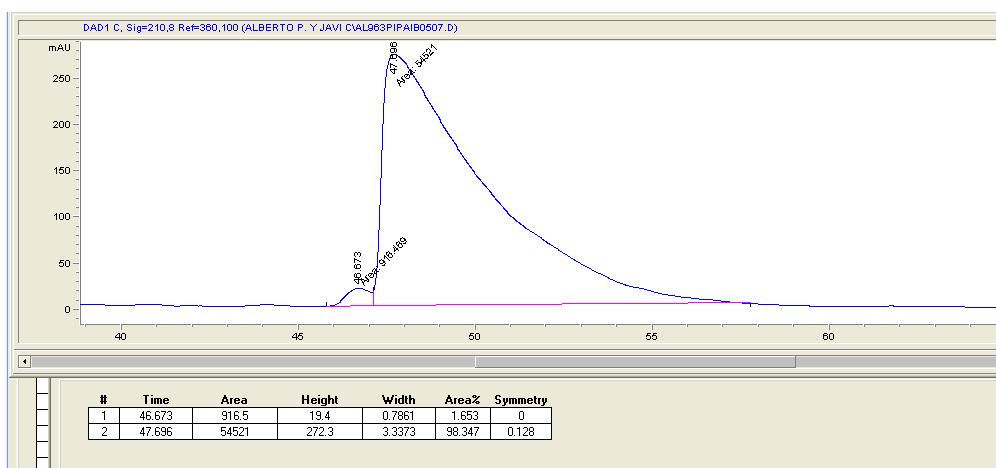
endo-**40g**:



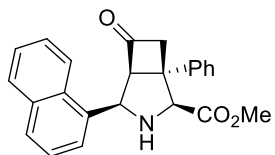
(±)-**40g**



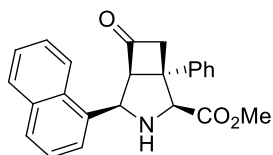
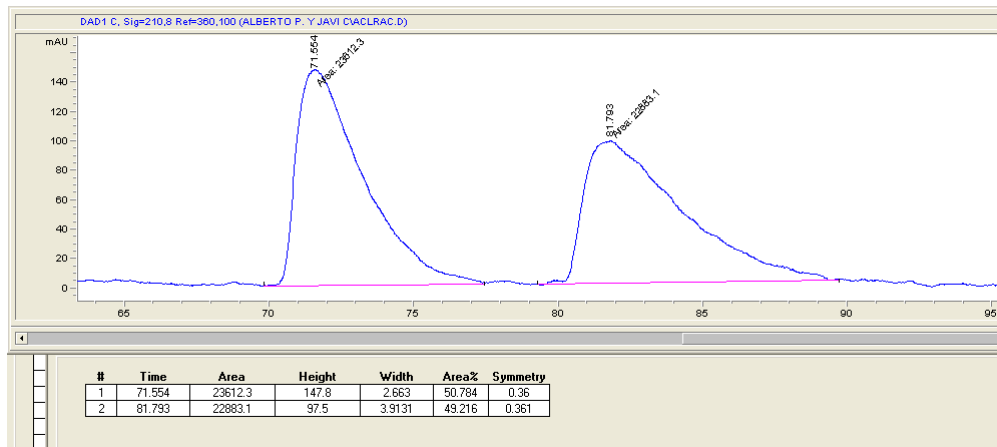
(+)-(1*S*, 3*R*, 3*aS*, 5*aR*)-**40g** (97% ee)



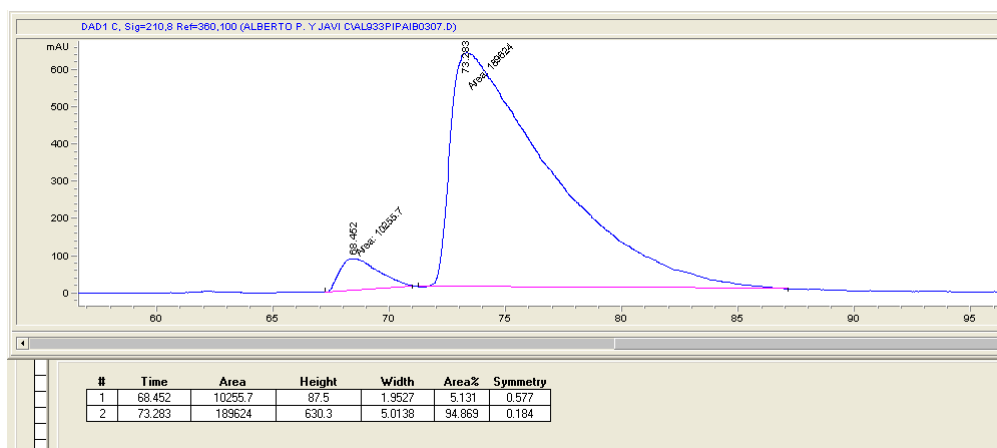
endo-**40h**:



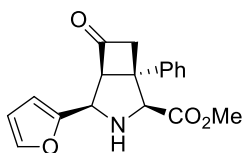
(±)-**40h**

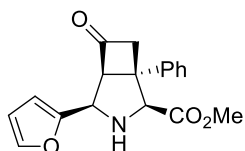
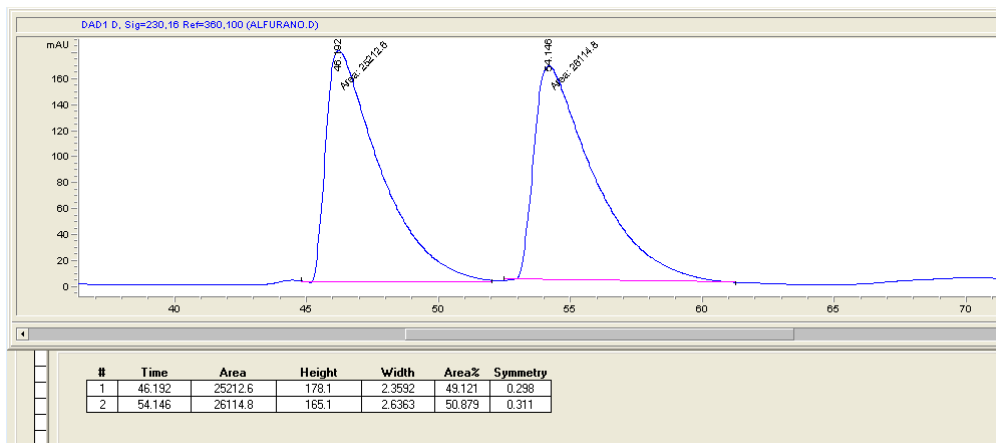
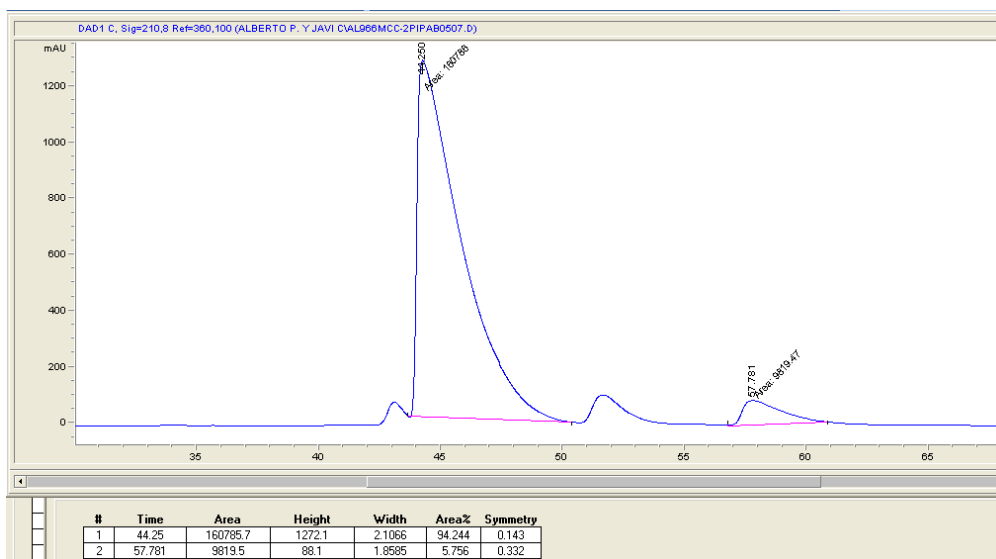
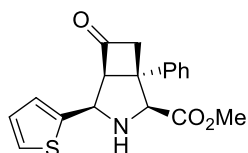


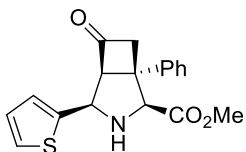
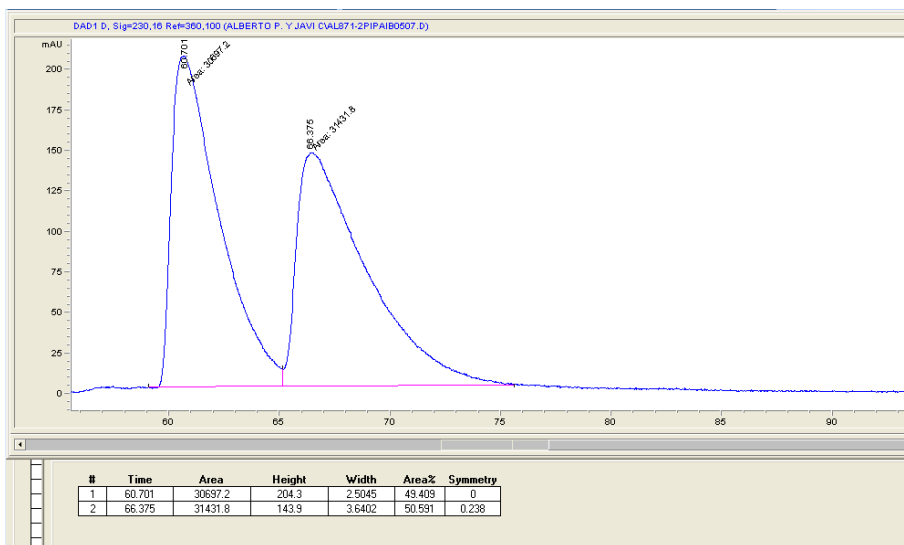
(+)-(1*S*, 3*S*, 3*aR*, 5*aR*)-40h (91% ee)

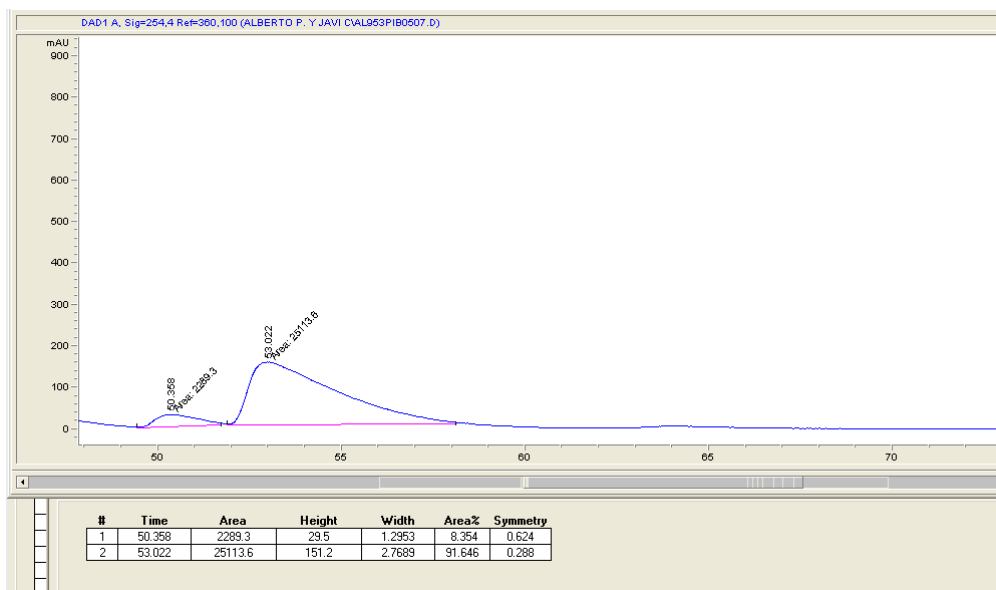


endo-40i:

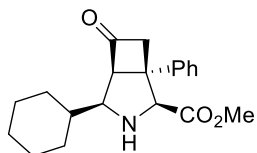
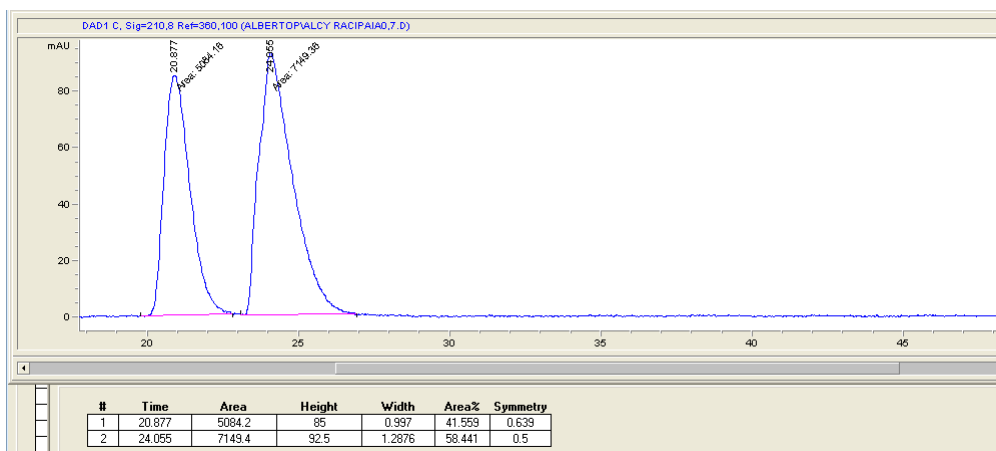
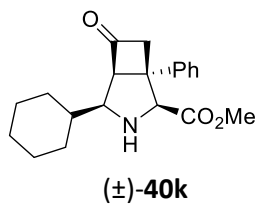


(±)-40i**(+)-(1*S*, 3*R*, 3*aS*, 5*aR*)-40i (88% ee)****endo-40j:**

(±)-40j**(+)-(1*S*, 3*R*, 3*aS*, 5*aR*)-40j (83% ee)**



endo-40k:



(+)-(1*S*, 3*S*, 3*aR*, 5*aR*)-40k (73% ee)