A critical review on the use of modern sophisticated hyphenated tools in the characterization of impurities and degradation products

DOI: 10.1016/j.jpba.2012.03.044
Journal of Pharmaceutical and Biomedical Analysis, 2012, 69, 148-73.

#	Paper	IF	Citations
151	Characterization of stress degradation products of benazepril by using sophisticated hyphenated techniques. **2013**, 1271, 124-36		10
150	LC-MS/TOF, LC-MSn, on-line H/D exchange and LC-NMR studies on rosuvastatin degradation and in silico determination of toxicity of its degradation products: a comprehensive approach during drug development. **2013**, 405, 3215-31		11
149	MS(n) , LC-MS-TOF and LC-PDA studies for identification of new degradation impurities of bupropion. **2013**, 27, 1387-97		4
148	Characterization of biopharmaceuticals by NMR spectroscopy. **2013**, 48, 96-111		30
147	Identification of impurities in methotrexate drug substances using high-performance liquid chromatography coupled with a photodiode array detector and Fourier transform ion cyclotron resonance mass spectrometry. *Rapid Communications in Mass Spectrometry*, **2013**, 27, 971-8	2.2	8
146	Practical and economical implementation of online H/D exchange in LC-MS. **2013**, 85, 10904-12		11
145	Characterization of degradation products of idarubicin through LC-UV, MS(n) and LC-MS-TOF studies. *Journal of Pharmaceutical and Biomedical Analysis*, **2013**, 85, 123-31	3.5	14
144	Host cell protein analysis in therapeutic protein bioprocessing - methods and applications. **2013**, 8, 655-70		74
143	The role of analytical chemistry in drug-stability studies. **2013**, 49, 55-56		10
142	Selective determination of potential impurities in an active pharmaceutical ingredient using HPLC-SPE-HPLC. *Journal of Pharmaceutical and Biomedical Analysis*, **2013**, 84, 41-7	3.5	10
141	Forced degradation studies to assess the stability of drugs and products. **2013**, 49, 71-88		107
140	Practical and regulatory considerations for stability-indicating methods for the assay of bulk drugs and drug formulations. **2013**, 49, 57-70		36
139	Design of Experiment (DOE) Utilization to Develop a Simple and Robust Reversed-Phase HPLC Technique for Related Substances' Estimation of Omeprazole Formulations. **2013**, 81, 1043-56		6
138	Mass Spectrometry Strategies in the Assignment of Molecular Structure: Breaking Chemical Bonds before Bringing the Pieces of the Puzzle Together. **2014**, 105-144		0
137	Standardization of Analytical Methodology and Procedures for Purity Assessment of Small Molecules in Drug Discovery. **2014**, 125-149		
136	Characterization of stress degradation products of fosinopril by using LC-MS/TOF, MS(n) and on-line H/D exchange. *Journal of Pharmaceutical and Biomedical Analysis*, **2014**, 92, 135-43	3.5	11
135	Introducing the concept of centergram. A new tool to squeeze data from separation techniques-mass spectrometry couplings. **2014**, 1330, 89-96		7

134	Identification and characterization of stress degradants of lacosamide by LC-MS and ESI-Q-TOF-MS/MS: development and validation of a stability indicating RP-HPLC method. *Journal of Pharmaceutical and Biomedical Analysis*, **2014**, 95, 256-64	3.5	11
133	Characterization of forced degradation products of ketorolac tromethamine using LC/ESI/Q/TOF/MS/MS and in silico toxicity prediction. **2014**, 49, 380-91		11
132	Pharmaceutical impurities and degradation products: uses and applications of NMR techniques. *Journal of Pharmaceutical and Biomedical Analysis*, **2014**, 101, 102-22	3.5	52
131	Study of degradation mechanisms of cyclobenzaprine by LC-MS/MS. **2014**, 6, 2320-2330		12
130	An integrated approach for detection and characterization of the trace impurities in levofloxacin using liquid chromatography-tandem mass spectrometry. *Rapid Communications in Mass Spectrometry*, **2014**, 28, 1164-74	2.2	7
129	Determination of trace level genotoxic impurities in small molecule drug substances using conventional headspace gas chromatography with contemporary ionic liquid diluents and electron capture detection. **2014**, 1361, 217-28		34
128	Development and validation of a stability indicating LC-PDA-MS/MS method for separation, identification and characterization of process related and stress degradation products of rivaroxaban. **2014**, 4, 23155		17
127	Identification of process related trace level impurities in the actinide decorporation agent 3,4,3-LI(1,2-HOPO): Nozzle-skimmer fragmentation via ESI LC-QTOFMS. *Journal of Pharmaceutical and Biomedical Analysis*, **2014**, 100, 157-166	3.5	2
126	Determination of impurities and counterions of pharmaceuticals by capillary electromigration methods. *Journal of Separation Science*, **2014**, 37, 2039-55	3.4	52
125	Advice on Degradation Products in Pharmaceuticals: A Toxicological Evaluation. **2014**, 68, 221-238		19
124	Screening of synthetic PDE-5 inhibitors and their analogues as adulterants: analytical techniques and challenges. *Journal of Pharmaceutical and Biomedical Analysis*, **2014**, 87, 176-90	3.5	105
123	Critical practical aspects in the application of liquid chromatography-mass spectrometric studies for the characterization of impurities and degradation products. *Journal of Pharmaceutical and Biomedical Analysis*, **2014**, 87, 191-217	3.5	53
122	Study of the forced degradation behavior of prasugrel hydrochloride by liquid chromatography with mass spectrometry and liquid chromatography with NMR detection and prediction of the toxicity of the characterized degradation products. *Journal of Separation Science*, **2015**, 38, 2995-3005	3.4	10
121	Structural characterization of a degradation product of rocuronium using nanoelectrospray-high resolution mass spectrometry. **2015**, 7, 773-9		1
120	Mass Spectral Profile for Rapid Differentiating Beta-Lactams from Their Ring-Opened Impurities. **2015**, 2015, 697958		1
119	A comprehensive study of apixaban's degradation pathways under stress conditions using liquid chromatography coupled to multistage mass spectrometry. **2015**, 5, 35586-35597		9
118	Comments on Sample Preparation in Chromatography for Different Types´of´Materials. **2015**, 411-446		4
117	Characterization of degradation products of ivabradine by LC-HR-MS/MS: a typical case of exhibition of different degradation behaviour in HCl and H2SO4 acid hydrolysis. **2015**, 50, 344-53		17

116	Liquid chromatography with diode array detection combined with spectral deconvolution for the analysis of some diterpene esters in Arabica coffee brew. *Journal of Separation Science*, **2015**, 38, 612-20	3.4	12
115	Forced degradation of fingolimod: effect of co-solvent and characterization of degradation products by UHPLC-Q-TOF-MS/MS and 1H NMR. *Journal of Pharmaceutical and Biomedical Analysis*, **2015**, 115, 388-94	3.5	6
114	Development of an achiral supercritical fluid chromatography method with ultraviolet absorbance and mass spectrometric detection for impurity profiling of drug candidates. Part I: Optimization of mobile phase composition. **2015**, 1408, 217-26		53
113	Identification of transformation products of rosuvastatin in water during ZnO photocatalytic degradation through the use of associated LC-QTOF-MS to computational chemistry. **2015**, 299, 78-85		8
112	Identification of dabigatran etexilate major degradation pathways by liquid chromatography coupled to multi stage high-resolution mass spectrometry. **2015**, 5, 45068-45081		8
111	A Novel and Intuitive Method of Displaying and Interacting with Mass Difference Information: Application to Oligonucleotide Drug Impurities. **2015**, 26, 1150-64		8
110	Identification in drug quality control and drug research. **2015**, 69, 114-122		14
109	Use of LC-MS/TOF, LC-MS(n), NMR and LC-NMR in characterization of stress degradation products: Application to cilazapril. *Journal of Pharmaceutical and Biomedical Analysis*, **2015**, 111, 190-203	3.5	11
108	Stability behaviour of antiretroviral drugs and their combinations. 1: characterization of tenofovir disoproxil fumarate degradation products by mass spectrometry. **2015**, 5, 96117-96129		17
107	Identification of four new degradation products of epirubicin through forced degradation, LC-UV, MSn and LC-MS-TOF studies. *Journal of Chromatographic Science*, **2015**, 53, 1737-48	1.4	0
106	Four new degradation products of doxorubicin: An application of forced degradation study and hyphenated chromatographic techniques. **2015**, 5, 285-295		26
105	Guidelines and strategy of the International Conference of Harmonization (ICH) and its member states to overcome existing impurity control problems for antibiotics in China. **2015**, 13, 498-506		2
104	Characterization of stress degradation products of blonanserin by UPLC-QTOF-tandem mass spectrometry. **2015**, 5, 69273-69288		6
103	Structural characterization of alkaline and oxidative stressed degradation products of lurasidone using LC/ESI/QTOF/MS/MS. *Journal of Pharmaceutical and Biomedical Analysis*, **2015**, 105, 1-9	3.5	14
102	Multivariate control charts for monitoring captopril stability. *Microchemical Journal*, **2015**, 118, 259-265	4.8	8
101	Identification of hydrolytic and isomeric N-oxide degradants of vilazodone by on line LC-ESI-MS/MS and APCI-MS. *Journal of Pharmaceutical and Biomedical Analysis*, **2015**, 102, 353-65	3.5	25
100	Solution Stability Methods. **2016**, 393-400		
99	Development and Validation of Miglitol and Its Impurities by RP-HPLC and Characterization Using Mass Spectrometry Techniques. **2016**, 84, 654-670		4

98	Forced Degradation Studies of Ivabradine and In Silico Toxicology Predictions for Its New Designated Impurities. **2016**, 7, 117		9
97	Forced degradation study of racecadotril: Effect of co-solvent, characterization of degradation products by UHPLC-Q-TOF-MS/MS, NMR and cytotoxicity assay. *Journal of Pharmaceutical and Biomedical Analysis*, **2016**, 128, 9-17	3.5	8
96	Study of Forced Degradation Behaviour of Brinzolamide Using LC-ESI-Q-TOF and In Silico Toxicity Prediction. **2016**, 79, 1293-1308		5
95	Stability behaviour of antiretroviral drugs and their combinations. 4: Characterization of degradation products of tenofovir alafenamide fumarate and comparison of its degradation and stability behaviour with tenofovir disoproxil fumarate. *Journal of Pharmaceutical and Biomedical Analysis*, **2016**, 131, 146-155	3.5	33
94	Rapid analysis of N-methylpyrrolidine in cefepime with thermal desorption ion mobility spectrometry. **2016**, 19, 209-217		
93	Identification of the impurities in 2,5-dimethoxy-4-ethylphenethylamine tablets by high performance liquid chromatography mass spectrometry-ion trap-time of flight. **2016**, 8, 8179-8187		4
92	Enhancing detection sensitivity in gradient liquid chromatography via post-column refocusing and strong-solvent remobilization. **2016**, 1455, 86-92		7
91	LC-ESI-MS/MS analysis of phosphodiesterase-5 inhibitors and their analogues in foods and dietary supplements in Korea. **2016**, 9, 1-8		20
90	Analytical advances in pharmaceutical impurity profiling. **2016**, 87, 118-35		42
89	Materials Characterization of Inorganic Controlled Release. **2016**, 57-91		3
88	Stability behaviour of antiretroviral drugs and their combinations. 2: Characterization of interaction products of lamivudine and tenofovir disoproxil fumarate by mass and NMR spectrometry. *Journal of Pharmaceutical and Biomedical Analysis*, **2016**, 125, 245-59	3.5	13
87	Selective separation and characterisation of stress degradation products and process impurities of prucalopride succinate by LC-QTOF-MS/MS. *Journal of Pharmaceutical and Biomedical Analysis*, **2016**, 125, 219-28	3.5	8
86	LC and LC-MS study for simultaneous determination of tramadol hydrochloride and ketorolac tromethamine in bulk and formulation with their major degradation products. **2016**, 54, 87-97		3
85	Liquid Chromatographic Method Development for Forced Degradation Products of Dabigatran Etexilate: Characterisation and In Silico Toxicity Evaluation. **2016**, 79, 169-178		6
84	Identification Strategies. **2017**, 351-379		
83	Application of an Untargeted Chemometric Strategy in the Impurity Profiling of Pharmaceuticals: An Example of Amisulpride. *Journal of Chromatographic Science*, **2017**, 55, 309-315	1.4	1
82	Characterization of forced degradation products of torasemide through MS tools and explanation of unusual losses observed during mass fragmentation of drug and degradation products through density functional theory. *Journal of Pharmaceutical and Biomedical Analysis*, **2017**, 145, 209-218	3.5	6
81	Sensitivity enhancement by chromatographic peak concentration with ultra-high performance liquid chromatography-nuclear magnetic resonance spectroscopy for minor impurity analysis. **2017**, 1508, 163-168		2

80	Analysis of Bitterness Compounds by Mass Spectrometry. **2017**, 161-194		1
79	Highly Selective Sensing Platform Utilizing Graphene Oxide and Multiwalled Carbon Nanotubes for the Sensitive Determination of Tramadol in the Presence of Co-Formulated Drugs. **2017**, 29, 1038-1048		36
78	Molecular insight into atypical instability behavior of fixed-dose combination containing amlodipine besylate and losartan potassium. *Journal of Pharmaceutical and Biomedical Analysis*, **2017**, 136, 66-80	3.5	5
77	Recent trends in impurity profiling and forced degradation of antihypertensive drugs. *Journal of Liquid Chromatography and Related Technologies*, **2017**, 40, 813-831	1.3	2
76	Fragmentation studies of sartans by electrospray ionization mass spectrometry. **2017**, 52, 591-596		8
75	Identification and characterization of a new dapoxetine impurity by NMR: Transformation of N-oxide by Cope elimination. *Journal of Pharmaceutical and Biomedical Analysis*, **2017**, 134, 187-194	3.5	7
74	MSMS and MS n ?. **2017**, 936-941		0
73	Alcaftadine: Selective Separation and Characterization of Degradation Products by LCQTOF-MS/MS. **2018**, 81, 631-638		5
72	Current regulatory requirements and practical approaches for stability analysis of pharmaceutical products: A comprehensive review. **2018**, 543, 328-344		24
71	Separation and Characterization of New Forced Degradation Products of Macitentan: A Dual Endothelin Receptor Antagonist. **2018**, 81, 525-531		2
70	Simultaneous analysis of 23 illegal adulterated aphrodisiac chemical ingredients in health foods and Chinese traditional patent medicines by ultrahigh performance liquid chromatography coupled with quadrupole time-of-flight mass spectrometry. **2018**, 26, 1138-1153		17
69	A strategy for untargeted screening of macrolides and metabolites in bass by liquid chromatography coupled to quadrupole orbitrap mass spectrometry. **2018**, 262, 110-117		18
68	Critical review of reports on impurity and degradation product profiling in the last decade. **2018**, 101, 2-16		31
67	Review on Implementation of Multivariate Approach for Forced Degradation Study and Impurity Profiling with Regulatory Considerations. **2018**, 81, 105-125		6
66	Isolation and characterization of novel degradation products in cilnidipine by LC-QTOF-MS/MS, LCMSn, 2D-NMR and FTIR. *New Journal of Chemistry*, **2018**, 42, 634-646	3.6	5
65	Critical review on establishment and availability of impurity and degradation product reference standards, challenges faced by the users, recent developments, and trends. **2018**, 101, 85-107		13
64	Pharmaceutical Analysis: Introduction. **2018**,		
63	Study of forced degradation behaviour of cobicistat and atazanavir using LC/ESI/QTOF/MS; a combination of in-sourced and collision-induced dissociation for evaluation of the fragmentation patterns of degradation products. *New Journal of Chemistry*, **2018**, 42, 19113-19128	3.6	4

62	Development and validation of chromatographic methods for the quantification of dabigatran etexilate mesylate in the presence of its risky degradation products. **2018**, 31, 461-468		1
61	Analysis of Carbamazepine, Oxcarbazepine, Their Impurities, and Non-Labeled Interfering Substances by Stability-indicating UPLC/MS/MS Method: Studying the Method Greenness Profile. **2018**, 81, 1503-1517		3
60	APPLICATION OF LIQUID CHROMATOGRAPHY COUPLED WITH MASS SPECTROMETRY IN THE IMPURITY PROFILING OF DRUG SUBSTANCES AND PRODUCTS. *Asian Journal of Pharmaceutical and Clinical Research*, **2018**, 11, 30	0.4	2
59	Characterization of solution stress degradation products of aliskiren and prediction of their physicochemical and ADMET properties. **2018**, 121, 139-154		3
58	Validated stability indicating assay method of olaparib: LC-ESI-Q-TOF-MS/MS and NMR studies for characterization of its new hydrolytic and oxidative forced degradation products. *Journal of Pharmaceutical and Biomedical Analysis*, **2018**, 160, 89-98	3.5	7
57	Emerging Computational Methods for Predicting Chemically Induced Mutagenicity. **2018**, 161-176		
56	Adenosine Derivates as Antioxidant Agents: Synthesis, Characterization, in Vitro Activity, and Theoretical Insights. **2019**, 8,		2
55	Chemometrics Approaches in Forced Degradation Studies of Pharmaceutical Drugs. *Molecules*, **2019**, 24,	4.8	5
54	Applications of Ion Exchange Materials in Biomedical Industries. **2019**,		
53	Chromatographic Separation of Amino Acids. **2019**, 71-118		3
52	Stability behaviour of antiretroviral drugs and their combinations. 10: LC-HRMS, LC-MS, LC-NMR and NMR characterization of fosamprenavir degradation products and in silico determination of their ADMET properties. **2019**, 142, 165-178		8
51	A comprehensive study on rearrangement reactions in collision-induced dissociation mass spectrometric fragmentation of protonated diphenyl and phenyl pyridyl ethers. *Rapid Communications in Mass Spectrometry*, **2019**, 33, 1440-1448	2.2	2
50	A study on structural characterization of degradation products of cangrelor using LC/QTOF/MS/MS and NMR. *Journal of Pharmaceutical and Biomedical Analysis*, **2019**, 170, 327-334	3.5	2
49	Identification and structural characterization of the stress degradation products of omeprazole using Q-TOF-LC-ESI-MS/MS and NMR experiments: evaluation of the toxicity of the degradation products. *New Journal of Chemistry*, **2019**, 43, 7294-7306	3.6	7
48	Hyphenated Methods for Speciation Analysis. **2019**, 1-20		0
47	Seeking universal detectors for analytical characterizations. *Journal of Pharmaceutical and Biomedical Analysis*, **2019**, 162, 192-204	3.5	21
46	Identification and structural characterization of hydrolytic degradation products of alvimopan by LC/QTOF/MS/MS and NMR studies. *Journal of Pharmaceutical and Biomedical Analysis*, **2019**, 165, 399-409	3.5	4
45	Assessment of lisdexamfetamine dimesylate stability and identification of its degradation product by NMR spectroscopy. *Drug Development and Industrial Pharmacy*, **2019**, 45, 139-146	3.6	1

44	Quinquennial Review of Progress in Degradation Studies and Impurity Profiling: An Instrumental Perspective Statistics. *Critical Reviews in Analytical Chemistry*, **2020**, 50, 226-253	5.2	5
43	The role of mass spectrometry and related techniques in the analysis of extractable and leachable chemicals. *Mass Spectrometry Reviews*, **2020**, 39, 212-226	11	7
42	A REVIEW ON ANALYTICAL CHALLENGES IN MONITORING AND CONTROLLING GENOTOXIC IMPURITIES. *Asian Journal of Pharmaceutical and Clinical Research*, **2020**, 10-15	0.4	
41	Development of a method of analysis for profiling of the impurities in phenoxymethylpenicillin potassium based on the analytical quality by design concept combined with the degradation mechanism of penicillins. *Journal of Pharmaceutical and Biomedical Analysis*, **2020**, 186, 113309	3.5	2
40	An innovative impurity profiling of Avanafil using LC and LC-MS/MS with in-silico toxicity prediction. *Arabian Journal of Chemistry*, **2020**, 13, 6493-6509	5.9	2
39	GENOTOXIC IMPURITIES: AN IMPORTANT REGULATORY ASPECT. *Asian Journal of Pharmaceutical and Clinical Research*, **2020**, 10-25	0.4	2
38	UPLC Separation of forced degradation and process related impurities of Velpatasvir and structure elucidation by online LC-Quadrupole-Time of flight-Tandem mass Spectrometry. *Microchemical Journal*, **2020**, 155, 104657	4.8	3
37	Stability assessment of tamsulosin and tadalafil co-formulated in capsules by two validated chromatographic methods. *Journal of Separation Science*, **2021**, 44, 530-538	3.4	8
36	Separation and characterization of impurities and isomers in cefpirome sulfate by liquid chromatography/tandem mass spectrometry and a summary of the fragmentation pathways of oxime-type cephalosporins. *Rapid Communications in Mass Spectrometry*, **2021**, 35, e9004	2.2	2
35	Capillary electrophoretic methods for quality control analyses of pharmaceuticals: A review. *Electrophoresis*, **2021**, 42, 19-37	3.6	8
34	Comments on sample preparation in chromatography for different types of materials. **2021**, 615-663		
33	Characterization of degradation products of celiprolol hydrochloride using hyphenated mass and NMR techniques. *Journal of Pharmaceutical and Biomedical Analysis*, **2021**, 197, 113953	3.5	1
32	Identification and structural characterization of potential degraded impurities of ribociclib by time of flight -tandem mass spectrometry, and their toxicity prediction. *Journal of Pharmaceutical and Biomedical Analysis*, **2021**, 197, 113933	3.5	3
31	Characterization of stress degradation products of nintedanib by UPLC, UHPLC-Q-TOF/MS/MS and NMR: Evidence of a degradation product with a structure alert for mutagenicity. *Journal of Pharmaceutical and Biomedical Analysis*, **2021**, 199, 114037	3.5	4
30	Separation and structural elucidation of cefsulodin and its impurities in both positive and negative ion mode in cefsulodin sodium bulk material using liquid chromatography/tandem mass spectrometry. *Rapid Communications in Mass Spectrometry*, **2021**, 35, e9125	2.2	0
29	Stability study of doripenem antibiotic applying LC-ESI-Q-TOF method and in silico prediction: An analytical investigation focused on degradation products. *Microchemical Journal*, **2021**, 166, 106230	4.8	
28	Consolidating and Managing Data for Drug Development within a Pharmaceutical Laboratory: Comparing the Mapping and Reporting Tools from Software Applications. *Organic Process Research and Development*,	3.9	
27	Two Validated Chromatographic Methods for Determination of Ciprofloxacin HCl, One of its Specified Impurities and Fluocinolone Acetonide in Newly Approved Otic Solution. *Journal of Chromatographic Science*, **2021**,	1.4	1

26	Introduction to Mass Spectrometry, a Tutorial. 1-54		6
25	Desarrollo y validaci□ de un m□todo anal□tico indicativo de estabilidad por hplc para la cuantificaci□ de Rosuvastatina c□lcica. *Revista Colombiana De Ciencias Qu□mico Farmac□uticas*, **2014**, 43, 69-85	0.6	1
24	UHPLC-DAD Method Development and Validation: Degradation Kinetic, Stress Studies of Farnesol and Characterization of Degradation Products Using LC-QTOF-ESI-MS with in silico Pharmacokinetics and Toxicity Predictions. *Journal of Chromatographic Science*, **2021**,	1.4	0
23	A Tribute to Professor Saranjit Singh - A Critical Thinker, Innovator, Mentor, and Educator. *Journal of Pharmaceutical Sciences*, **2021**,	3.9	
22	Rapid Structure Determination of Bioactive 4?-Tetrahydrofurfuryl Macrozone Reaction Mixture Components by LC-SPE/Cryo NMR and MS. *Molecules*, **2021**, 26,	4.8	0
21	Mass Spectrometric Techniques for the Determination of Pesticide Transformation Products Formed by Advanced Oxidation Processes. 231-262		
20	Identification of new process-related impurity in the key intermediate in the synthesis of TCV-116. *Acta Pharmaceutica*, **2019**, 69, 63-74	3.2	
19	Intrinsic Stability Study and Forced Degradation Profiling of Olopatadine Hydrochloride by RP-HPLC-DAD-HRMS Method. *Turkish Journal of Pharmaceutical Sciences*, **2019**, 16, 392-400	1.1	2
18	Studies on the characterization and polymorphic stability of Fosamprenavir. *Anais Da Academia Brasileira De Ciencias*, **2020**, 92, e20181021	1.4	0
17	A study on structural characterization of potential impurities of Sugammadex sodium using LC/ESI/QTOF/MS/MS and NMR. *Journal of Pharmaceutical and Biomedical Analysis*, **2022**, 207, 114419	3.5	1
16	CO₂ Absorption Solvent Degradation Compound Identification Using Liquid Chromatography-Mass Spectrometry Quadrapole-Time of Flight (LCMSQTOF). *Journal of Analytical Sciences Methods and Instrumentation*, **2020**, 10, 78-95	0.1	1
15	A Comprehensive Review on Assessment and Key Control Strategies for Impurities in Drug Development with a Special Emphasis on Post-marketing Surveillance. *Journal of Pharmaceutical Innovation*, 1	1.8	0
14	Coupled systems. **2022**, 369-398		
13	In silico toxicity evaluation for transformation products of antimicrobials, from aqueous photolysis degradation.. *Science of the Total Environment*, **2022**, 154109	10.2	0
12	Strategic Approaches to the Chromatographic Analysis of Mutagenic Impurities. **2021**, 381-438		
11	Forced degradation studies on axitinib and characterization of its degradation products by liquid chromatography-high resolution mass spectrometry and nuclear magnetic resonance spectroscopy along with its in silico toxicity assessment. *Separation Science Plus*,	1.1	
10	Normal-Phase TLC and Gradient Reversed-Phase HPLC for the Simultaneous Determination of Enrofloxacin and Bromhexine HCl in Presence of Two of Their Official Impurities. *Journal of Chromatographic Science*,	1.4	0
9	Identification and characterization of novel hydrolytic degradation products of netarsudil by LC-Q-TOF-MS/MS: In silico toxicity prediction. *Journal of Liquid Chromatography and Related Technologies*, 1-9	1.3	

8	Isolation, structure elucidation, and high-performance liquid chromatography quantification of photolytic degradation impurities in acrivastine. *Journal of Separation Science*,	3.4	0
7	Structural characterization of novel hydrolytic and oxidative degradation products of acalabrutinib by LC-Q-TOF-MS, H/D exchange and NMR. **2022**, 221, 115077		0
6	Mechanism of capmatinib degradation in stress conditions including degradation product characterization by UPLC-Q-TOF-MS and stability indicating analytical method development.		0
5	Characterization of potential degradation products of brexpiprazole by LC-MS/TOF and NMR, and prediction of their physicochemical properties by ADMET Predictor TM.		0
4	Hyphenated Liquid Chromatography - Diode Array Detection - Charged Aerosol Detection - High Resolution - Multistage Mass Spectrometry with online Hydrogen/Deuterium exchange: One Stop Solution for Pharmaceutical Impurity Profiling. **2022**, 463725		0
3	Screening of Novel Antimicrobial Diastereomers of Azithromycin‐thiosemicarbazone Conjugates: A Combined LC-SPE/Cryo NMR, MS/MS and Molecular Modeling Approach. **2022**, 11, 1738		0
2	Isolation, structural characterization and quantification of impurities in bupivacaine. **2023**, 225, 115236		0
1	Investigation of Unusual N-(Triphenyl-5-phosphanylidene) Amide Fragmentation Observed upon MS/MS Collision-Induced Dissociation.		0