Supplementary Materials

Identification of Degradation Products of the New Anticancer Drug Substance ONC201 by Liquid Chromatography–High-Resolution Multistage Mass Spectrometry

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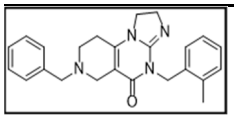
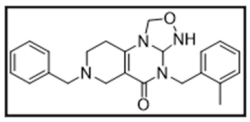
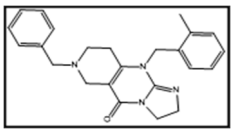
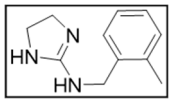
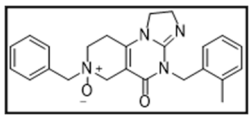
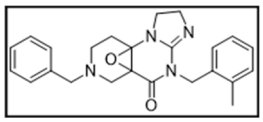
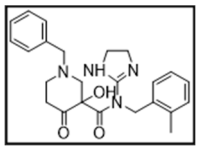
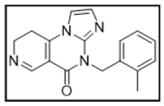
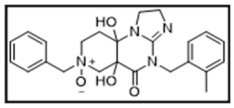
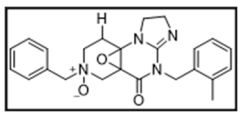
Table of contents

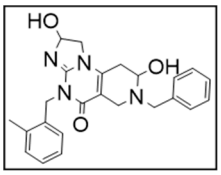
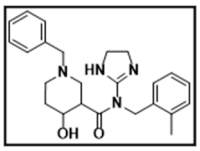
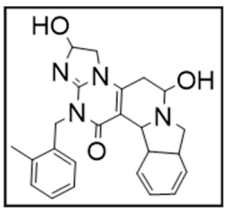
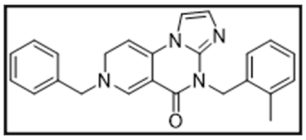
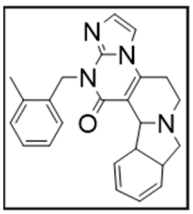
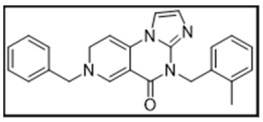
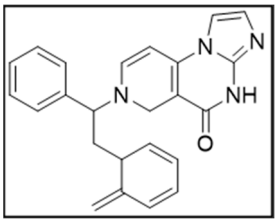
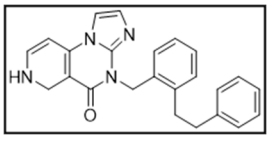
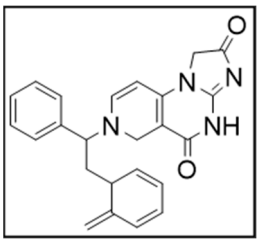
List of table

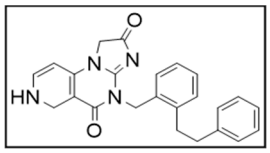
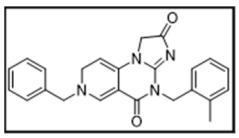
List of figures

Table

Table S1 : relative retention time, name, structures, molecular formula, stress factor(s) leading to DP formation and results of the in silico assessment for the identified compounds

Relative retention time	Name	Structure	Molecular formula	Stress factor(s) leading to DP Formation	Mutagenicity		ICH M7 class
					QSAR software	Rule based software	
1	ONC201		$C_{24}H_{26}N_4O$		No	Yes	Not applicable
0.86	DP390		$C_{23}H_{26}N_4O_2$	Oxydative	No	Yes*	Class 4
0.86	ONC201 isomer		$C_{24}H_{26}N_4O$	Light	Yes	No	Class 3
0.92	DP189		$C_{11}H_{15}N_3$	Oxydative and light	No	No	Class 5
0.99	DP402-1		$C_{24}H_{26}N_4O_2$	Oxydative	No	Yes*	Class 4
0.99	DP402-2		$C_{24}H_{26}N_4O_2$	Oxydative	Yes	Yes**	Class 3
0.99	DP420		$C_{24}H_{28}N_4O_3$	Oxydative	No	No	Class 5
1.05	DP292		$C_{17}H_{16}N_4O$	Light	Yes	No	Class 3
1.05	DP436		$C_{24}H_{28}N_4O_4$	Oxydative	Yes	No	Class 3
1.13	DP418		$C_{24}H_{26}N_4O_3$	Oxydative	No	Yes*	Class 4

1.24	DP418-1		$C_{24}H_{26}N_4O_3$	Oxydative and light	Not applicable	Yes*	Class 3
1.26	DP406		$C_{24}H_{30}N_4O_2$	Oxydative	No	No	Class 5
1.29	DP418-2		$C_{24}H_{26}N_4O_3$	Oxydative and light	Not applicable	Yes*	Class 3
1.31	DP384-1		$C_{24}H_{24}N_4O$	Light	Yes	No	Class 3
1.31	DP384-2		$C_{24}H_{24}N_4O$	Light	Yes	No	Class 3
1.4	DP382-1		$C_{24}H_{22}N_4O$	Light	No	No	Class 5
1.4	DP382-2		$C_{24}H_{22}N_4O$	Light	No	No	Class 5
1.4	DP382-3		$C_{24}H_{22}N_4O$	Light	No	No	Class 5
1.42	DP398-2		$C_{24}H_{22}N_4O_2$	Light	No	Yes*	Class 4

1.42	DP398-3		$C_{24}H_{22}N_4O_2$	Light	No	Yes*	Class 4
1.52	DP398-1		$C_{24}H_{22}N_4O_2$	Light	No	Yes*	Class 4

Figures

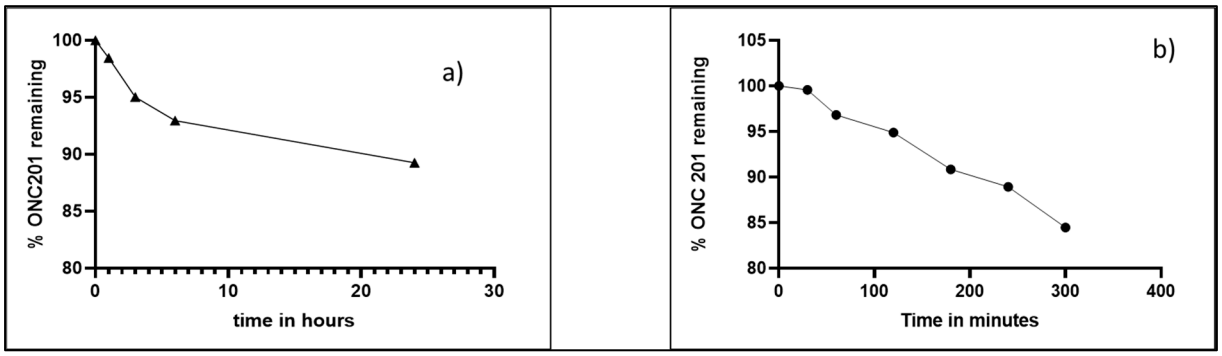


Figure S1: Degradation kinetics of ONC201. Inset (a) under photolytic conditions. Inset (b) under oxidizing conditions.

LC-MS-HRMS spectral data of protonated ONC201

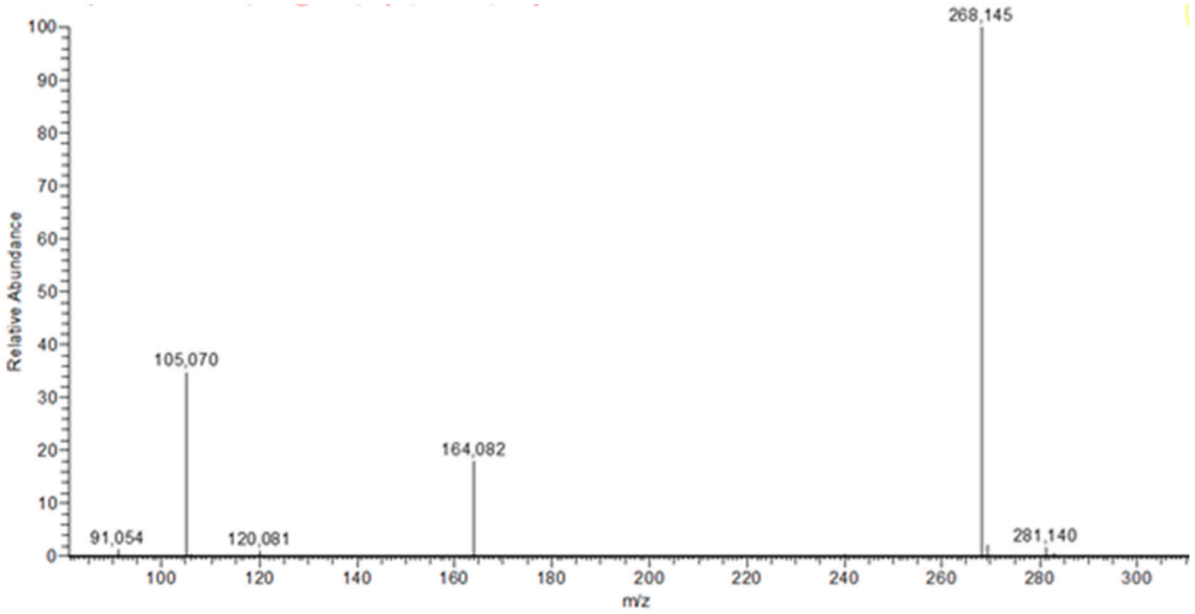


Figure S2: LC-MS-HRMS mass spectra of protonated ONC201

LC-MS-HRMS spectral data of the protonated degradation products (DP) formed under photolytic stress conditions

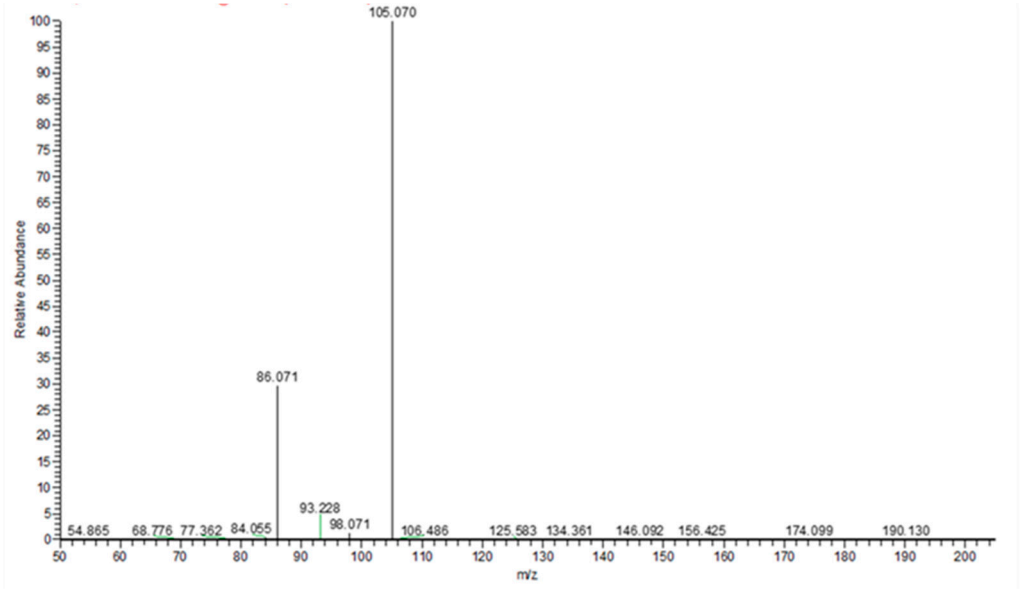


Figure S3: LC-MS-HRMS mass spectra of protonated DP189

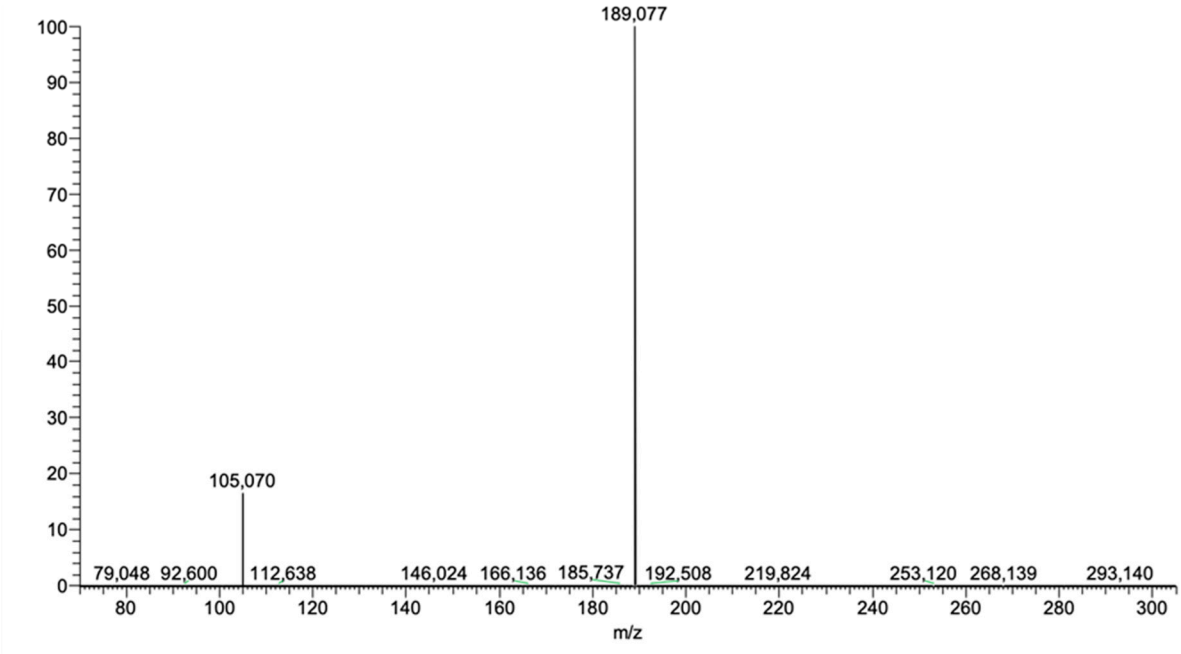


Figure S4: LC-MS-HRMS mass spectra of protonated DP292

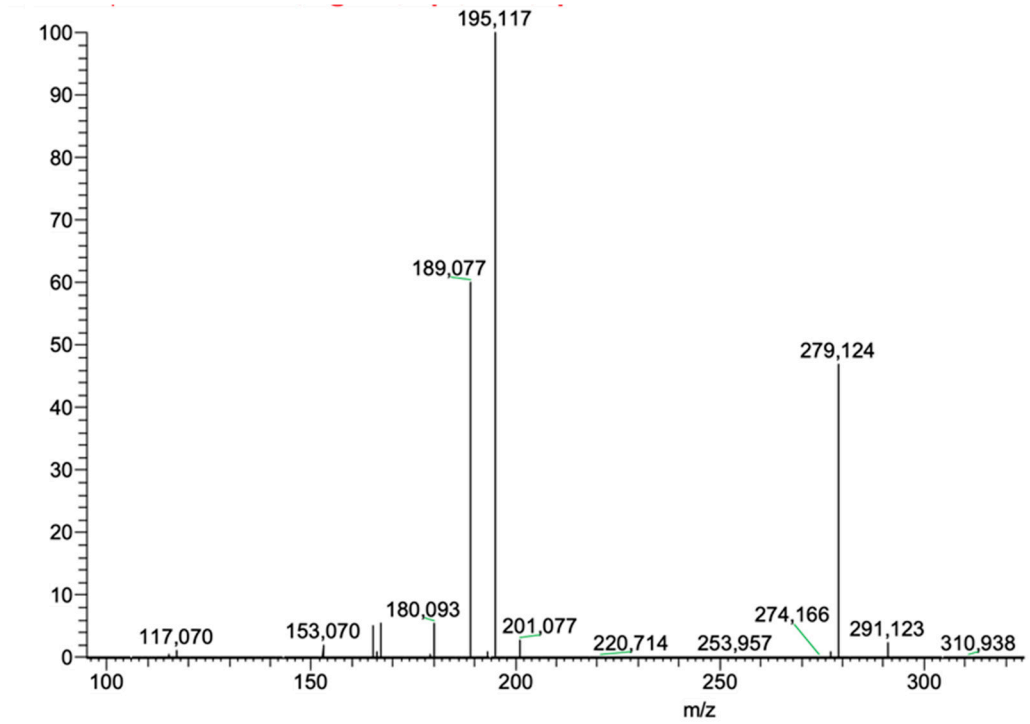


Figure S5: LC-MS-HRMS mass spectra of protonated DP382

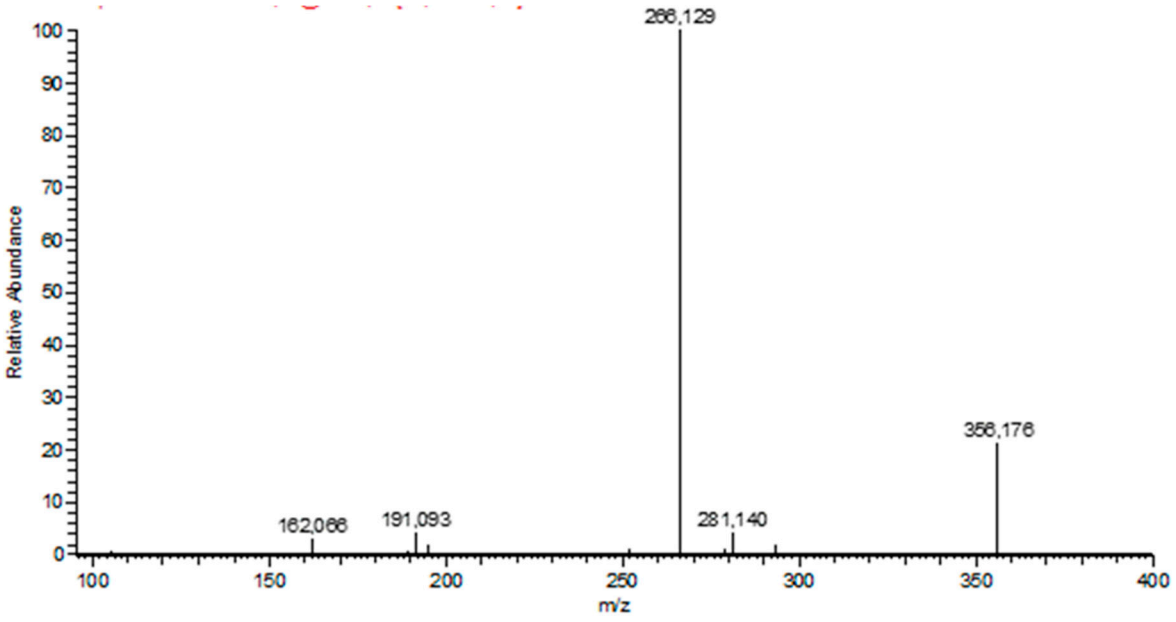


Figure S6: LC-MS-HRMS mass spectra of protonated DP384

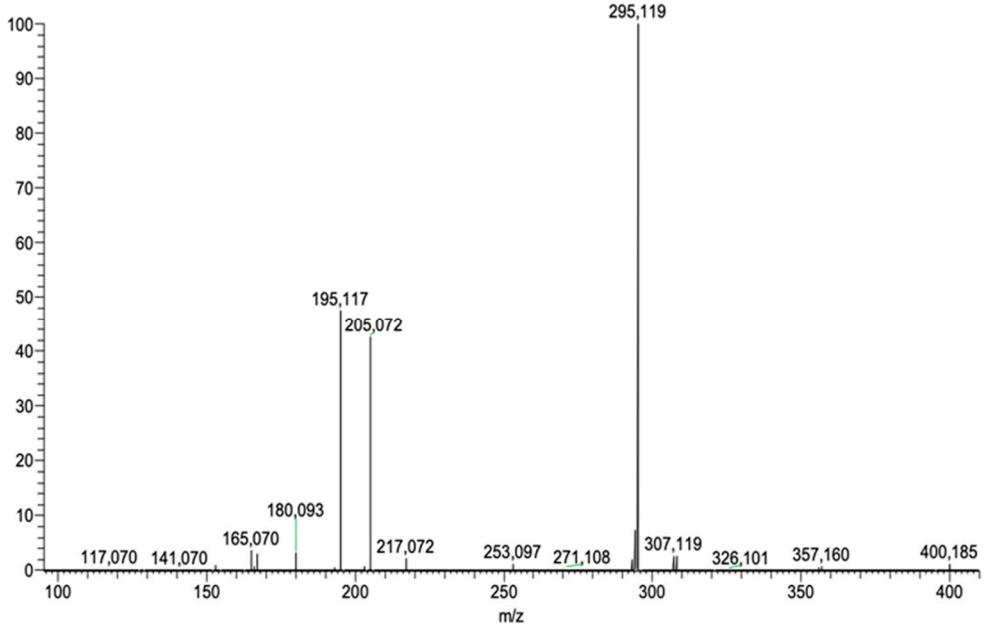


Figure S7: LC-MS-HRMS mass spectra of protonated DP398

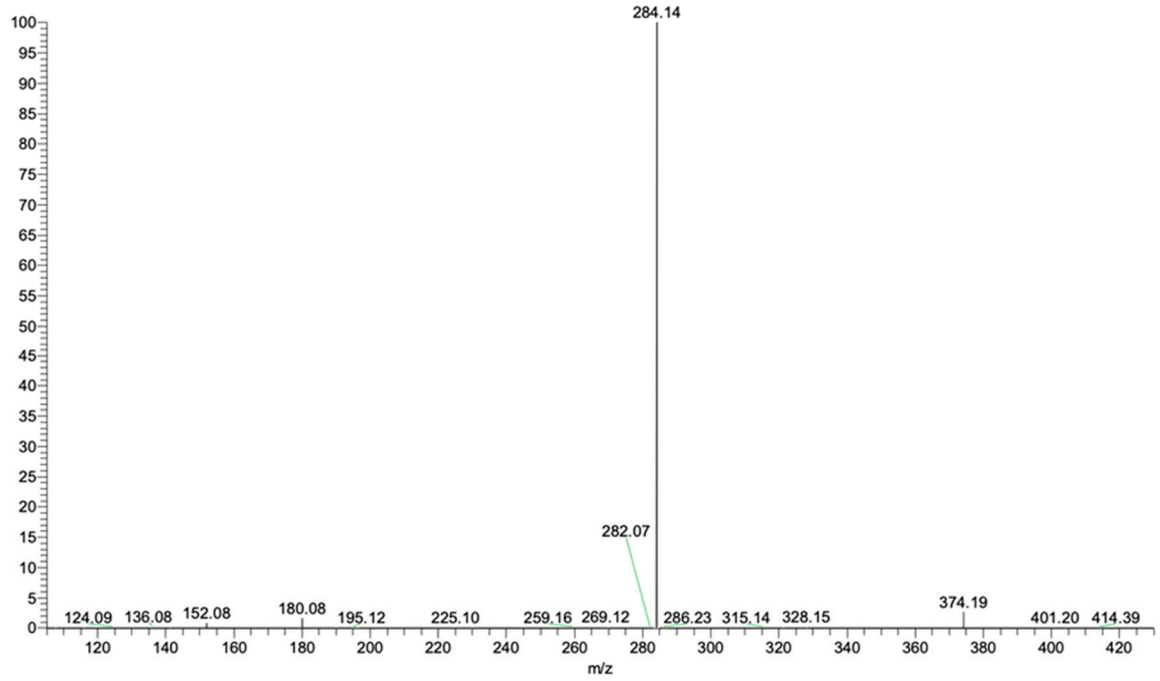


Figure S8: LC-MS-HRMS mass spectra of protonated DP418

LC-MS-HRMS spectral data of the protonated degradation products (DP) formed under oxidative stress conditions

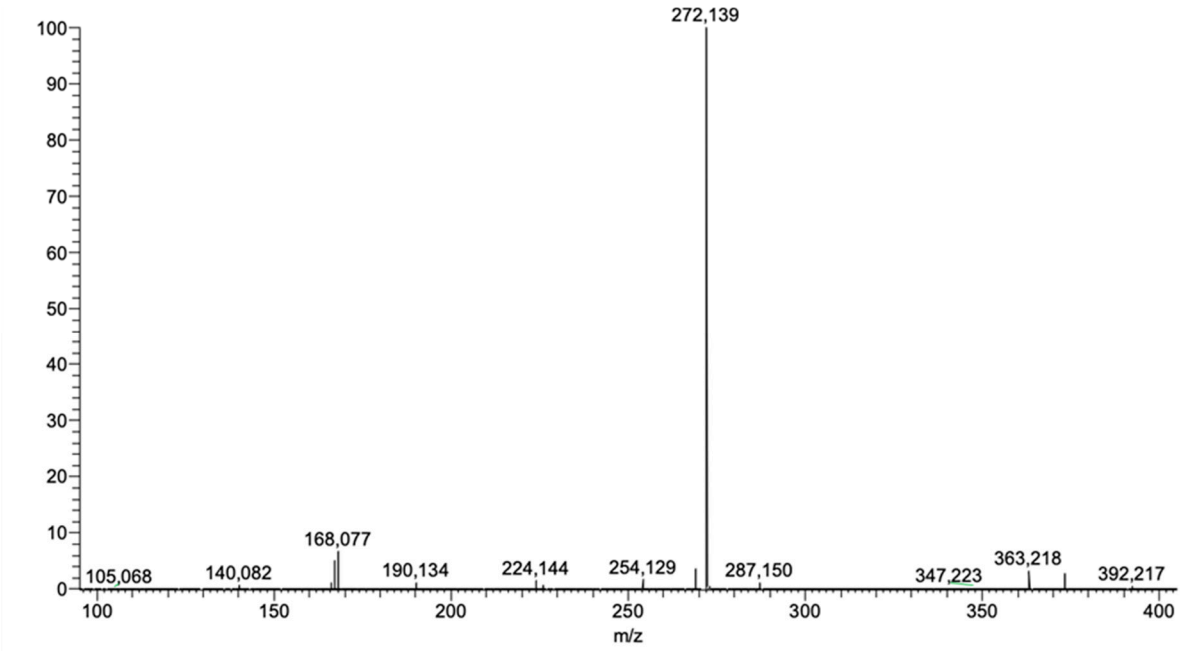


Figure S9: LC-MS-HRMS mass spectra of protonated DP390

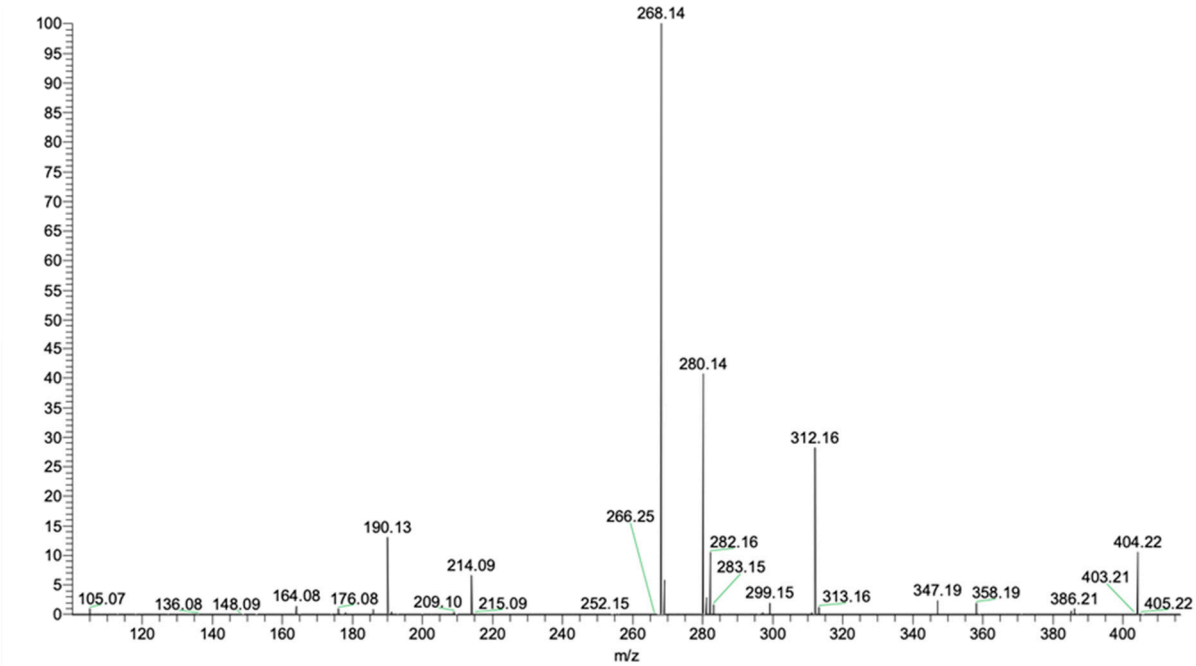


Figure S10: LC-MS-HRMS mass spectra of protonated DP402

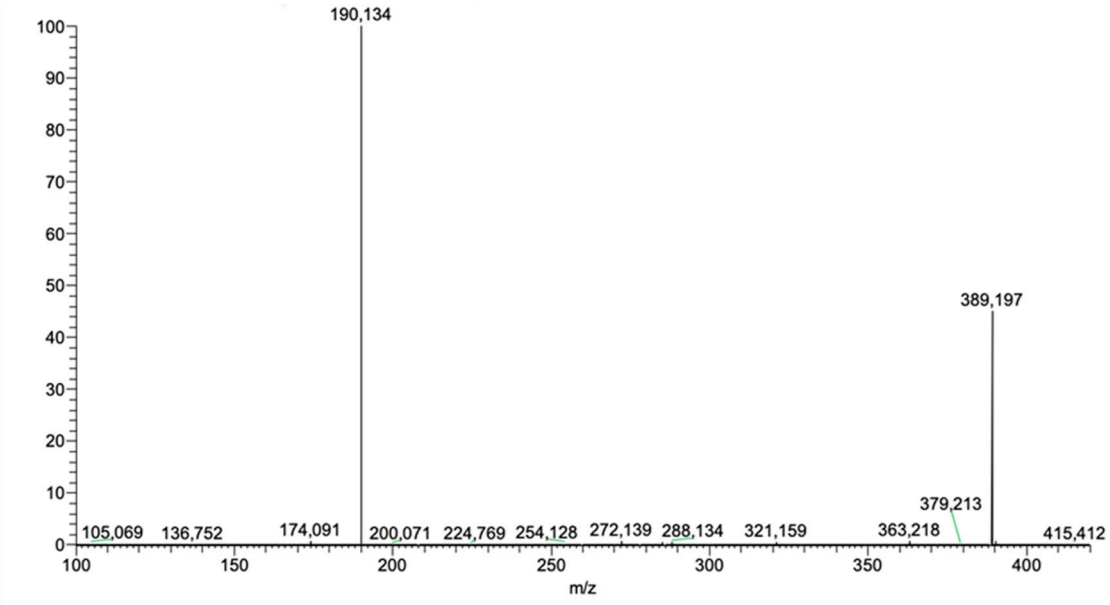


Figure S11: LC-MS-HRMS mass spectra of protonated DP406

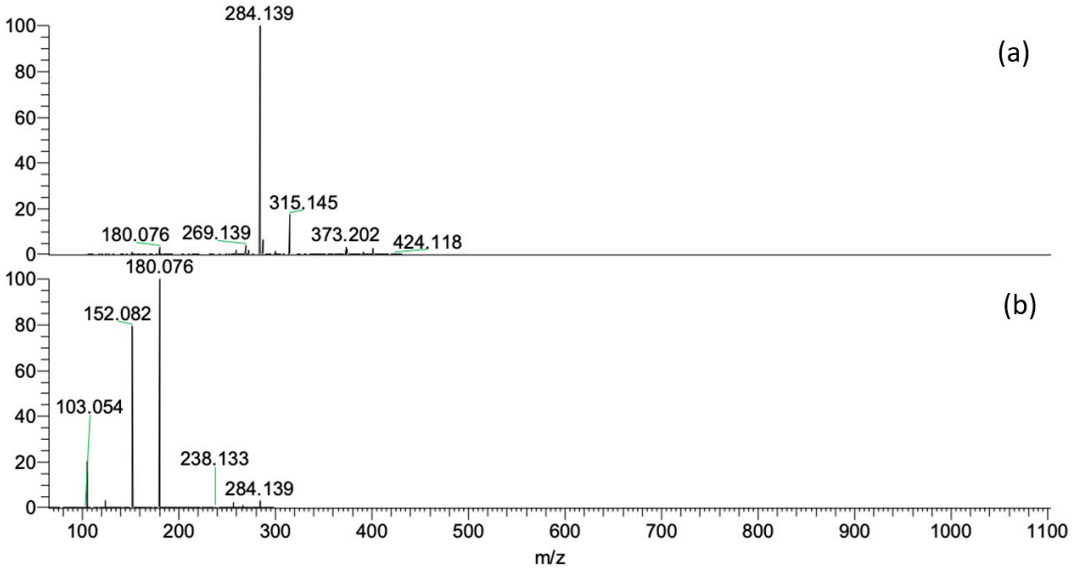


Figure S12: a. LC-MS-HRMS mass spectrum of protonated DP418 b. LC-MS²-HRMS mass spectrum of m/z 284 of protonated DP418

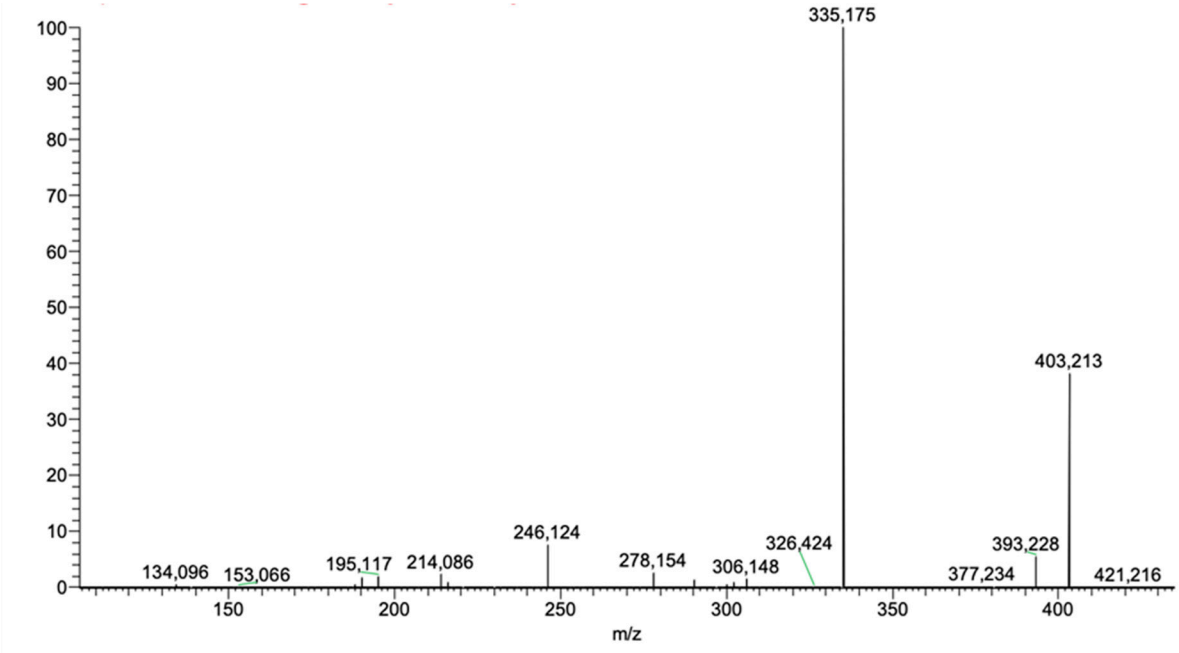


Figure S13: LC-MS-HRMS mass spectra of protonated DP420