

Progetto “LOMBARDIA ECCELLENTE” -

Cluster di Eccellenza

PER LE SINERGIE TRA PRODUZIONE AGROALIMENTARE E RICERCA MEDICO / SCIENTIFICA

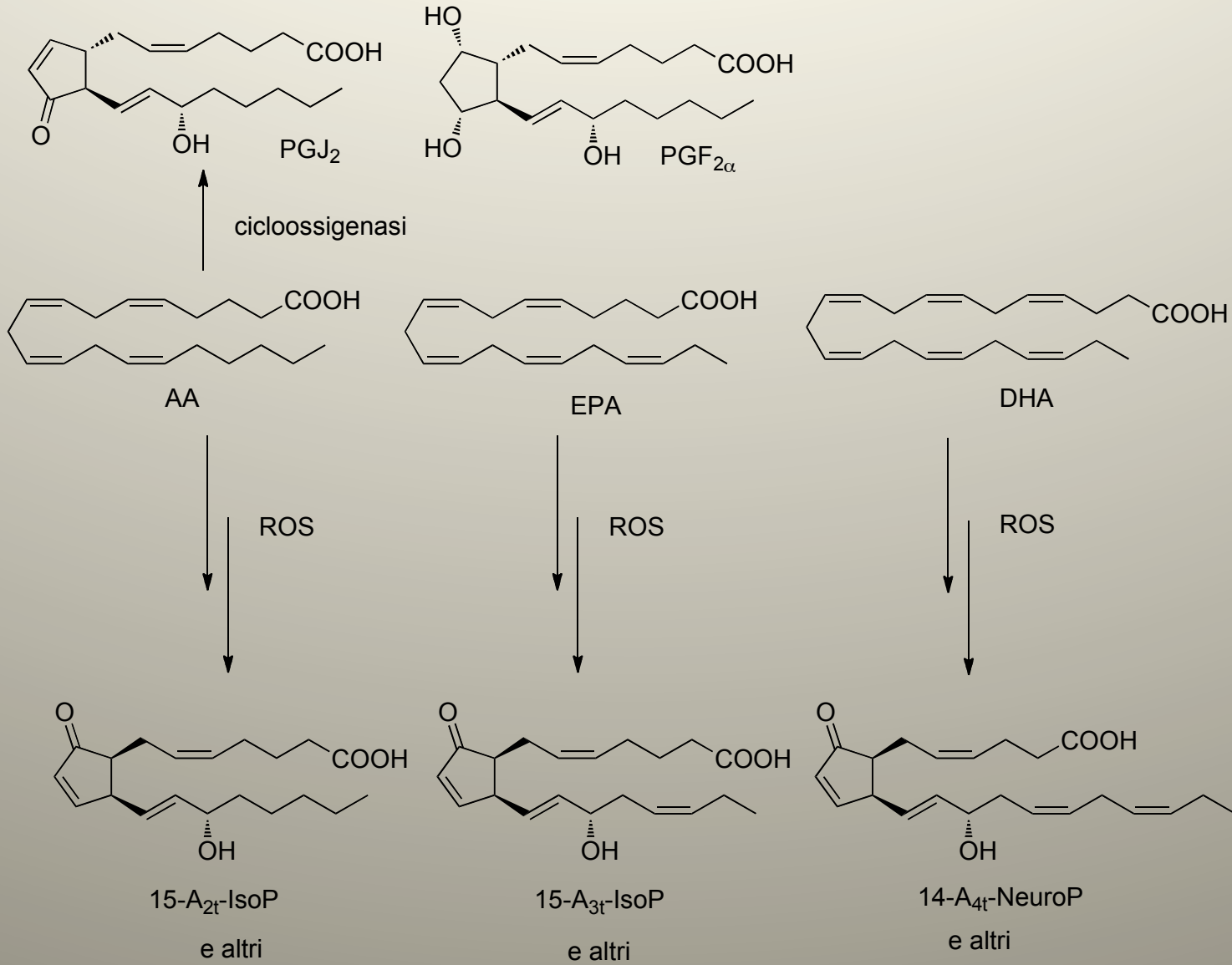


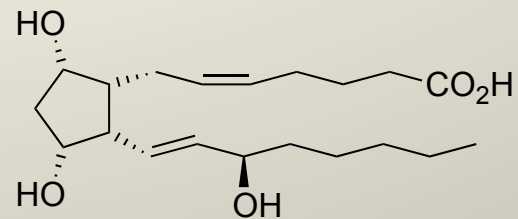
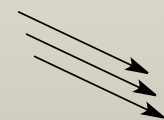
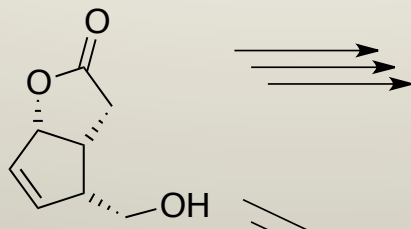
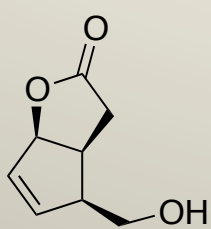
24 Maggio 2013

Relazione sulla Ricerca

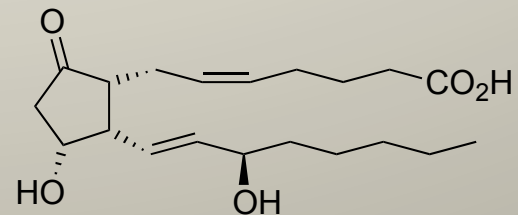
Progetto “*Valutazione del potere antiossidante dei formaggi tipici lombardi*”

Iniziativa “*Lombardia eccellente*”

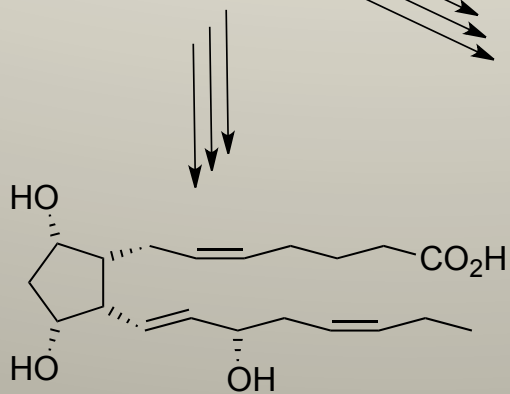




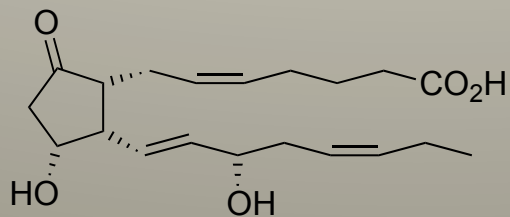
15-(R)-F₂C-IsoP



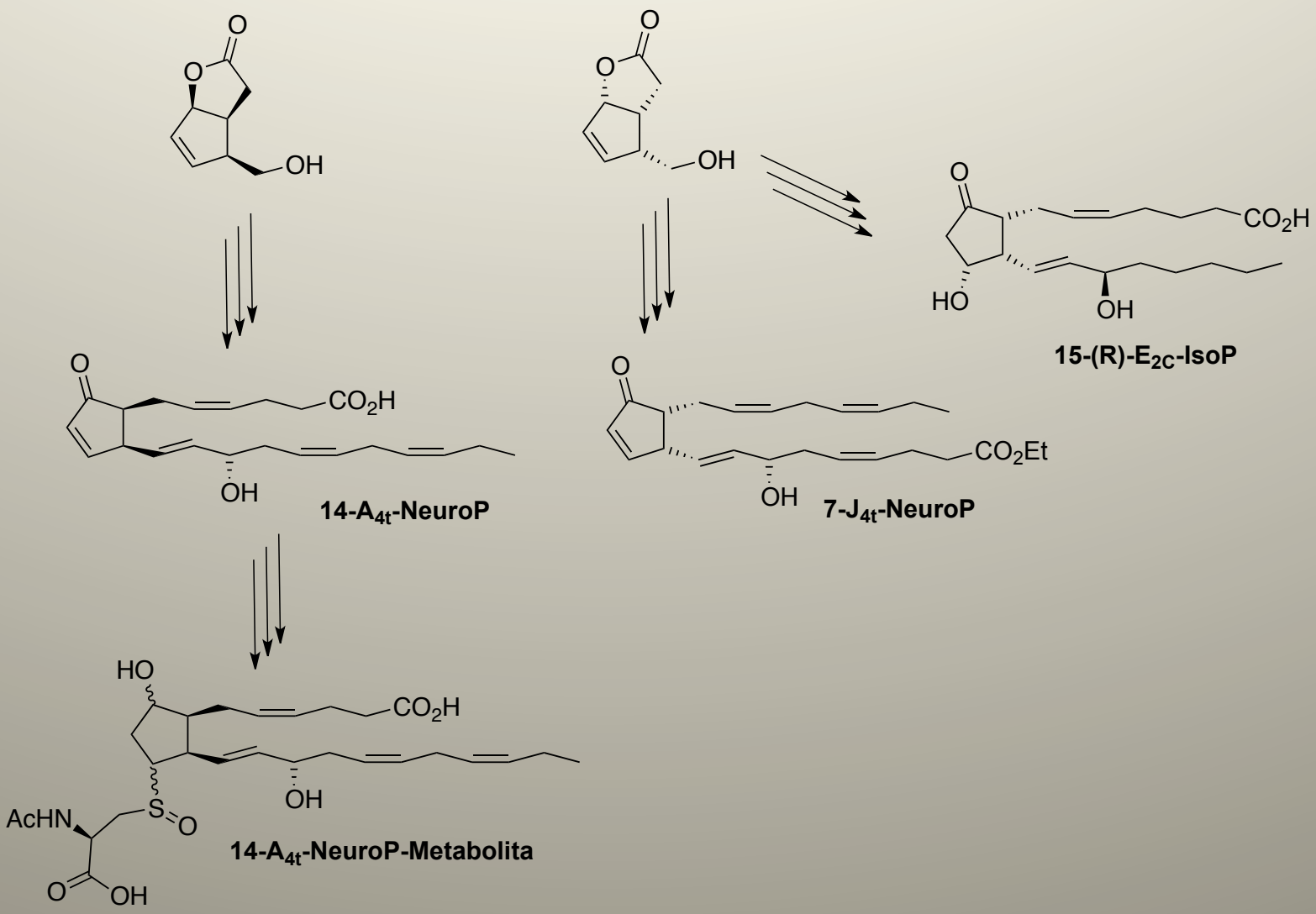
15-(R)-E₂C-IsoP



15-(S)-F₃C-IsoP



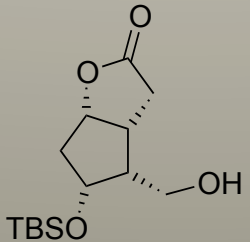
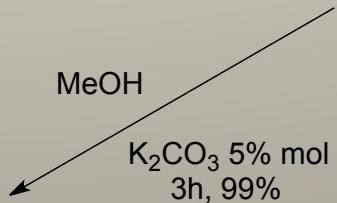
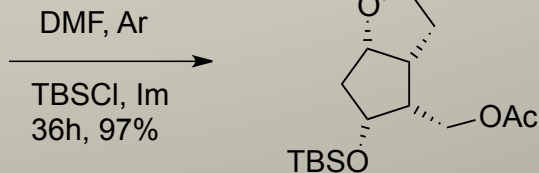
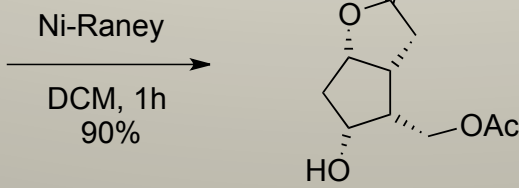
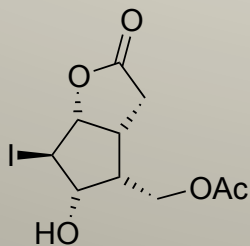
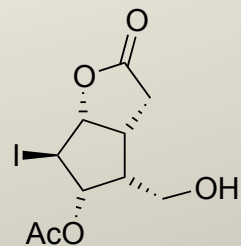
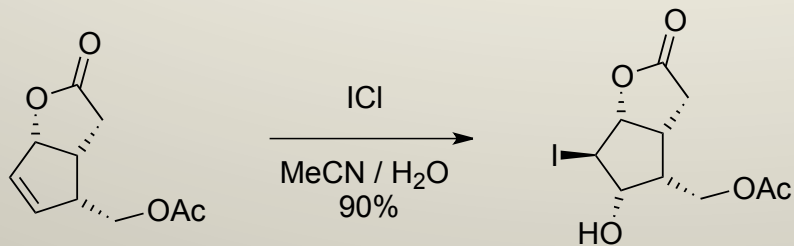
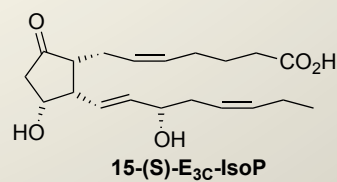
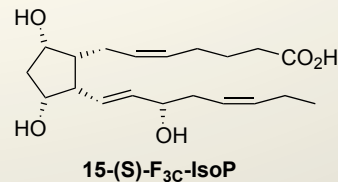
15-(S)-E₃C-IsoP

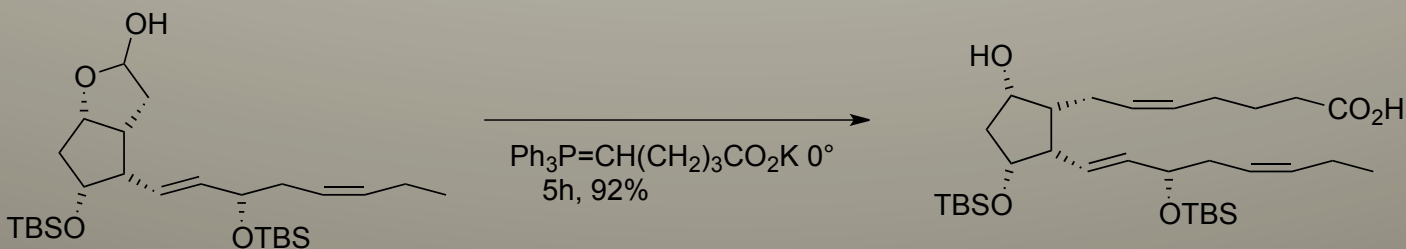
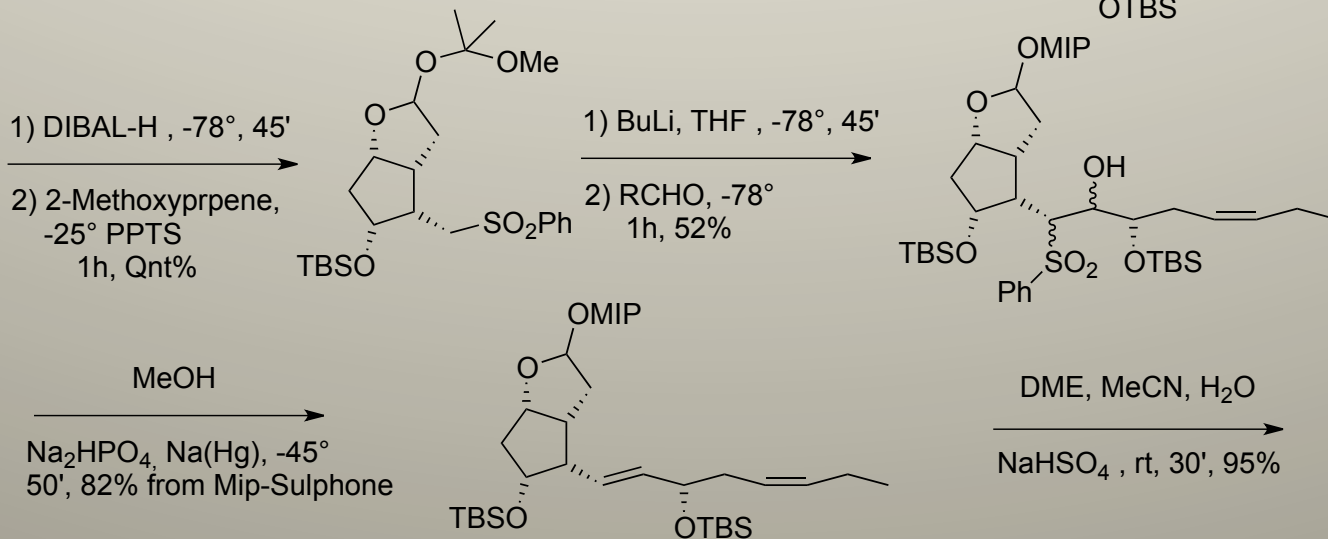
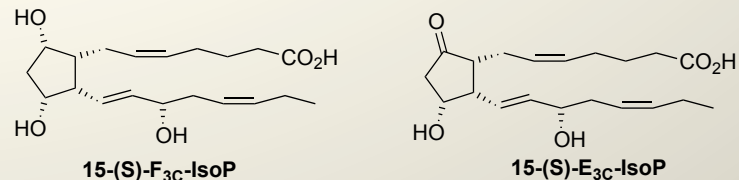
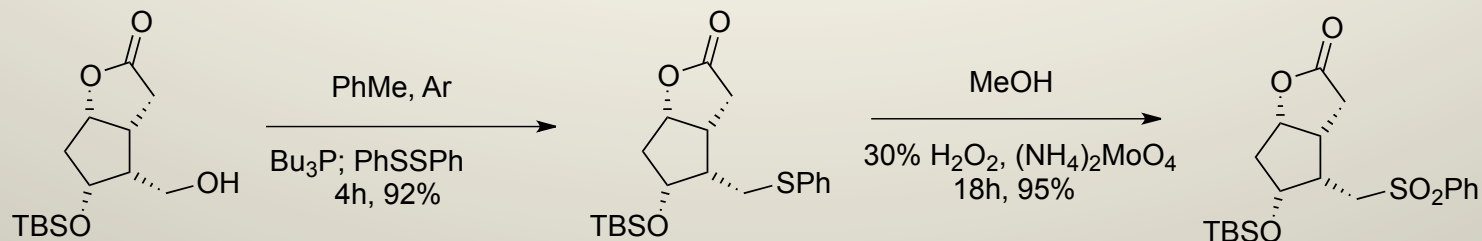


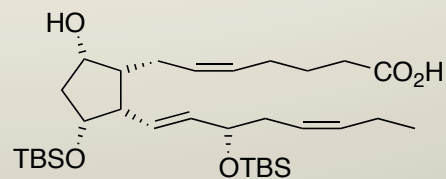
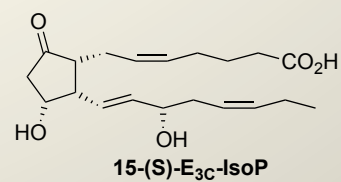
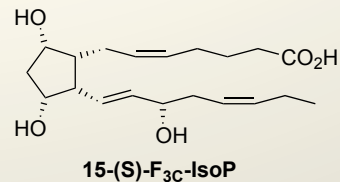
F_2 -IsoP, $15-F_3$ -IsoP e A_4 -NeuroP-Metabolite: Messa a punto dei metodi HESI-MS per la loro quantificazione.

- Tecnica sensibile;
- Versatile;
- Flessibile;
- Riproducibile.

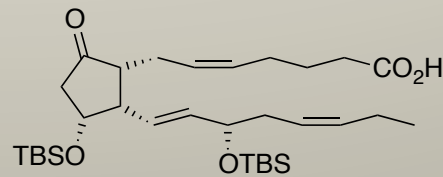




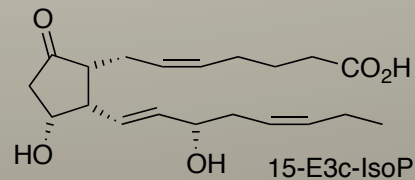




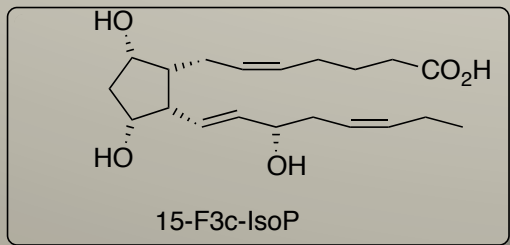
DCM
Dess Martin
2h, 85%

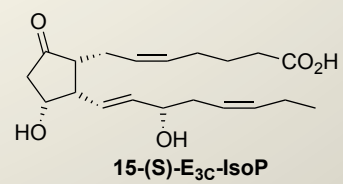
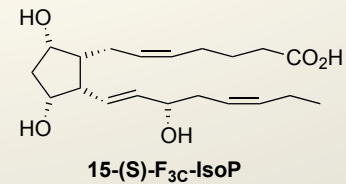


HF 48%, MeCN
4h, 80%

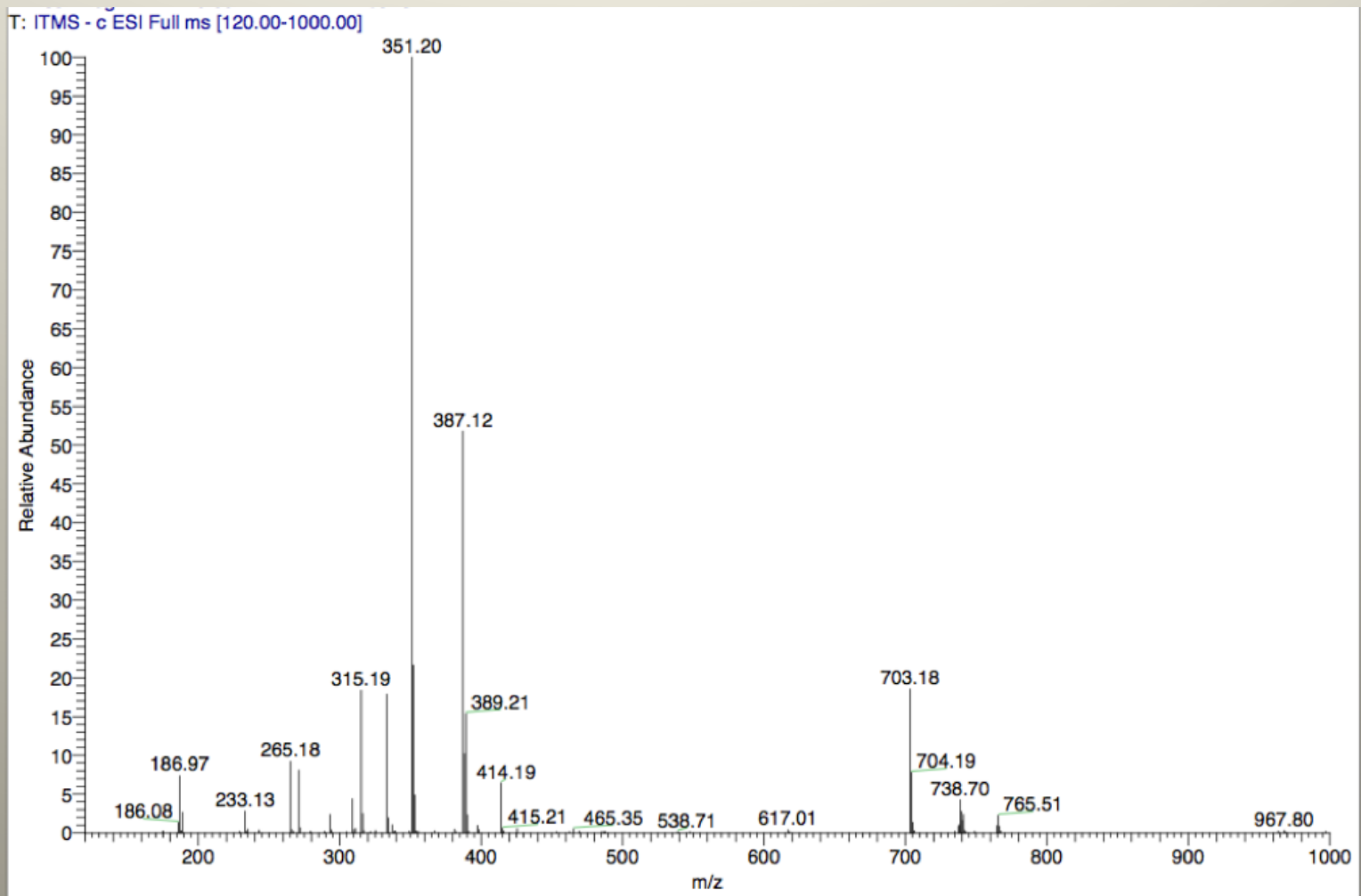


HF 48%, MeCN
4h, 90%



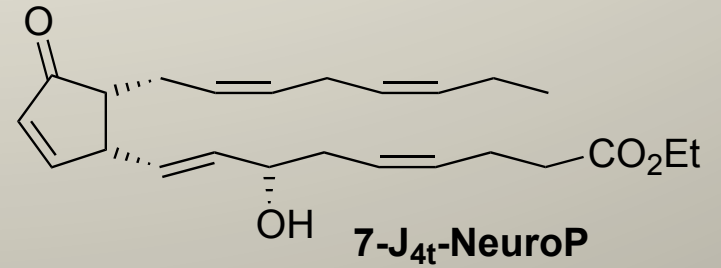
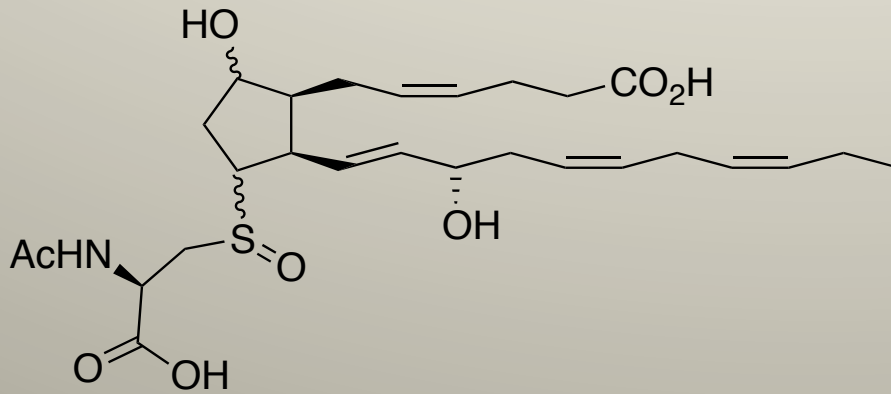


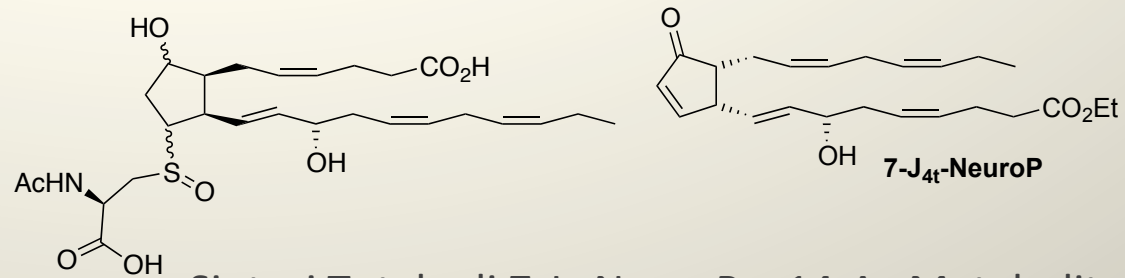
Spettro di massa HESI-Full scan (Negative Mode) di F3-IsoP





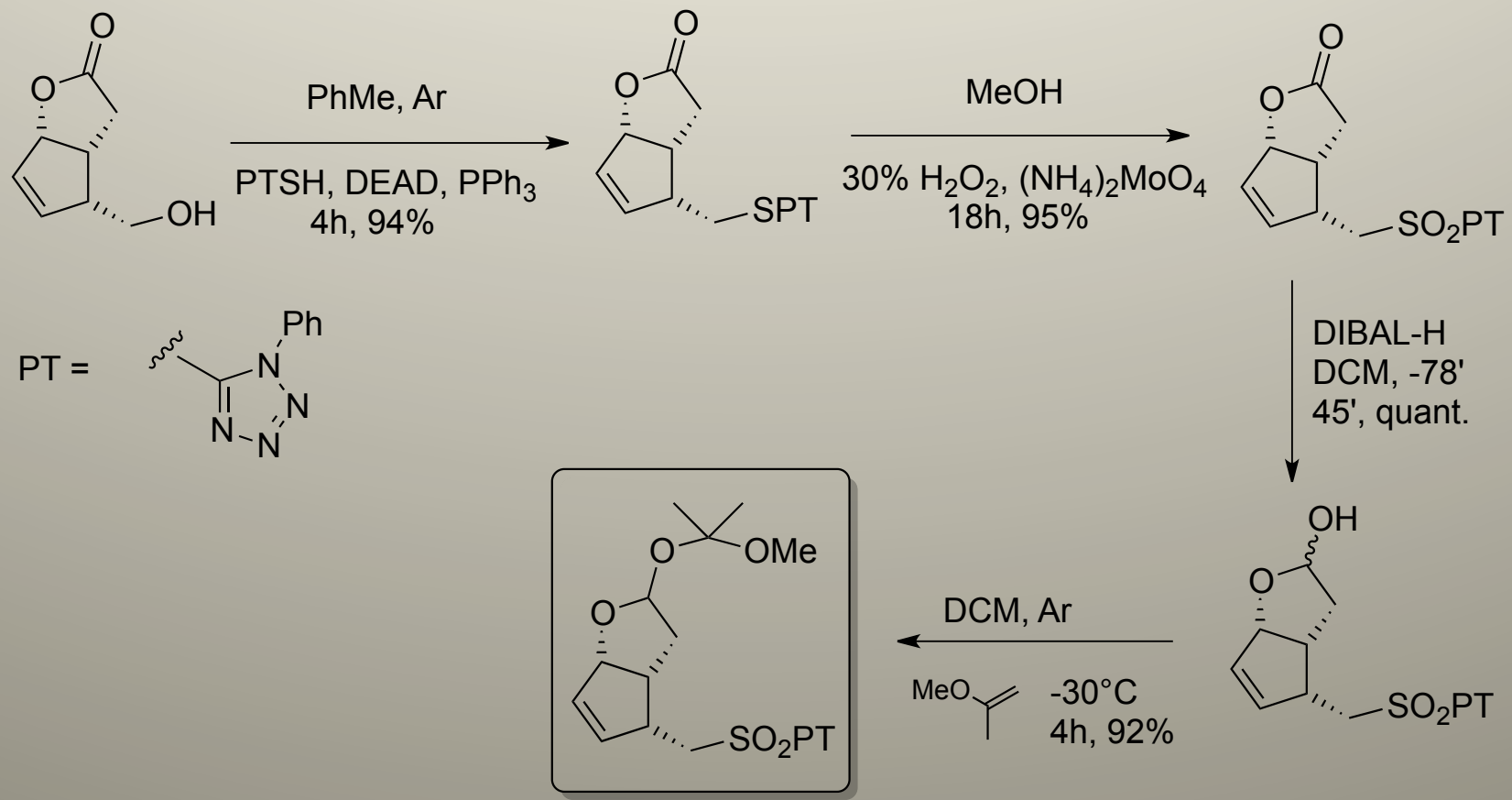
Sintesi Totale di 7-J₄-NeuroP e 14-A₄-Metabolita

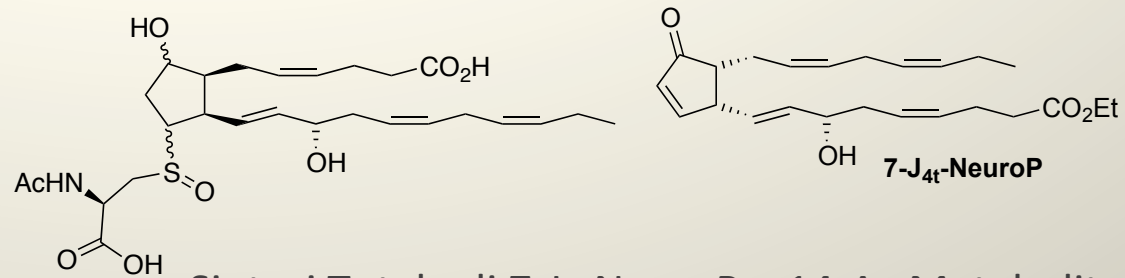




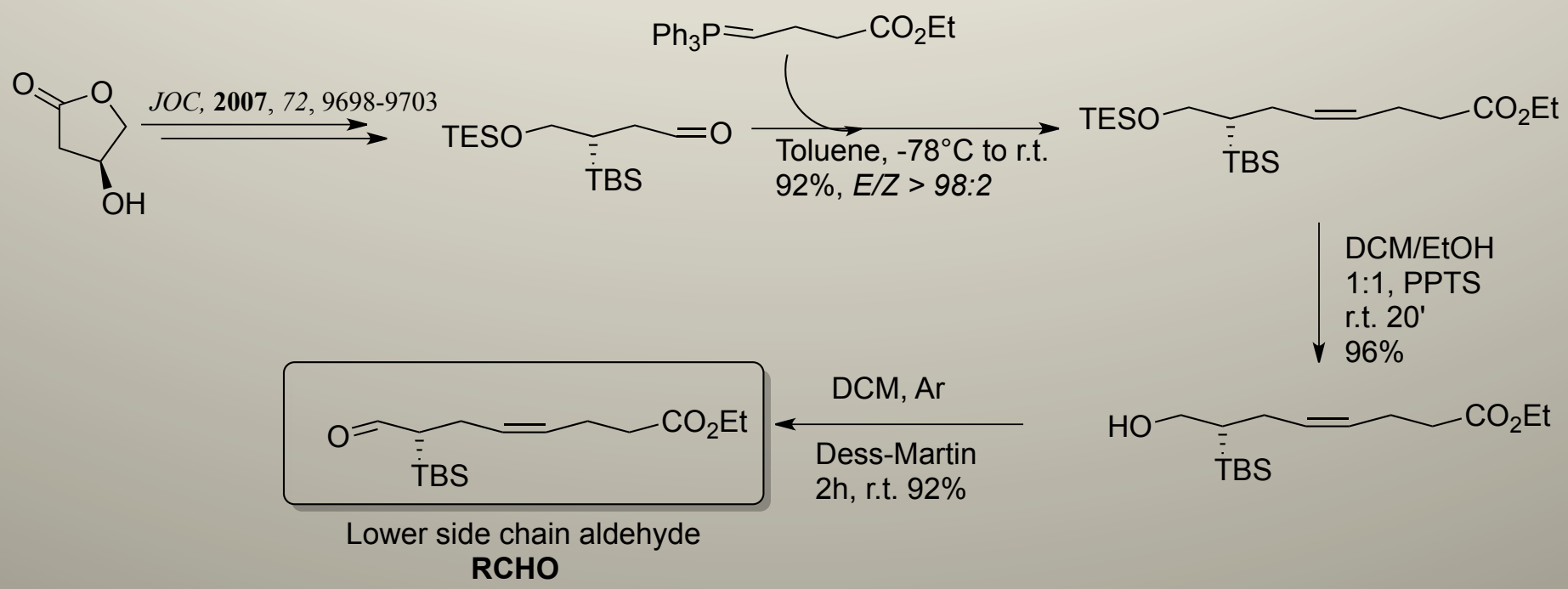
Sintesi Totale di 7-J₄-NeuroP e 14-A₄-Metabolita

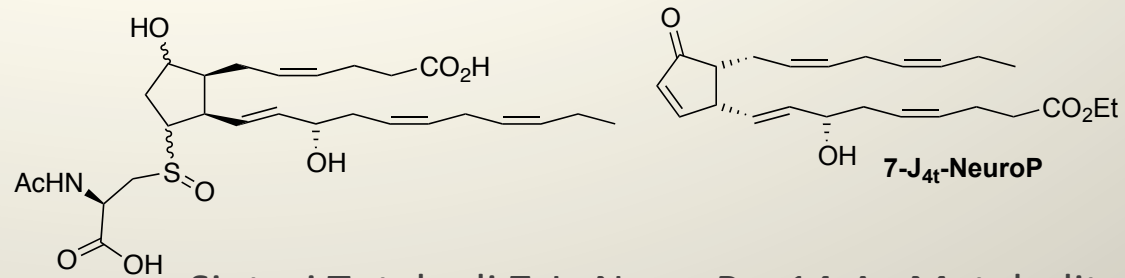
Cyclopentene core total synthesis





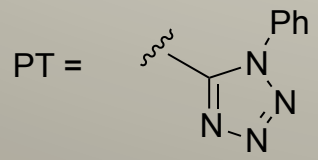
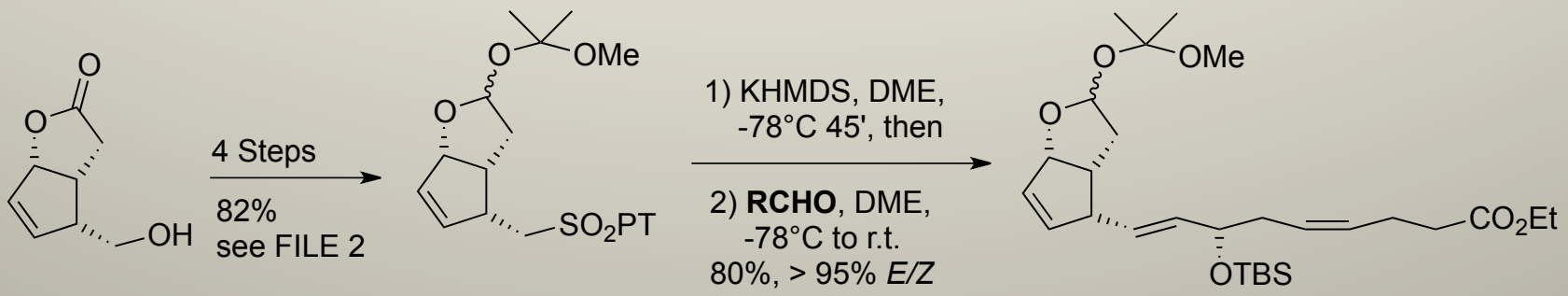
Sintesi Totale di 7-J₄-NeuroP e 14-A₄-Metabolita

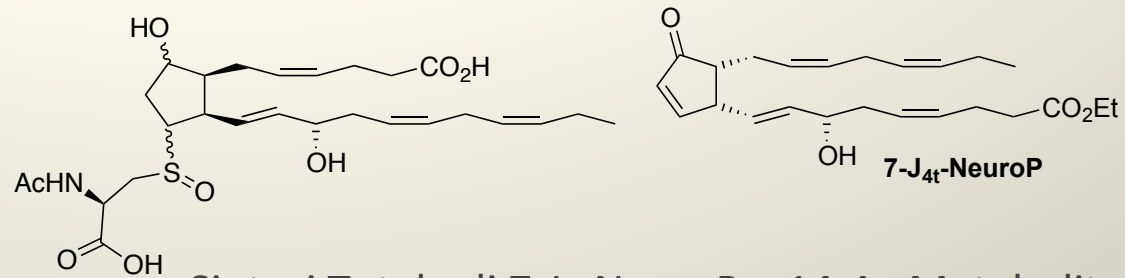




Sintesi Totale di 7-J₄-NeuroP e 14-A₄-Metabolita

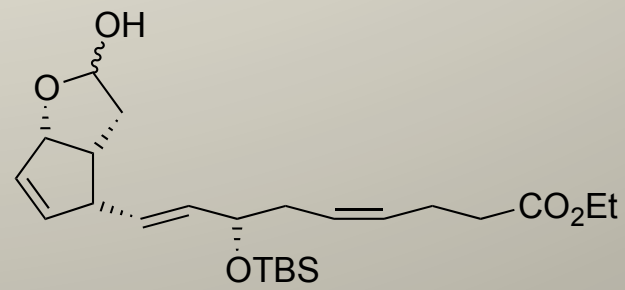
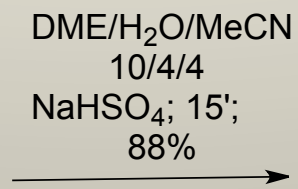
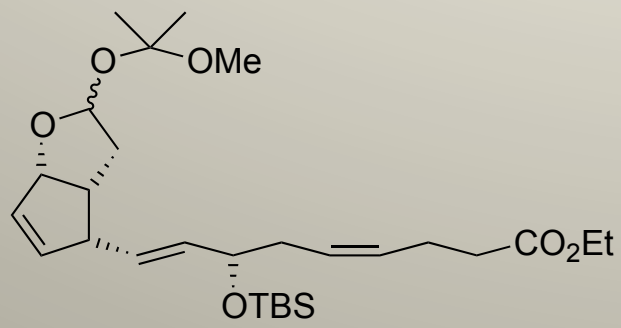
Installation of Chains and final steps

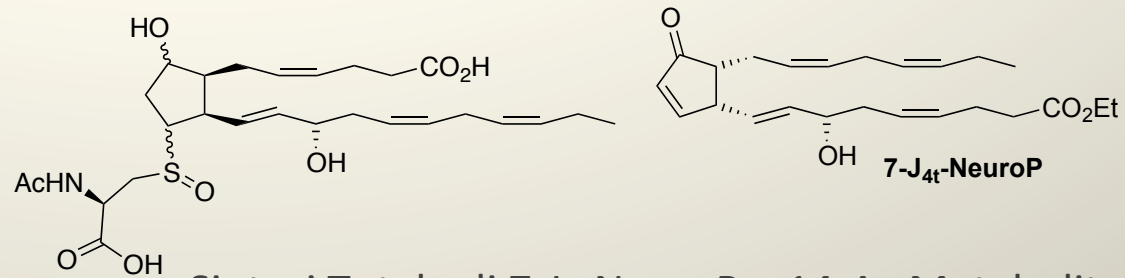




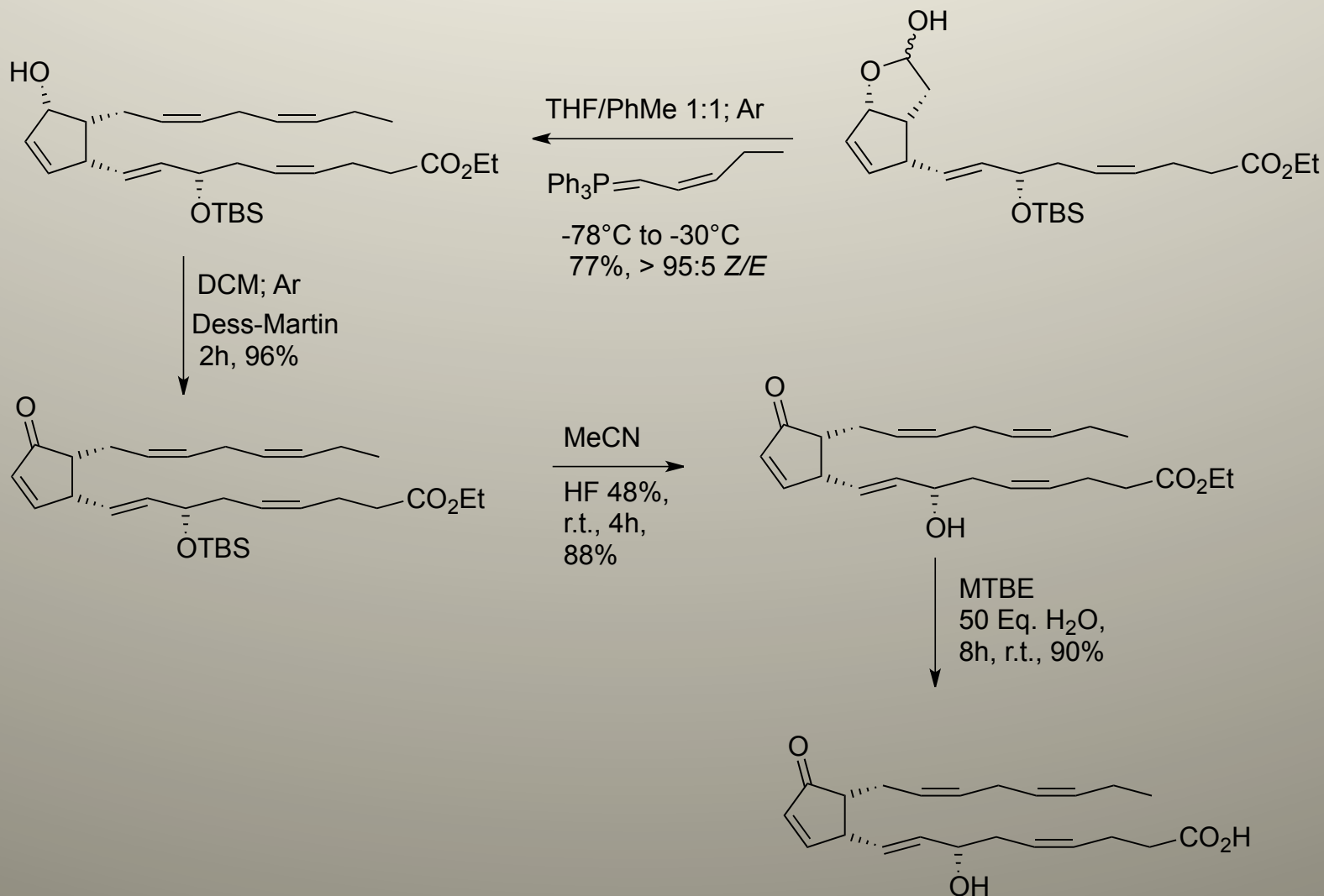
Sintesi Totale di 7-J₄-NeuroP e 14-A₄-Metabolita

Installation of Chains and final steps





Sintesi Totale di 7-J₄-NeuroP e 14-A₄-Metabolita



7-J₄-NeuroP

7-J4-Et_Ester_130220170634

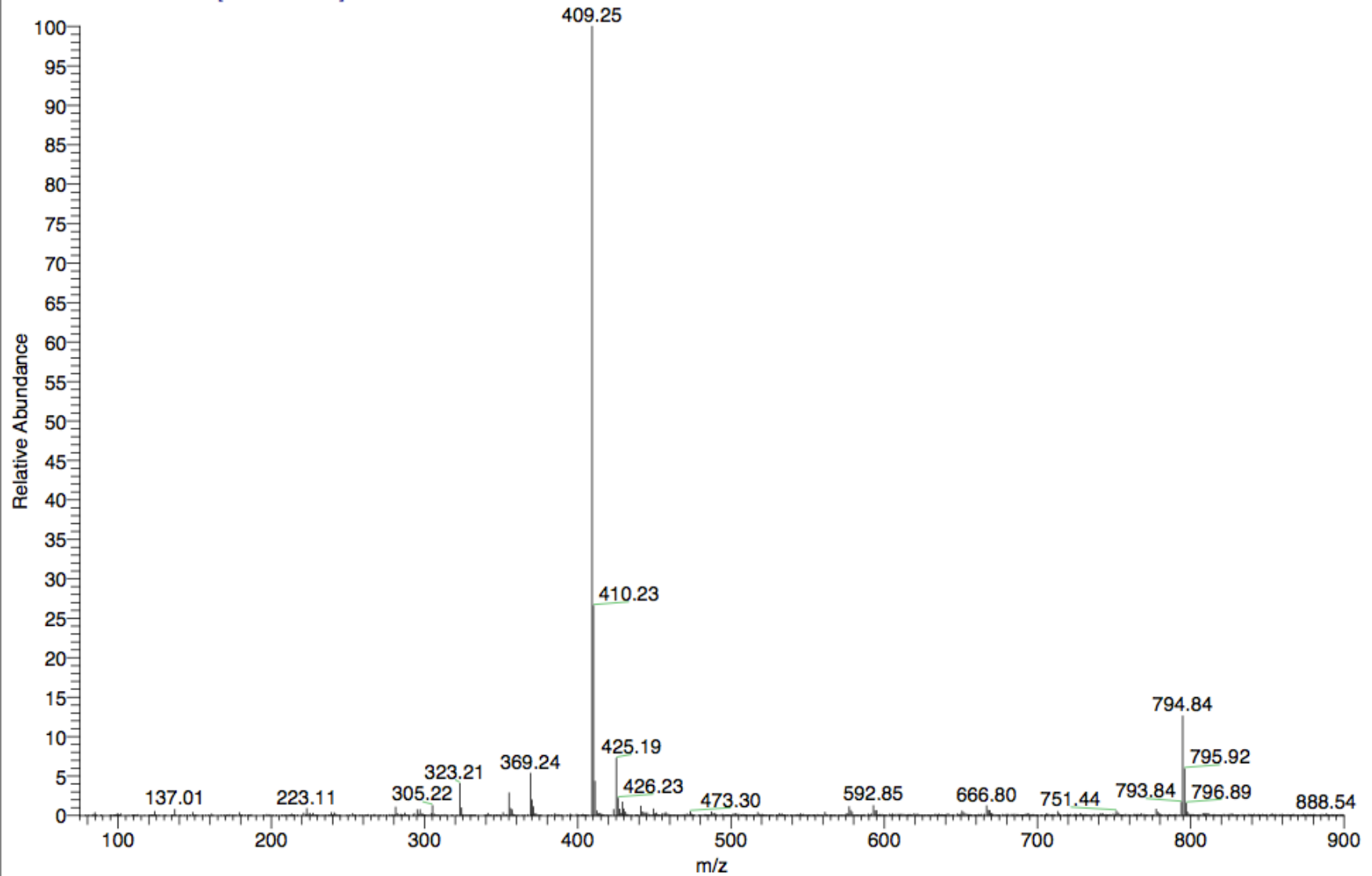
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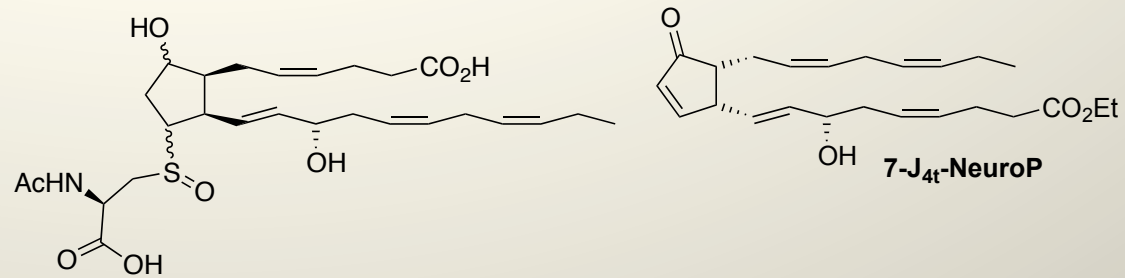
7-J4-Et_Ester

7-J4-Et_Ester

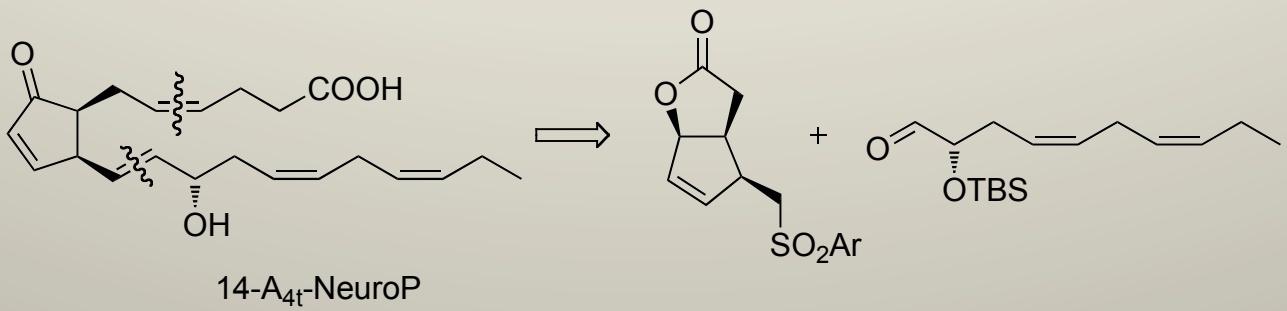
7-J4-Et_Ester_130220170634 #2 RT: 0.00 AV: 1 NL: 1.06E5

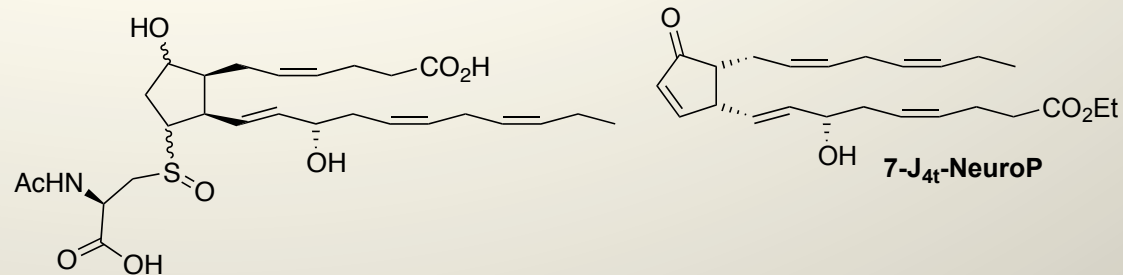
T: ITMS + c ESI Full ms [75.00-900.00]



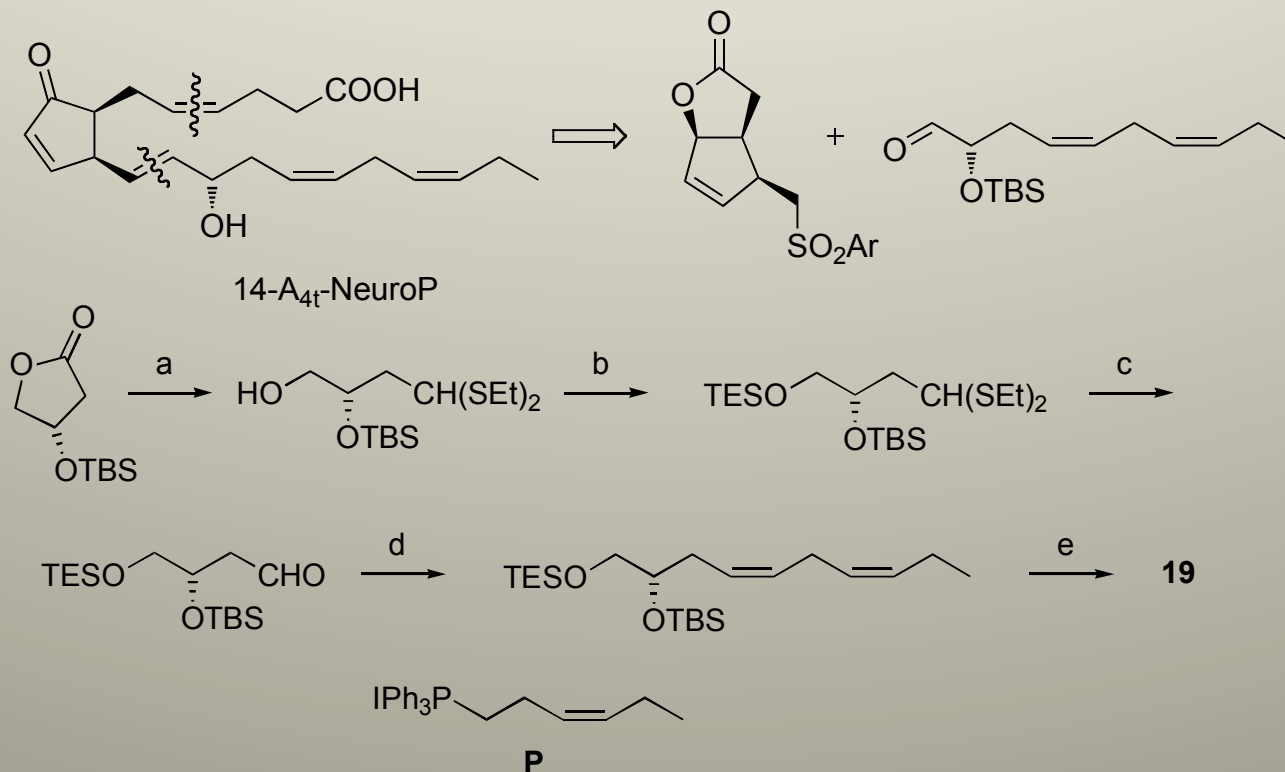


Sintesi Totale di 14-A_{4c}-NeuroP e 14-A₄-Metabolita

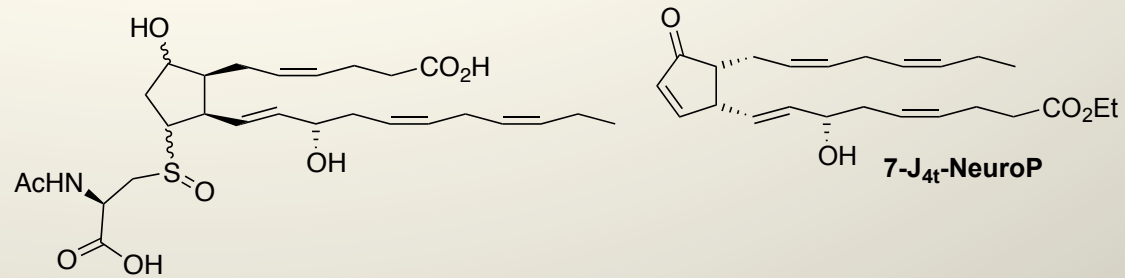




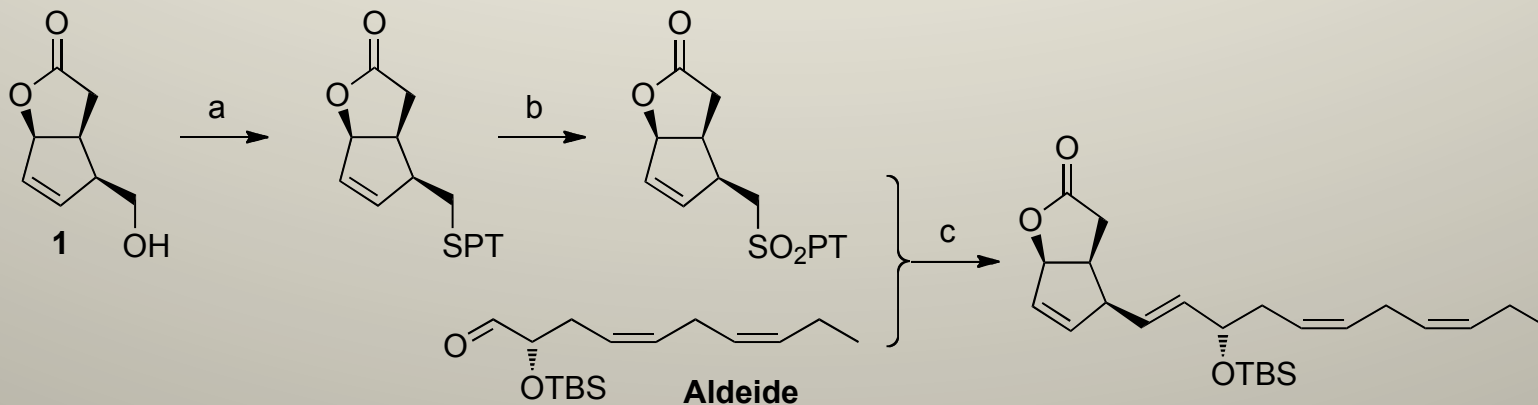
Sintesi Totale di 14-A_{4c}-NeuroP e 14-A₄-Metabolita



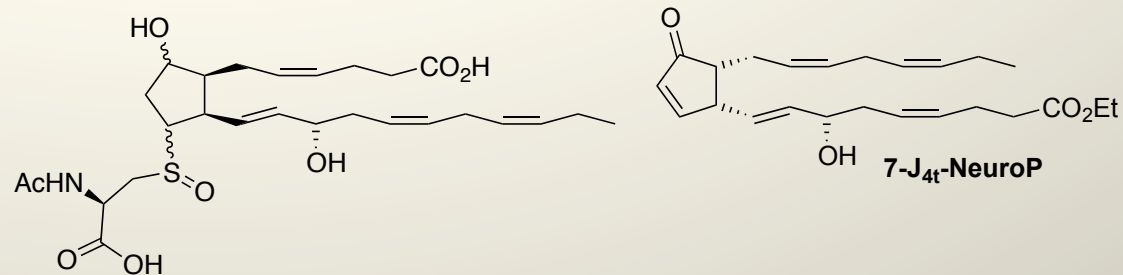
Condizione di reazione: (a) i. DIBAL-H, DCM, -78 °C, 98%; ii. EtSH, ZnCl₂, DCM, 93%;
(b) TESCl, Im, DMAP, DCM, 90%; (c) NBS, 2,6-lutidine, MeCN/H₂O/MeCOMe (8:2:1), 97%;
(d) KHMDS, P, PhMe, r.t., quindi si aggiunge l'aldeide, PhMe, -95 °C, 92%; (e) DMSO, (COCl)₂, NEt₃, DCM, 93%;



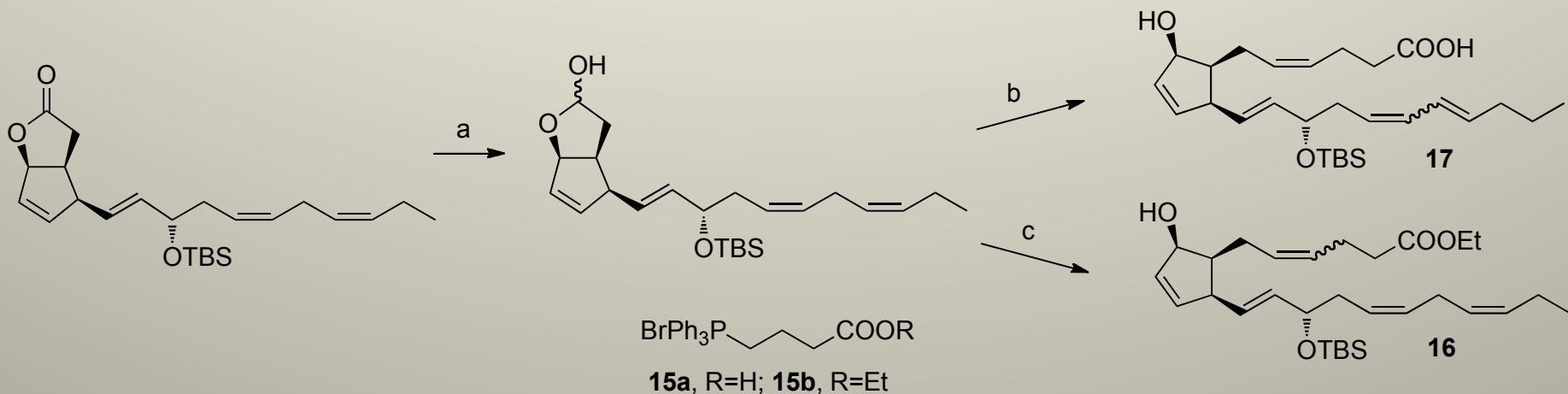
Sintesi Totale di 14-A_{4c}-NeuroP e 14-A₄-Metabolita



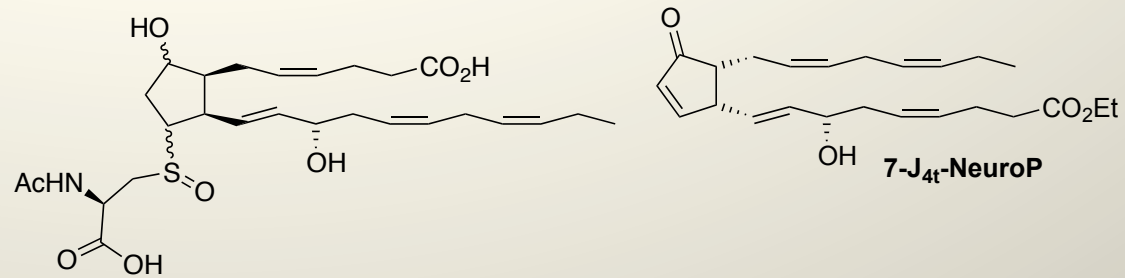
Condizioni di reazione: (a) PT-SH, Ph₃P, DEAD, PhMe, 96%; (b) H₂O₂, (NH₄)₂MoO₄, MeOH, 90%;
(c) KHMDS, DME, -78 °C, 1h, quindi aldeide, DME, -70 °C to r.t., 60%;



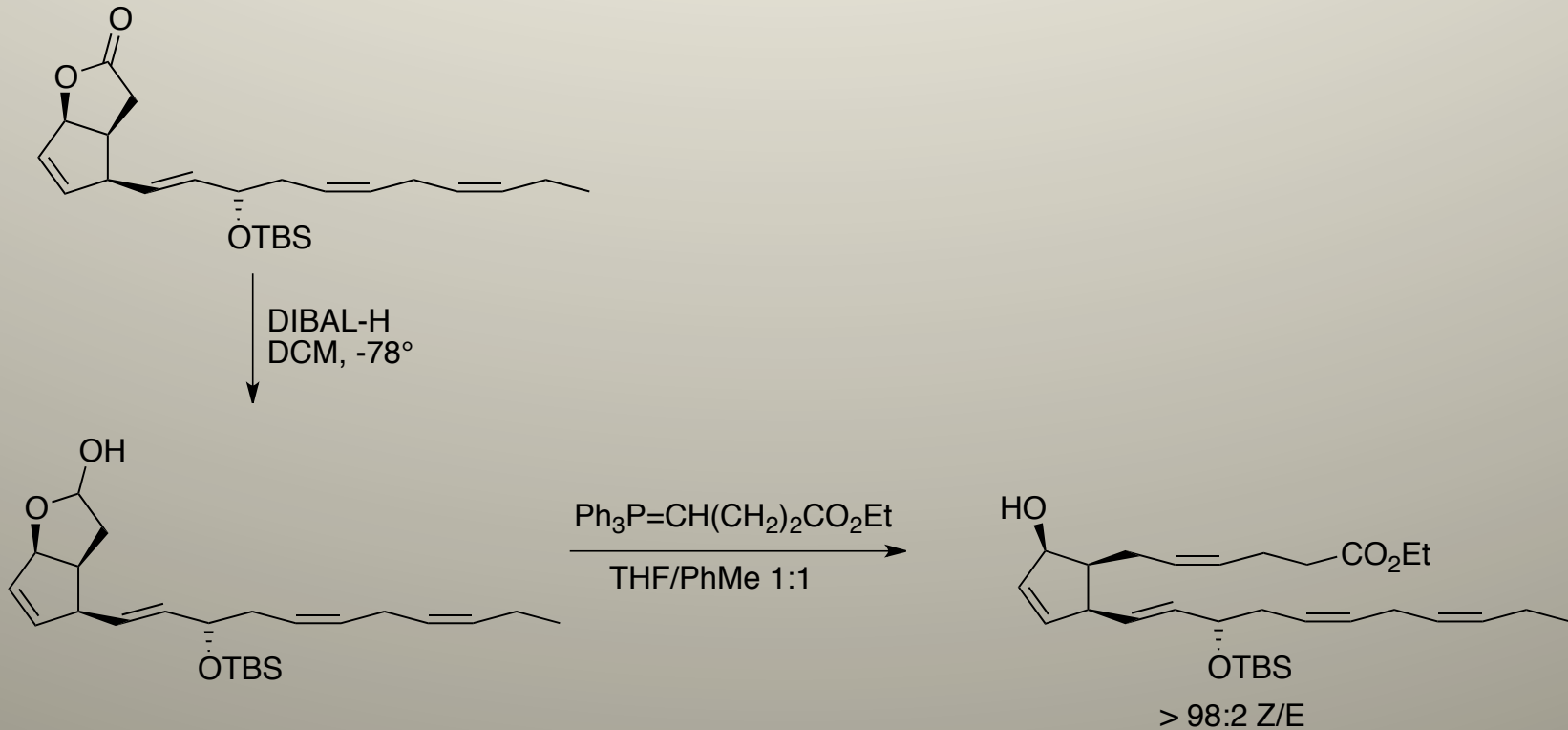
Sintesi Totale di 14-A_{4c}-NeuroP e 14-A₄-Metabolita

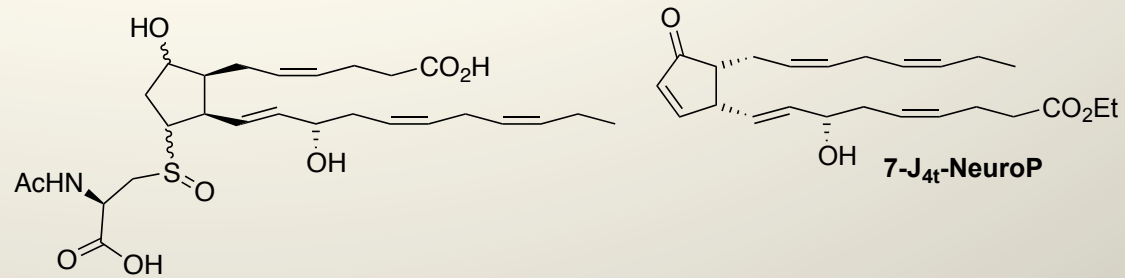


Condizioni di reazione: (a) DIBAL-H, DCM, -78°C, 96%; (b) $\text{Ph}_3\text{P}=\text{CHCH}_2\text{CH}_2\text{CO}_2\text{K}$ da **15a**, THF, 88%;
(c) $\text{Ph}_3\text{P}=\text{CHCH}_2\text{CH}_2\text{CO}_2\text{K}$ da **15b**, KHMDS, PhMe, 0 °C, 1h, quindi lattolo, PhMe, -70 °C to r.t., 90%;

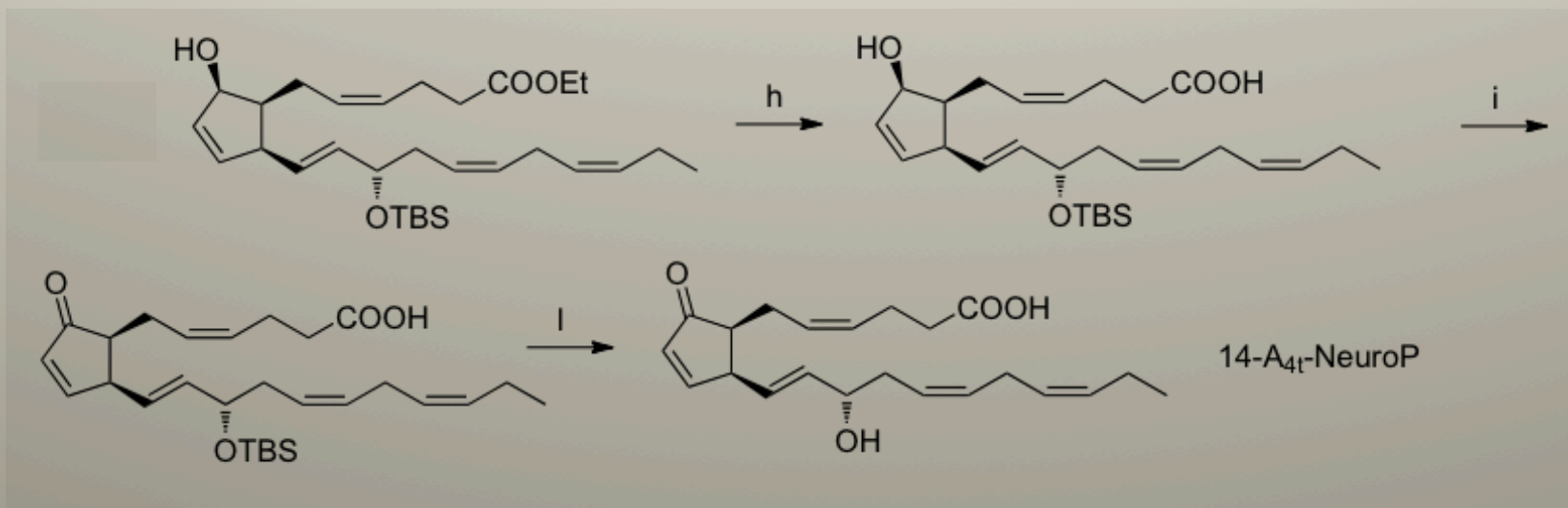


Sintesi Totale di 14-A_{4c}-NeuroP e 14-A₄-Metabolita

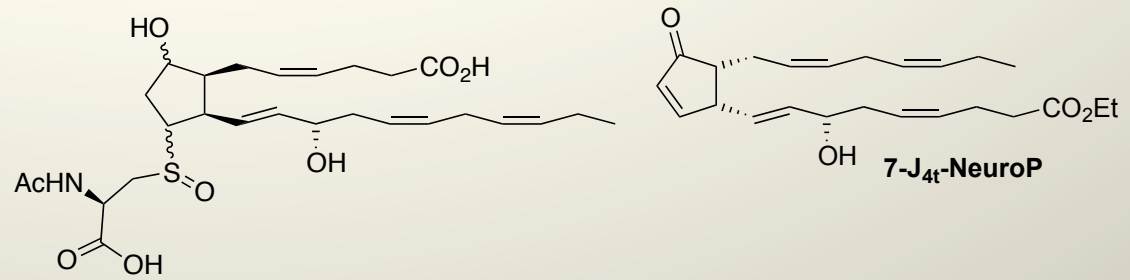




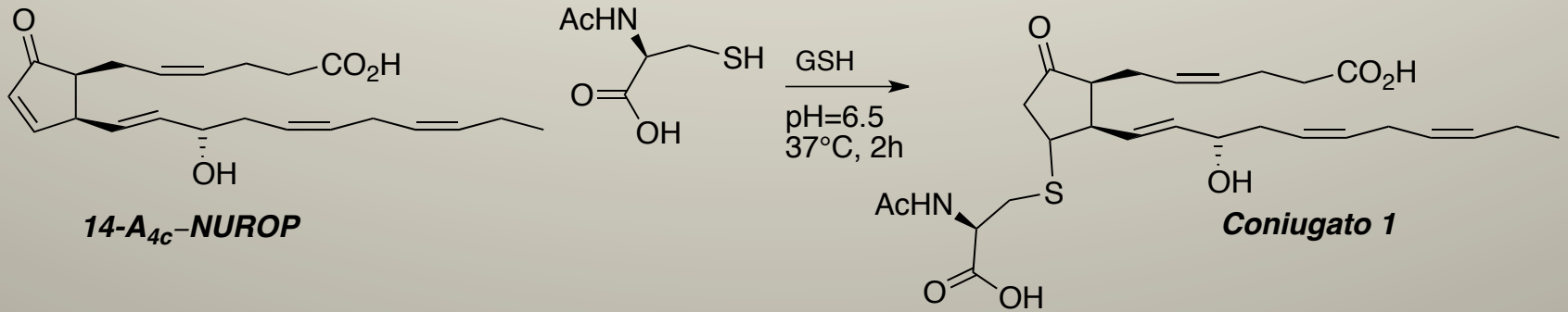
Sintesi Totale di 14-A_{4c}-NeuroP e 14-A₄-Metabolita

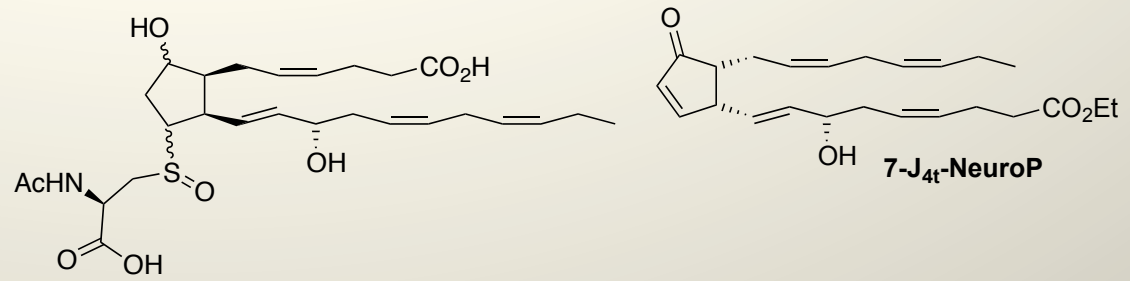


(h) Ba(OH)₂*8H₂O, MeOH, 99%; (i) DMP, DCM, 85%; (l) 48 % aq HF, MeCN, r.t., 95%.

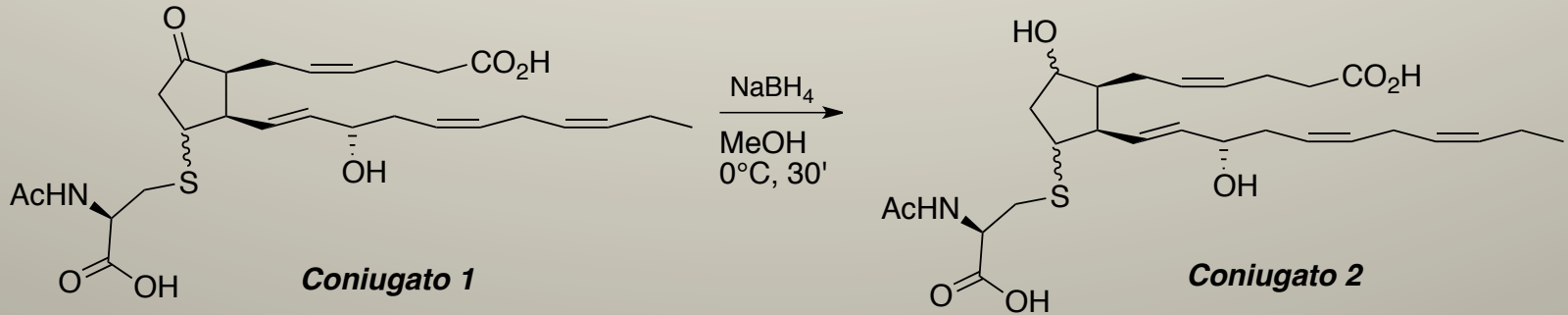


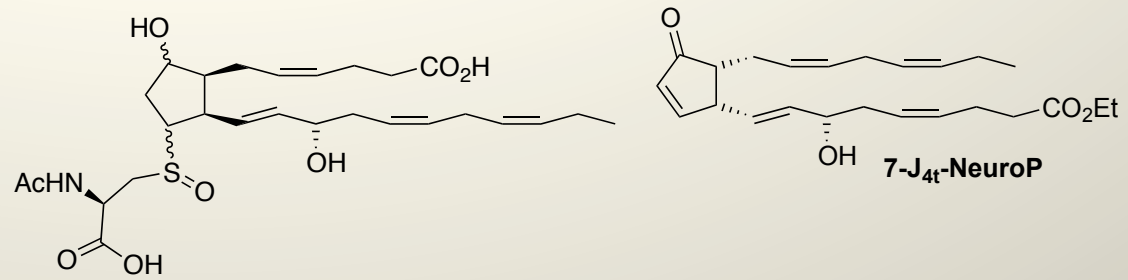
Sintesi Totale del 14-A₄-Metabolita



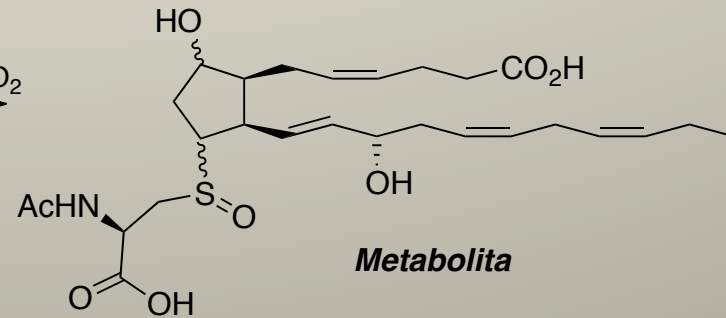
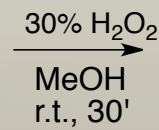
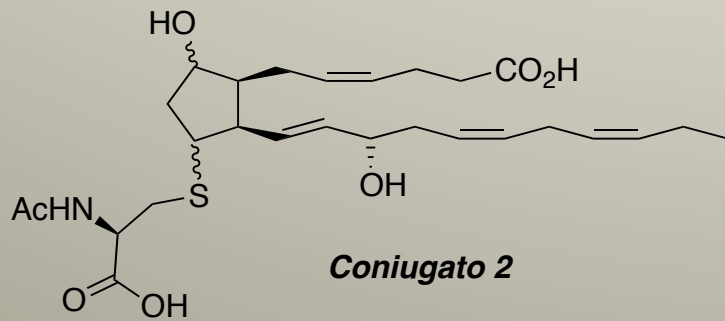


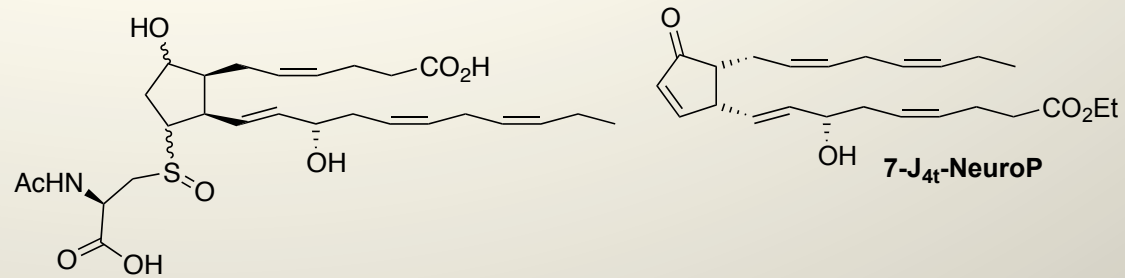
Sintesi Totale del 14-A₄-Metabolita



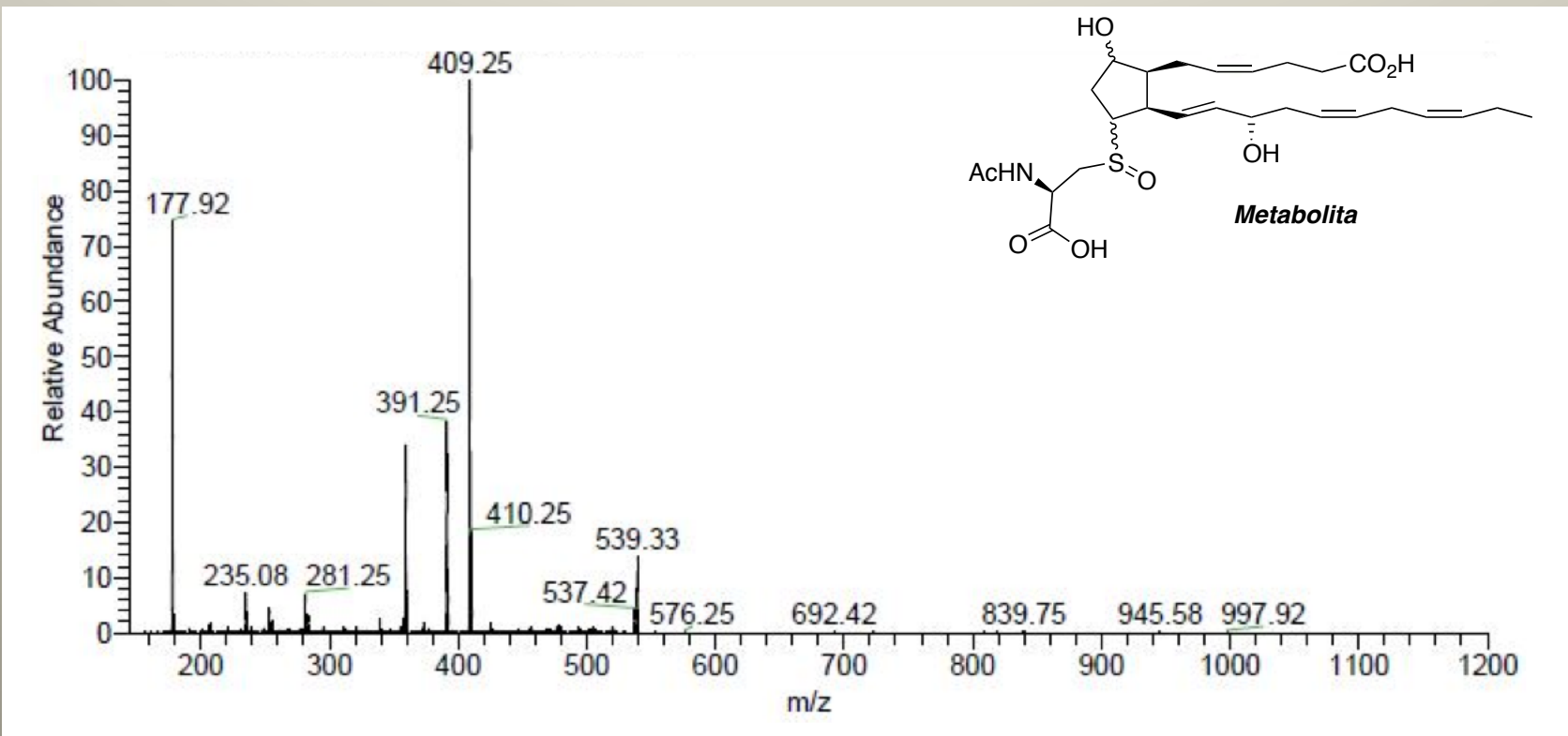


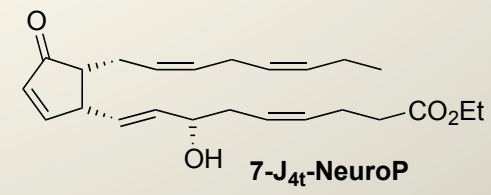
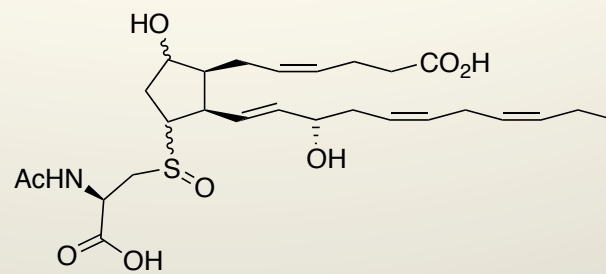
Sintesi Totale del 14-A₄-Metabolita



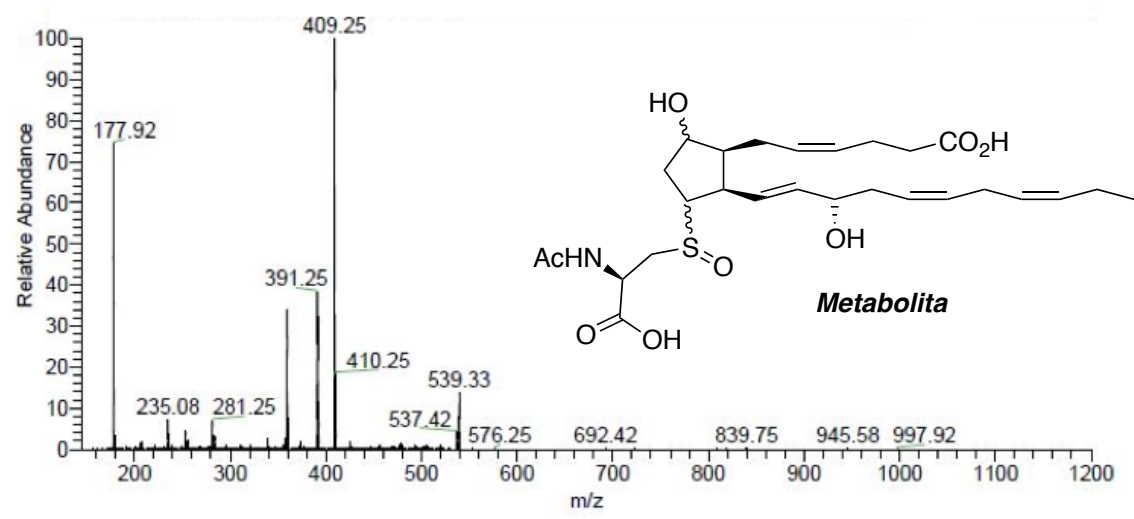
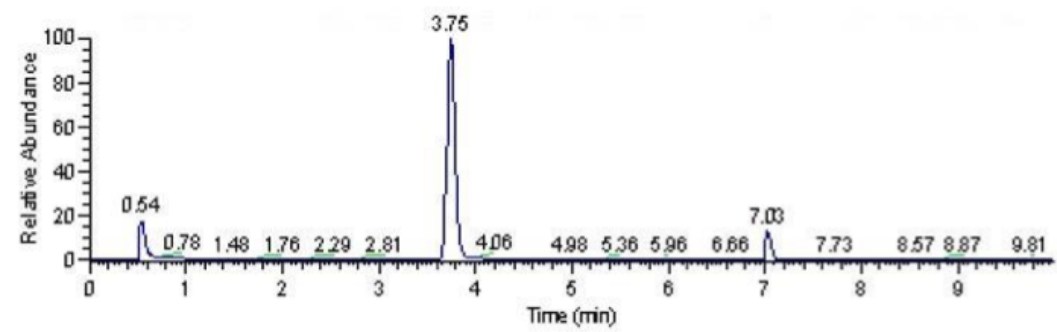


Sintesi Totale del 14-A₄-Metabolita



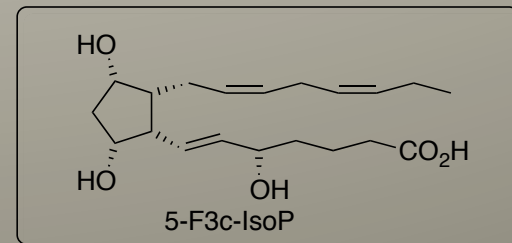
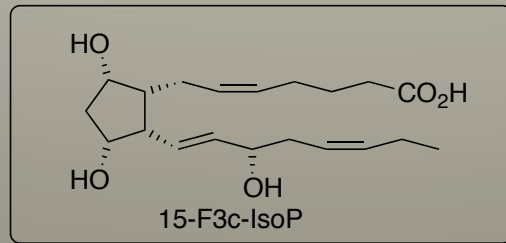
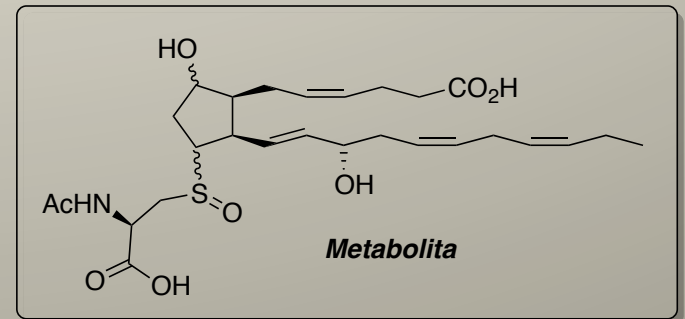
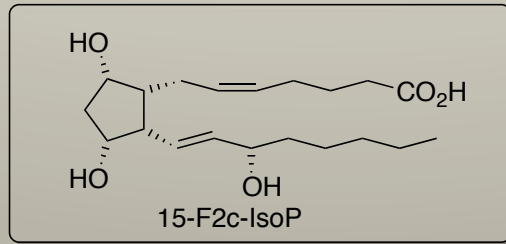


Sintesi Totale del 14-A₄-Metabolita



Cromatogramma UPLC-MS in SIM mode del metabolita dell'A₄-NeuroP (m/z 539.33) e relativo spettro CID del picco.

Colonna POROSHELL EC-C 18 ; miscela 7:3 acido acetico 0,1%/acetonitrile; flusso 0,15mL/min





CAMPIONE	F ₂ -IsoP	2,3-dinor-8-iso-PGF _{2α}	iPF _{3α}	A ₄ -metabolita
controllo	210	85	42	16236
F1	205	82	41	16452
F2	212	84	42	16352
F3	182	73	36	16053
F4	304	122	63	17534
F5	211	86	43	16230
F6	208	83	42	16267
F7	203	82	40	15933
F8	198	78	39	15642
F9	1263	503	258	25689
F10	206	82	40	16238
F11	404	162	80	20348
F12	107	42	21	11034
F13	407	163	81	20378
F14	450	180	90	20632
F15	215	87	43	16407
F16	130	52	26	14670
F17	1268	507	254	25711
F18	3780	1513	756	29651
F19	187	74	37	15736
F20	190	75	38	15798
F21	183	73	36	15478
F22	128	51	26	14674
F23	116	46	23	12479
F24	197	78	39	15634
F25	206	82	41	16078
F26	202	80	39	14843
F27	401	160	81	20352
F28	84	33	17	9672
F29	252	101	51	16890
F30	525	210	106	21041
G	273	109	54	16897

Grazie!!!



Progetto “LOMBARDIA ECCELLENTE” -
Cluster di Eccellenza
PER LE SINERGIE TRA PRODUZIONE AGROALIMENTARE E RICERCA MEDICO / SCIENTIFICA

