

## Supplementary Materials

Figure S1: The insertion of AtaPT in MCS-1 of pCDFDuet-1 vector

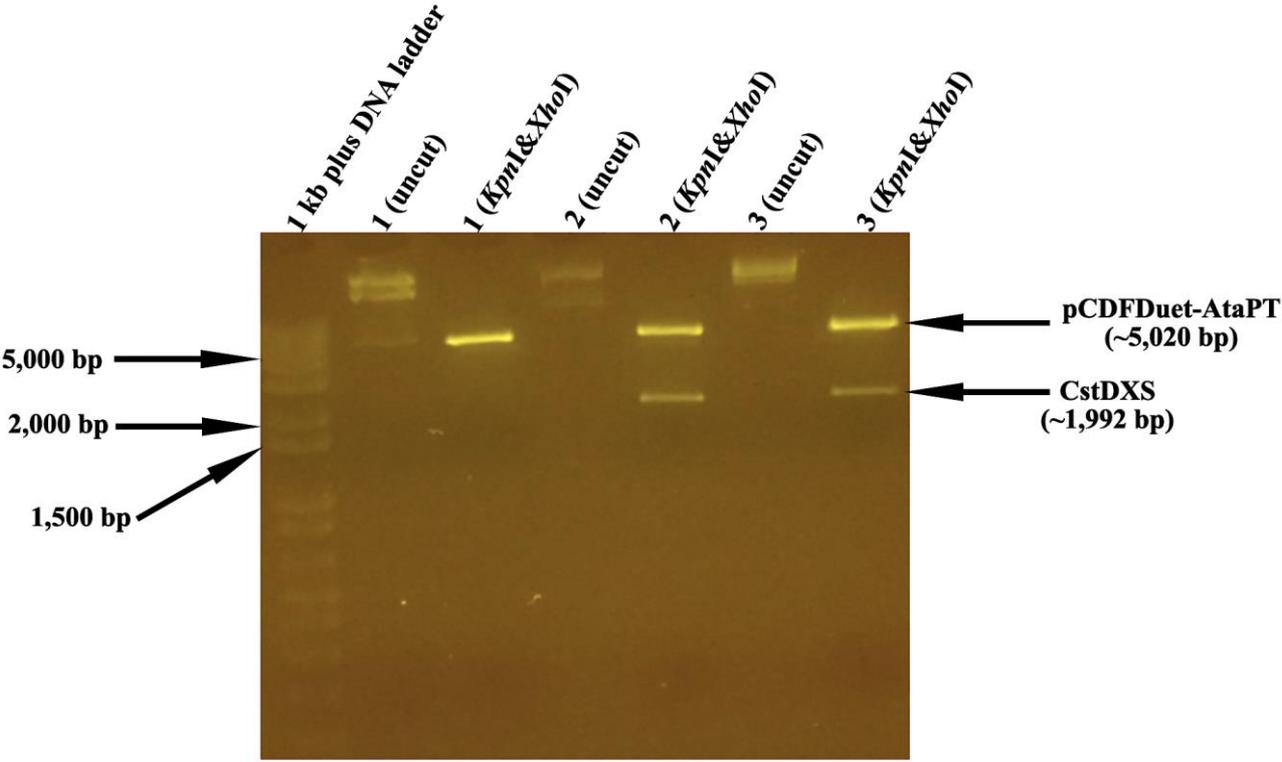
CGGGAATCGAATCGCGAGTATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATCCC  
CCTCTAGAAATAATTTTGTTTAACTTTAAG**AAGG**GAGATATACCATGGGCAGCAGCC**CATCAC**  
**6XHIS** **RBS** **6XHIS**  
**CATCATCACCCACAGCCAGGATCCG**ATG****CTCCCCCATCAGACAGCAAAGATCCCCGGCCCT  
**BamHI Start codon**  
GGCAGATCCTGAGCCAGGCGCTCGGCTTCCCCAATTACGACCAGGAACTGTGGTGGCAAAA  
CACGGCGGAGACGCTCAACCGCGTCTCGAACAGTGCATTACAGCGTGCATCTGCAGTAC  
AAGTACCTCGCCTTCTACCACAAATACATCTCCCCAGTCTGGGCCCTTCCGCCGCCCGG  
GCGTCGAGCCCGAGTACATCAGCGGCCCTCTCCACGGCGGCCATCCGCTGGAGATCAGCG  
TCAAGATCGACAAGTCCAAAACGATCTGCCGGCTCGGATTGCAGGCGATCGGGCCGCTCGC  
CGGCACCGCGCGGACCCGCTCAACAGCTTCGGCGACCGTGAACCTCTCAAGAATCTCGCG  
ACGCTGCTGCCGCACGTCGACCTGCGCTTGTTCGACCACCTTCAACGCGCAGGTCGGGCTCG  
ACCGCGCGCAGTGCGCCGTCGCCACCACCAAGCTCATCAAGGAGAGCCACAACATCGTCTG  
CACGTCGCTCGACCTCAAAGACGGCGAGGTCATTCCCAAGGTCTACTTCTCCACCATCCCG  
AAGGGGCTCGTCACCGAAACGCCGCTGTTTCGACCTCACCTTTGCGGCGATCGAGCAGATGG  
AGGTATACCACAAAGACGCGCCGCTGCGGACGGCGCTGTCGTCGCTGAAGGACTTTTTTGCG  
CCCGCGCTGCCACCGACGCCAGCATTACCCCGCCCCTGACCGGCCTCATCGGCGTCGAT  
TGTATCGACCCCATGCTGTCCCGGCTGAAGGTGTACCTGGCCACCTTTCGCATGGACCTGT  
CCTTGATCCGCGACTACTGGACGCTGGGCGGCTTGCTGACGGACGCGGGCACGATGAAAGG  
CCTGGAGATGGTGGAGACGCTGGCTAAGACGCTGAAGCTGGGCGACGAGGCCCTGCGAGACG  
CTGGACGCGGAGCGTCTGCCGTTTGAATCAACTATGCGATGAAGCCGGGGACGGCGGAGT  
TGGCGCCGCCCAGATCTACTTCCCCTGCTGGGCATTAATGACGGGTTTCAATGCGGATGC  
TCTAGTTGAATTCTTCCAGTACATGGGCTGGGAGGACCAGGCGAATCGGTACAAGGATGAA  
CTGAAGGCGAAATTTCCCAATGTGGATATCTCGCAGACCAAGAACGTCCATCGCTGGCTGG  
GAGTGGCGTACTCCGAGACCAAGGGCCGTCGATGAACATTTACTACGATGTGGTTGCGGG  
AAATGTCGCACGTGTG**TGA**GCGGCCGC  
**Stop codon**  
**NotI**

Figure S2: The insertion of CstDXS in MCS-2 of pCDFDuet-1 vector

**RBS**

TCTTAGTATATTAGTTAAGTATAAGA**AGGAG**ATATACATATGGCAGATCTCAATTGGATAT  
CGGCCGGCCAGCCGATCGCTGACGTC**GGTACCAT**ATGGCATCACTTTCAGAAAGTGCAGAGTA  
TCACTCAAACAGACCAGCAACACCTCTACTGGACACCATCAACTTTCGAATTCATATGAAA  
AATCTATCAATCAAGGAAGTGAAGCAGCTAGCAGAAGAGCTCCGTTTCAAGATGTTATTTTCA  
ATGTTTCTAAAAGTGGGGTCACTTGGGATCAAGCCTTGGTGTGTTGAACTTACTGTGGC  
TCTTCACTATATTTTCAATACTCCTCAAGATAAGATTCTGTGGGATGTTGGCCATCAGTCT  
TACCCCAACAAAATCCTTACCGGGAGAAGAGACAGGATGCGCACAATTAGACAGACTAATG  
GGCTTCTGGGTTTACCAAACGAGCTGAGAGCGAACATGATTGCTTGGCACTGGCCATAG  
CTCTACCACTATTTCTGCAGGCTTGGGAATGGCAGTGGGGAGAGATTTAAAAGAAAAGAAAG  
AACAATGTTGTGGCTGTTATAGGAGACGGAGCCATGACAGCAGGACAAGCTTATGAAGCTA  
TGAACAATGCAGGATACTTGGACTCCGATATGATTGTTATTCTCAATGACAACAAACAGGT  
TTCTTTACCAACTGCTACGCTTGATGGACCAATACCACCTGTGGGAGCTTGGAGCAGTGCT  
CTTAGCAGGTTGCAATCCAACCGGCCTTTAAGAGAACTAAGAGAGATTGCCAAGGGTGTTA  
CAAAGCAAATGGTGGACAGATGCATGAGTTGGCTGCAAAGGTTGATGAATATGCACGTGG  
TATGATAAGTGCTTCTGGATCATCTCTTTTTGAAGAGCTTGGTTTGTATTATATTGGTCCA  
GTTGACGGTCACAATATCGAGGATCTTGTGATATCCTTAAAGAGGTTAAAAGCACCAAA  
TCAACTGGGCCAGTCTTGATTTCATGTGCTTACTGAGAAAGGCCGGGGATATCCATATGCTG  
AGAGAGCCGCAGACAAGTACCACGGAGTAACCAAGTTTGATCCTGCAACCGGGAAGCAATT  
TAAGTCTGGTGGAAAGTACACAGTCGTACACGACATACTTTGCAGAGGCTTGGATTGCAGAA  
GCAGAAGTGGACAAGGATATTGTCGCAATTCATGCTGCAATGGGAGGAGGAACAGGCTTGA  
ATCTCTTCCATCGCCGTTTCCCAAATAAATGCTTTGATGTTGGGATAGCAGAGCAGCATGC  
TGTTACATTTGCTGCTGGATTGGCCTGCGAAGGCCTTAAACCTTTCTGTGCTATCTATTCA  
TCTTTCATGCAGAGGGCTTACGACCAGGTGGTGCACGATGTGGATTTGCAGAAACTTCCTG  
TAAGATTCGCGATGGATAGAGCTGGCCTCATCGGAGCAGATGGTCCACACATTGTGGAGC  
CTTTGATGTTACTTTCATGGCGTGCCCTCCTAACATGGTGGTGGTGGCTCCTTCTAATGAA  
GCAGAACTCTTTAACATGGTTGCCACTGCTGCTGCCATAGATGATCGTCCAAGCTGTTTCC  
GATATCCGAGAGGAAACGGTATCGGTGTTCCNCTGCCNCTGGAAACAAAGGCATTCCNT  
TGAGGTTGGAAAAGGAAGGATCTTGATTGAGGGGGAGCGAGTGGCGCTACTGGGATATGGT  
GCAGCAGTTCAAACTGTCTAGCTGCTGCATCTTTAGTTGAAACCCCGGCTTACGTGTAA  
CTGTTGCAGATGCTAGATTTTGTAACCATTAGATCAATCTCTGATTCGAAGTCTAGCGAA  
GTCNCACGAAGTTTTGATTACGGTTGAAGAAGGCTCAATTGGGGGATTTGGATCTCATGTT  
GCTCATTTTTATGGCTCTCAATGGCCTTCTTGATGGCANCCTTAAGTGGCGACCGCTCGTTN  
TTCCCGATCGATATATTGAGCNCGGATCNCGGCAGACCAGTTGATAGAGGCAGGTTAAC  
NCCATCTCNCATTGCCGCAACAATATTCAACATACTTGGAAACAAAAGAGAAGCTCTGCAA  
ATTATGTCAGCACTCGAGTCTGGT**AAAGAAACCGCTGCTGCGAAATTTGAACGCCAGCACA**  
**TGGACTCG** *XhoI* **S.Tag**

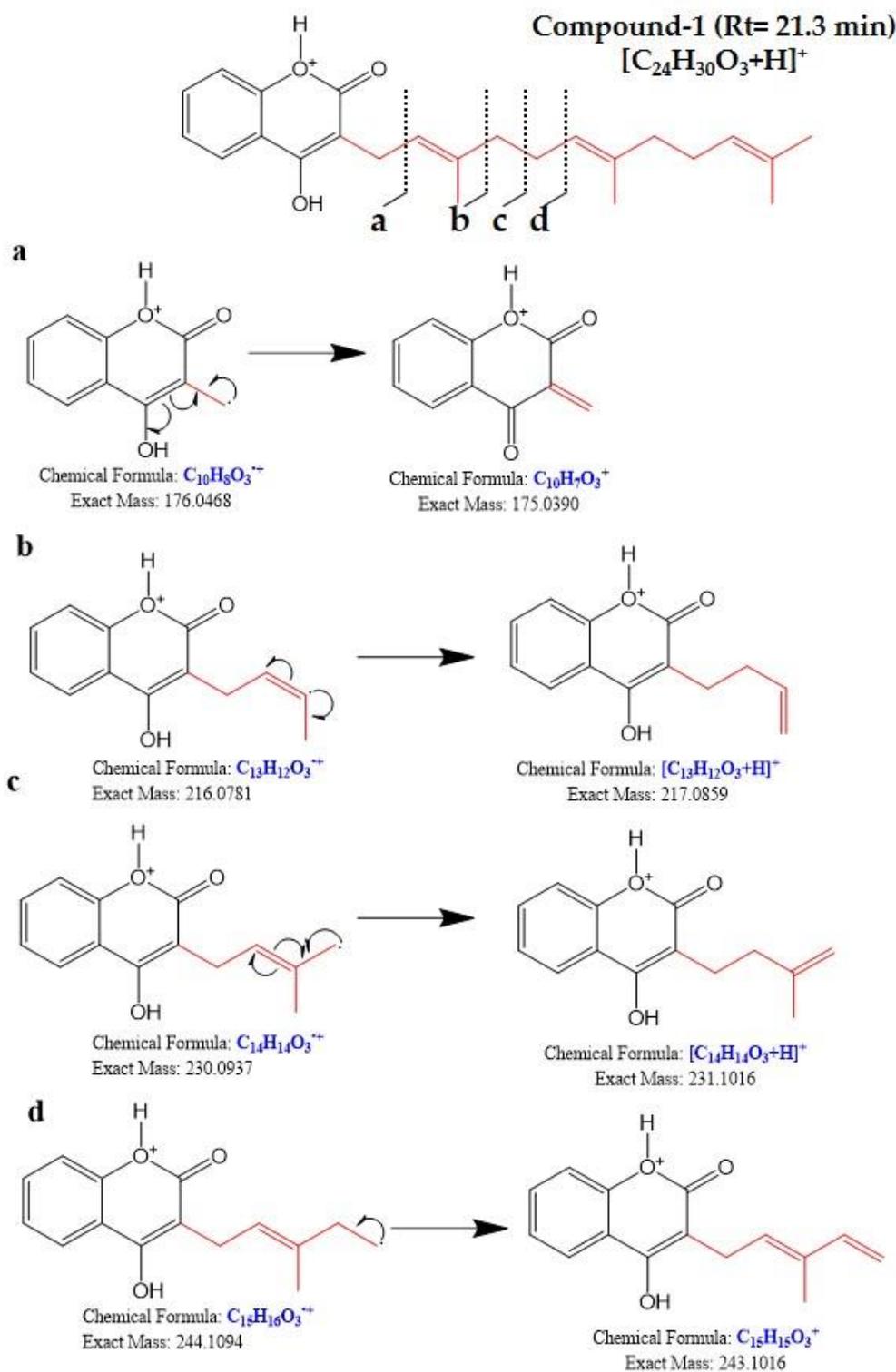
**Figure S3:** Verified insertion of CstDXS (~1992 bp) in pCDFDuet-AtaPT (~5,020 bp) via *Kpn*I and *Xho*I digestion



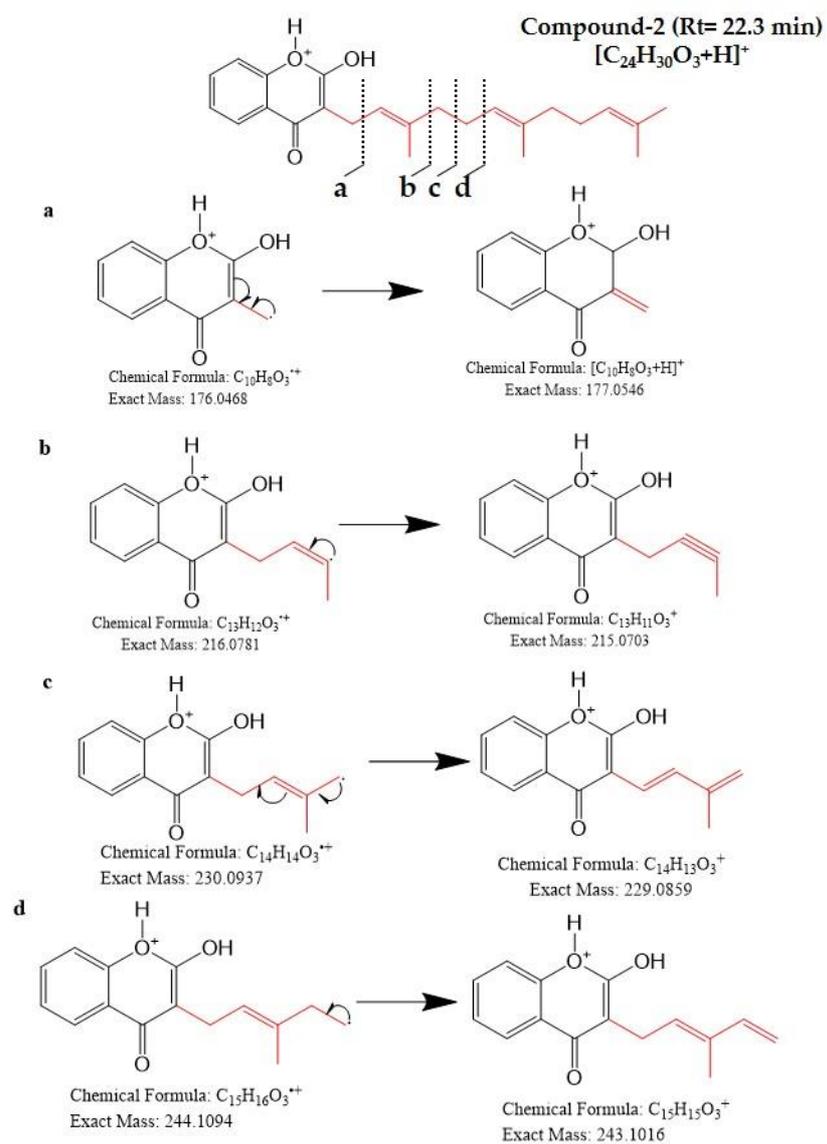
**Figure S4:** The raw mass data for putative ferulenol (2)

<b>Compound-1</b>	
<b>Molecular ion 365.2120 RT 21.3 min</b>	
<b>m/z</b>	<b>Intensity</b>
96.9611	128
120.0216	132
161.0249	400
174.0305	436
187.0397	580
200.0827	172
213.0559	656
214.0597	308
227.0714	604
228.02792	1432
229.02792	416
365.2154	960

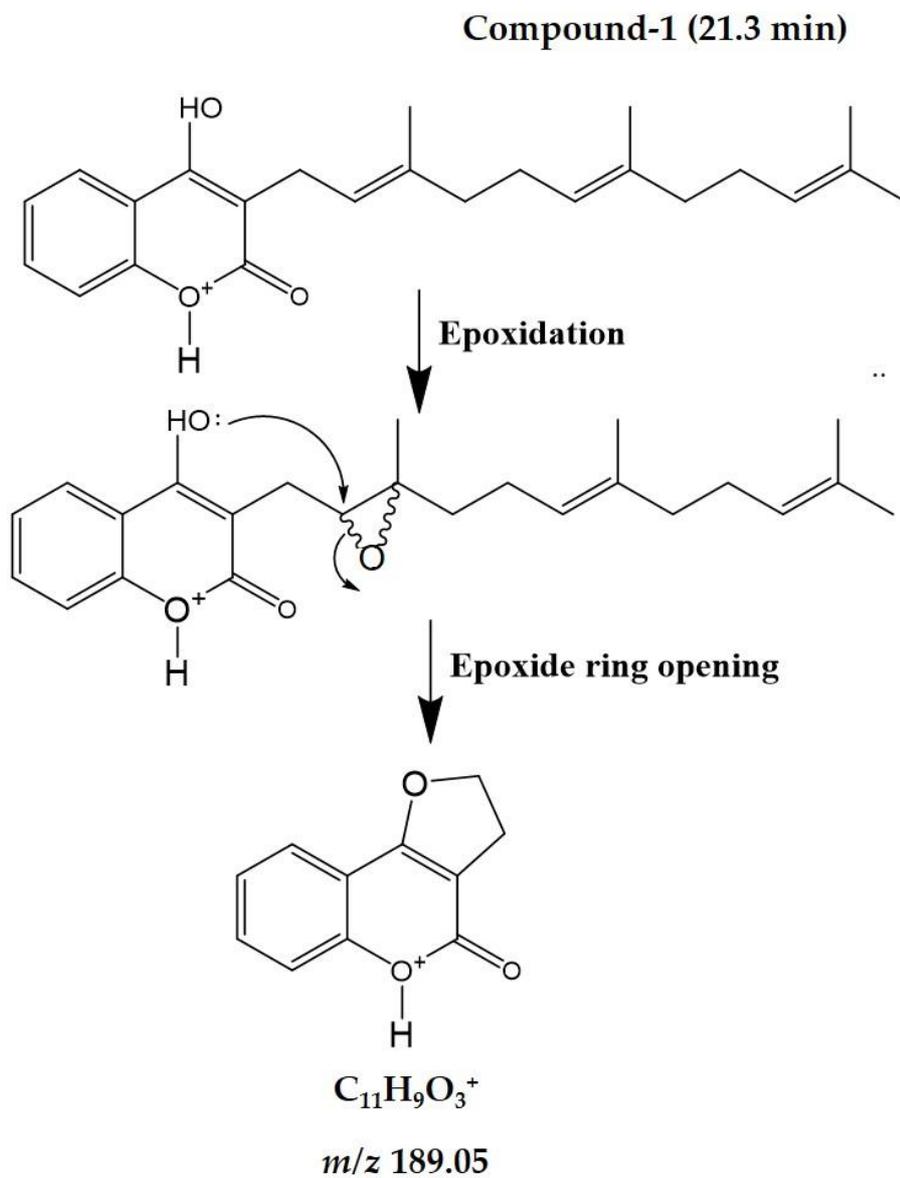
**Figure S5:** The proposed reaction mechanisms illustrating the various chemical losses present in the MS/MS spectrum of compound-1



**Figure S6:** The proposed reaction mechanisms illustrating the various chemical losses present in the MS/MS spectrum of compound-2



**Figure S7:** Figure S7: The postulated mechanisms underlying the formation of ion  $m/z$  189.05 of compound-1



**Figure S8** The postulated mechanisms underlying the formation of ion  $m/z$  189.05 of compound-2

