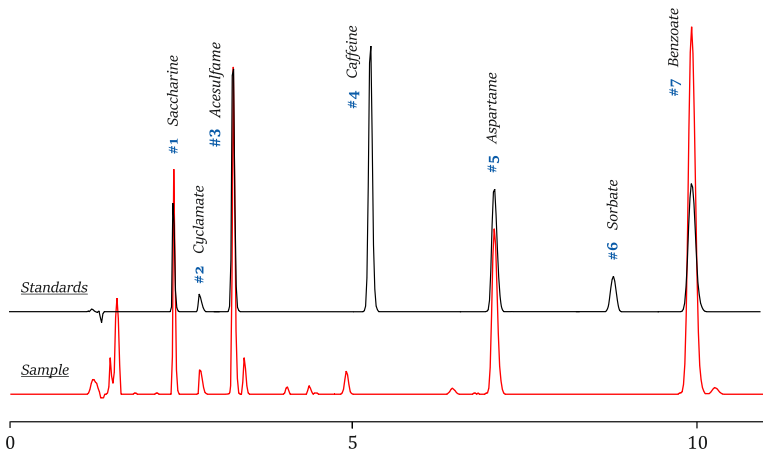


Pharmaceuticals & Food Quality Control

SYKAM HPLC APPLICATIONS BOOK

Ver. September 03, 2021





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S1125 HP HPLC Pump (600bar)



S3245 2-Wavelength UV Detector

All HPLC applications were developed with the use of SYKAM S500 HPLC Module consisting of S1125 HP isocratic 600 bar HPLC pump, S3245 2-wavelength UV/Vis detector, S4120 column oven with heating &

S4120 Column Oven



About SYKAM Chromatography

Founded in 1984, Sykam GmbH is a family-owned company based in Germany, serving customers around the world with chromatography equipment.

With the extensive in-house R&D and manufacturing facilities Sykam has evolved into a highly regarded company by chromatographers, worldwide distributors, and OEM customers alike.

Sykam develops and manufactures Analytical HPLC Systems, Preparative HPLC Systems, Ion Chromatographs, Amino Acid Analyzers and is well-recognized as global OEM supplier for leading companies.

SYKAM S500 Module for Routine HPLC Analysis

cooling options, and S5250 autosampler.

For all HPLC separations developed the 20 μ L injection volume was used to ensure their applicability to routine HPLC analysis. Back-pressure ranger from 100 to 380 bar for flow rates F = 1.0-1.2 mL/min, and did not exceed 500 bar for F = 2.0 mL/min.

S5250 Autosampler (600bar)

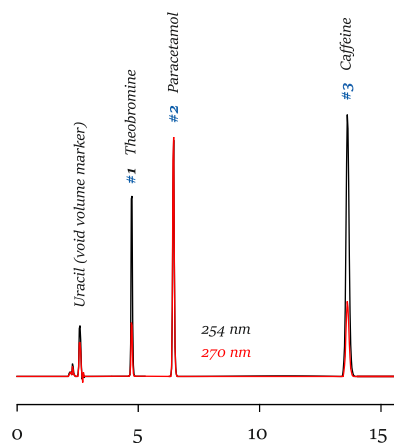


Testing HPLC Columns in RP and HILIC Modes Using 20 μ L Injections on SYKAM S500 HPLC Module

To ensure the high performance of SYKAM S500 HPLC system for the routine analysis, the latter was tested with the use of the most up-to-date 250x4.6 2.7 μ m core-shell HALO HPLC columns. Being used in combination with special HPLC equipment and low-volume injections, such columns demonstrate

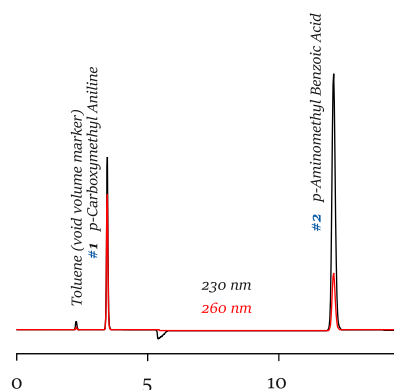
the immense plate count around 60'000-70'000 tp.

Our experiments showed that using 20 μ L injections on SYKAM S500 system equipped with HALO column provides still the unmatched plate count for the routine HPLC analysis around 45'000-55'000 tp, although, of course, it is a bit lower than the values obtained on special HPLC equipment and low-volume injections.



##	Name	RT	PC	AF
#1	Theobromine	4.75	41'200	1.20
#2	Paracetamol	6.43	45'800	1.10
#3	Caffeine	13.6	53'600	1.05

20 μ L HALO AQ-C18 90Å
4.6x250, 2.7 μ m 1.0 mL/min 8% AcN



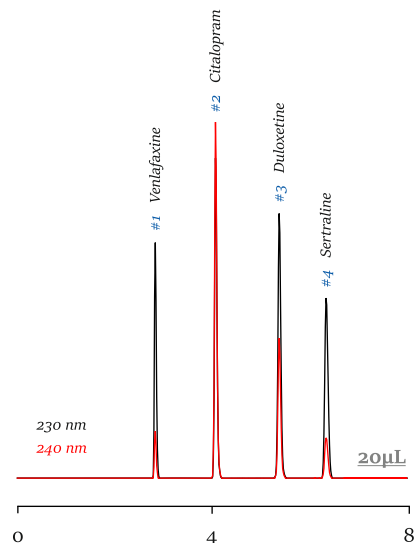
##	Name	RT	PC	AF
#1	p-Carboxymethyl Aniline	4.75	21'200	1.15
#2	p-Aminomethyl Benzoic Acid	13.6	45'800	1.10

20 μ L HALO HILIC 90Å
4.6x250, 2.7 μ m 1.0 mL/min 80% AcN



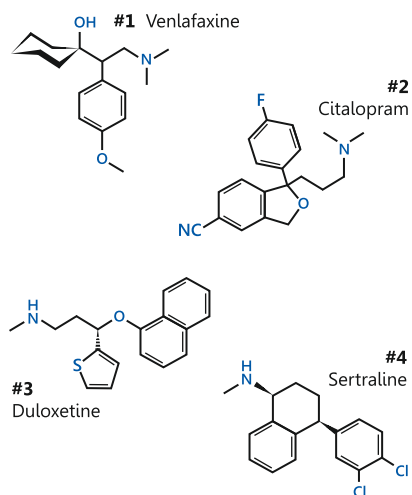
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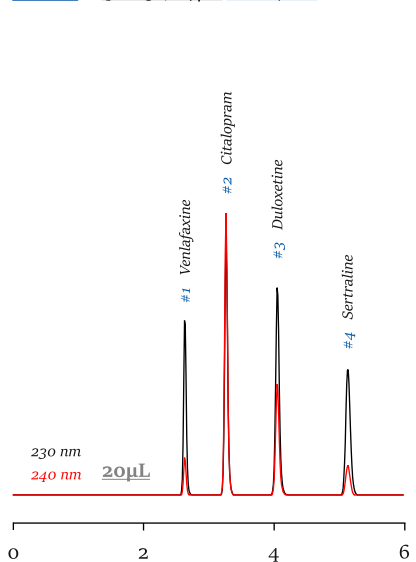


Isocratic Separation of Four Antidepressant Drugs

##	Name	RT	PC	AF
#1	Venlafaxine	2.85	26'400	1.25
#2	Citalopram	4.09	34'800	1.15
#3	Duloxetine	5.39	40'700	1.15
#4	Sertraline	6.35	40'600	1.20



L10 HALO ES-CN 90Å
4.6x250, 2.7µm 1.2 mL/min

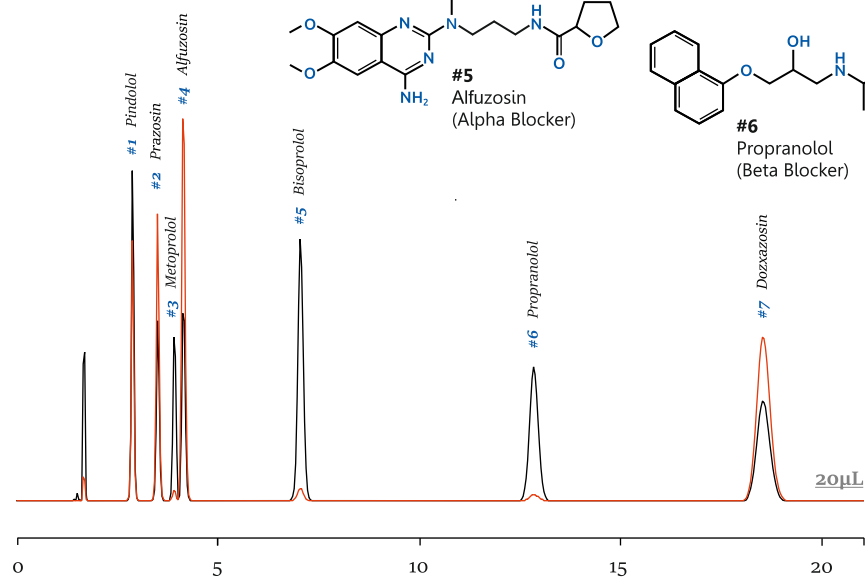
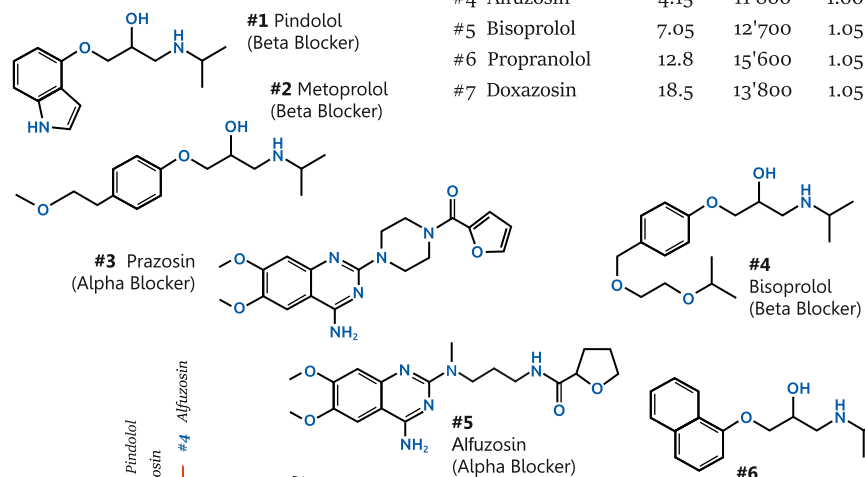


##	Name	RT	PC	AF
#1	Venlafaxine	2.82	19'700	1.10
#2	Citalopram	3.50	23'000	1.20
#3	Duloxetine	4.34	24'800	1.15

L60 EXSIL Avanti BDS Alkam
4.6x250, 3µm 1.2 mL/min

Isocratic Separation of Seven Alpha & Beta Blocker Drugs

##	Name	RT	PC	AF
#1	Pindolol	2.90	11'800	1.05
#2	Prazosin	3.50	11'100	1.05
#3	Metoprolol	3.93	12'400	1.05
#4	Alfuzosin	4.15	11'800	1.00
#5	Bisoprolol	7.05	12'700	1.05
#6	Propranolol	12.8	15'600	1.05
#7	Doxazosin	18.5	13'800	1.05



L7 TRACER Excel 120 C8
4.6x250, 5.0µm 1.2 mL/min



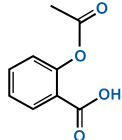
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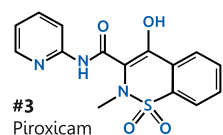
Isocratic Reversed-Phase Separation of Ten NSAIDs - Nonsteroidal Anti-Inflammatory Drugs

#	Name	RT	PC	AF
#1	Aspirin	2.28	18'600	1.25
#2	Ketorolac	2.93	24'000	1.20
#3	Piroxicam	3.60	30'000	1.15
#4	Ketoprofen	3.79	32'800	1.15
#5	Naproxen	3.97	35'000	1.15
#6	Meloxicam	4.39	36'000	1.15
#7	Nimesulide	5.37	43'100	1.15
#8	Indometacin	6.52	44'000	1.10
#9	Diclofenac	6.77	46'000	1.10
#10	Ibuprofen	6.98	49'200	1.10

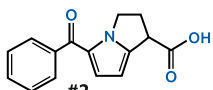
#1 Acetylsalicylic acid



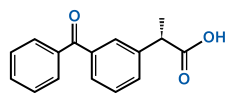
#3 Piroxicam



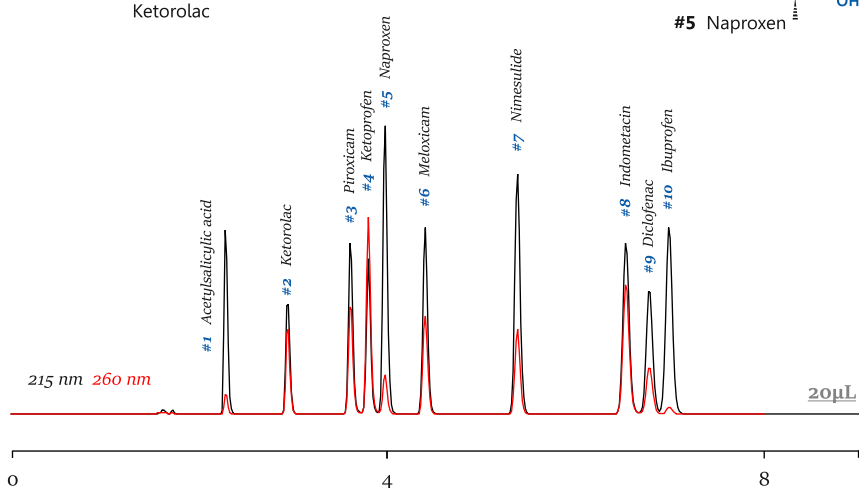
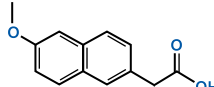
#2 Ketorolac



#4 Ketoprofen



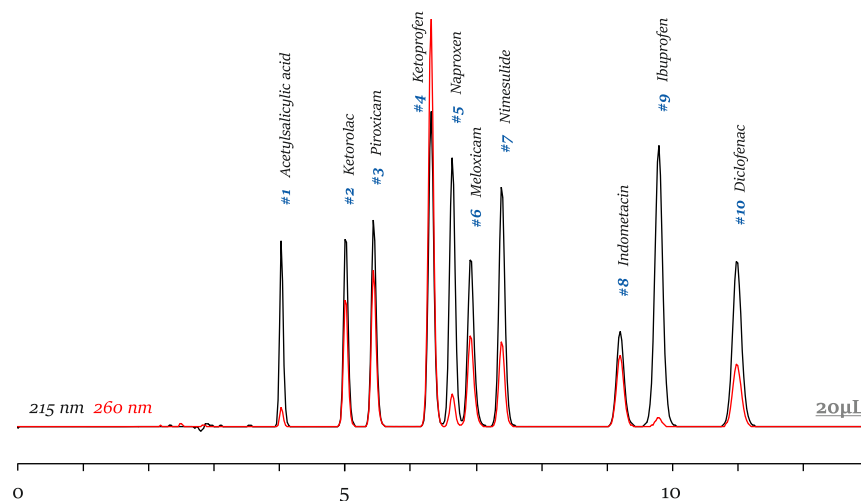
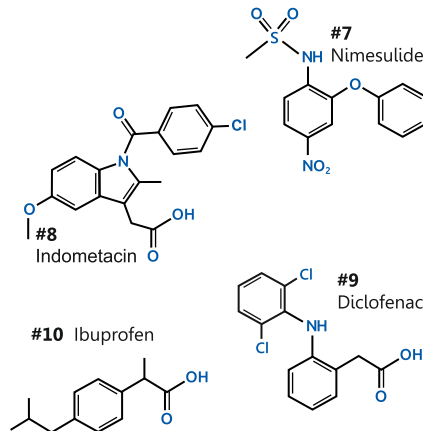
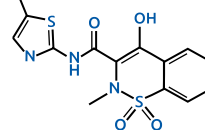
#5 Naproxen



L1 HALO AQ-C18 90A
4.6x250, 2.7µm 1.2 mL/min

#	Name	RT	PC	AF
#1	Aspirin	4.02	24'200	1.15
#2	Ketorolac	5.00	25'000	1.15
#3	Piroxicam	5.43	24'700	1.15
#4	Ketoprofen	6.31	27'900	1.10
#5	Naproxen	6.63	29'300	1.05
#6	Meloxicam	6.91	25'500	1.15
#7	Nimesulide	7.39	30'100	1.05
#8	Indometacin	9.19	28'300	1.05
#9	Ibuprofen	9.78	30'100	1.05
#10	Diclofenac	11.0	29'100	1.10

#6 Meloxicam



L60 EXSIL Avanti BDS Alkam
4.6x250, 3.0µm 1.2 mL/min

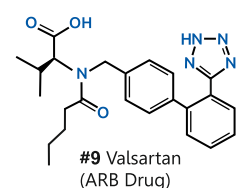
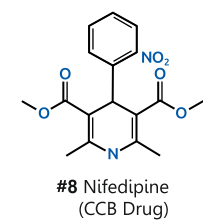
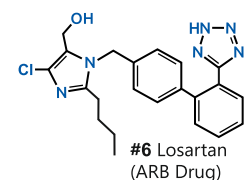
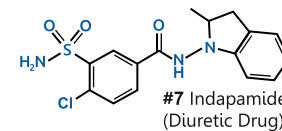
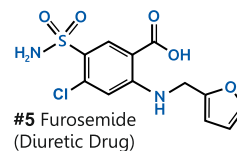
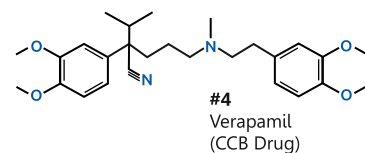
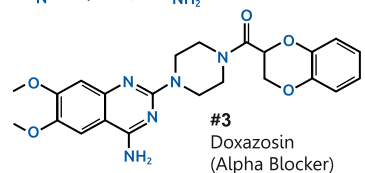
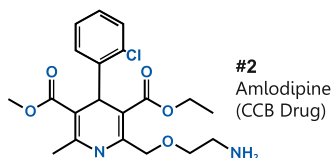
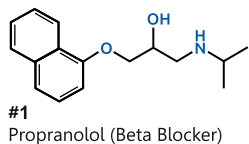


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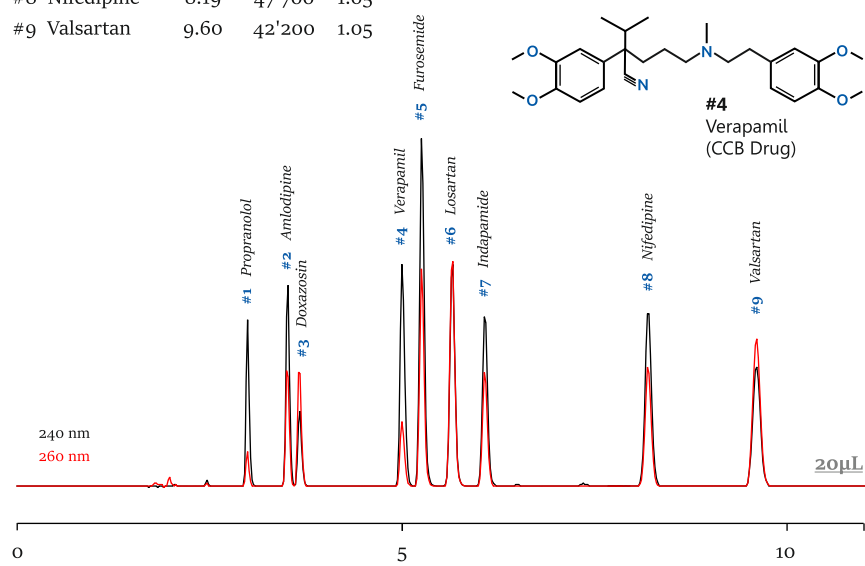
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Isocratic Separation of Nine Antihypertensive Drugs (Diuretics, CCBs, ARBs, Alpha- & Beta-Blockers)

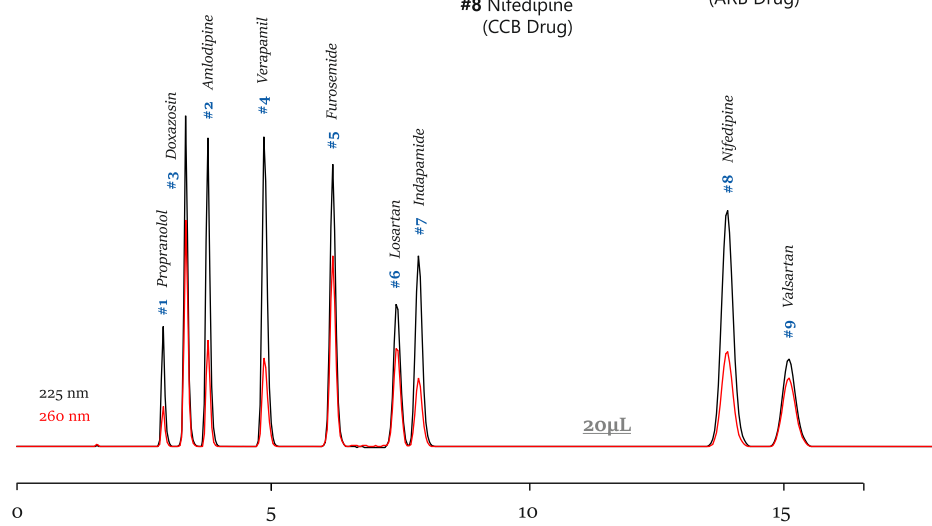
#	Name	RT	PC	AF
#1	Propranolol	3.00	26'000	1.25
#2	Amlodipine	3.51	27'500	1.20
#3	Doxazosin	3.67	27'500	1.15
#4	Verapamil	5.00	32'500	1.20
#5	Furosemide	5.25	39'300	1.15
#6	Losartan	5.65	37'300	1.10
#7	Indapamide	6.07	41'100	1.10
#8	Nifedipine	8.19	47'700	1.05
#9	Valsartan	9.60	42'200	1.05



#	Name	RT	PC	AF
#1	Propranolol	2.86	9'500	1.25
#3	Doxazosin	3.31	9'800	1.20
#2	Amlodipine	3.73	10'400	1.20
#4	Verapamil	4.84	10'800	1.25
#5	Furosemide	6.18	14'300	1.10
#6	Losartan	7.43	14'100	1.10
#7	Indapamide	7.85	15'200	1.05
#8	Nifedipine	13.9	17'000	1.10
#9	Valsartan	15.1	15'700	1.10



L10 HALO ES-CN 90Å
4.6x250, 2.7µm 1.2 mL/min



L1 TRACER Excel ODS-A
4.6x250, 5.0µm 1.2 mL/min

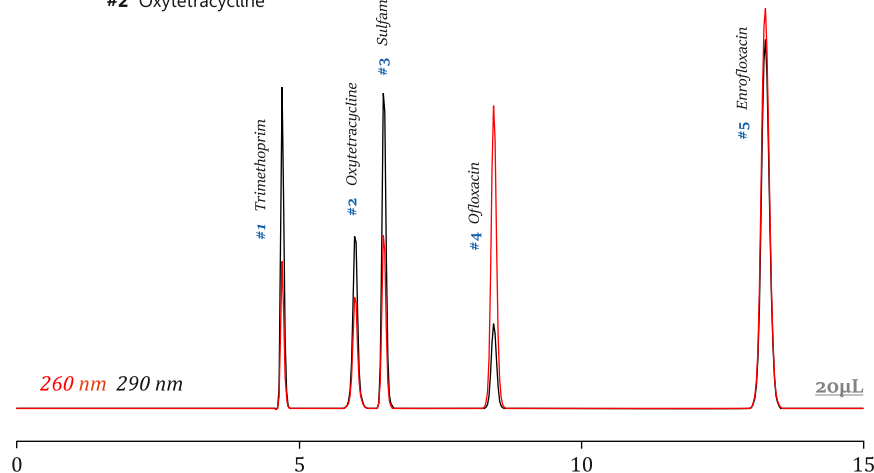
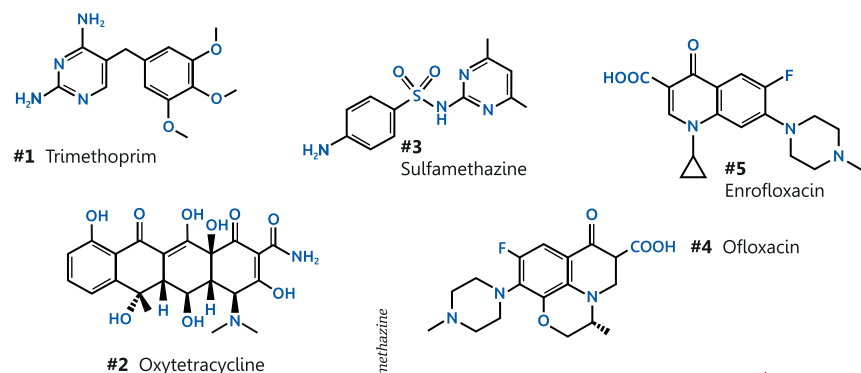


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Isocratic HPLC Separation of Five Antibiotics Used for Veterinary Purposes

##	Name	RT	PC	AF
#1	Trimethoprim	4.73	30'800	1.20
#2	Oxytetracycline	6.02	25'000	1.05
#3	Sulfamethazine	6.53	37'000	1.05
#4	Ofloxacin	8.47	37'100	1.05
#5	Enrofloxacin	13.3	38'200	1.05

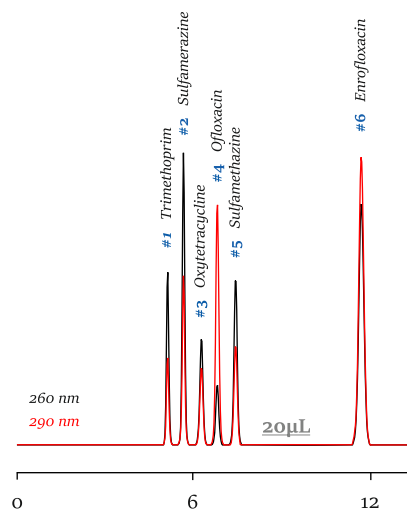


L10 HALO ES-CN 90Å
4.6x250, 2.7µm 1.2 mL/min

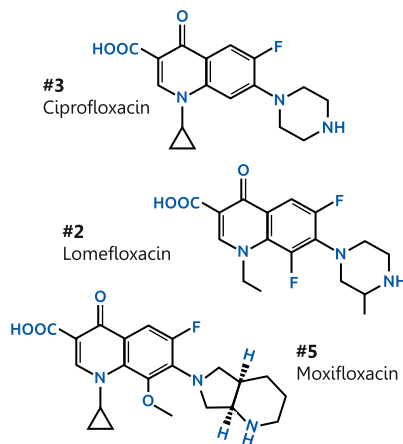
Isocratic HPLC Separation of Six Antibiotics Used for Veterinary Purposes

##	Name	RT	PC	AF
#1	Trimethoprim	5.09	17'400	1.05
#2	Sulfamerazine	5.63	19'600	1.00
#3	Oxytetracycline	6.24	15'000	1.00
#4	Ofloxacin	6.78	17'800	1.00
#5	Sulfamethazine	7.39	20'000	1.00
#6	Enrofloxacin	11.7	20'000	1.00

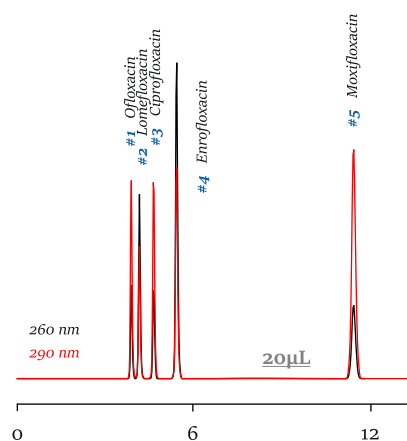
L1 ACE Excel Super C18
4.6x150, 3.0µm 1.5 mL/min



Isocratic RP Separation of Five Fluoroquinolones



L1 HALO AQ-C18 90Å
4.6x250, 2.7µm 1.2 mL/min

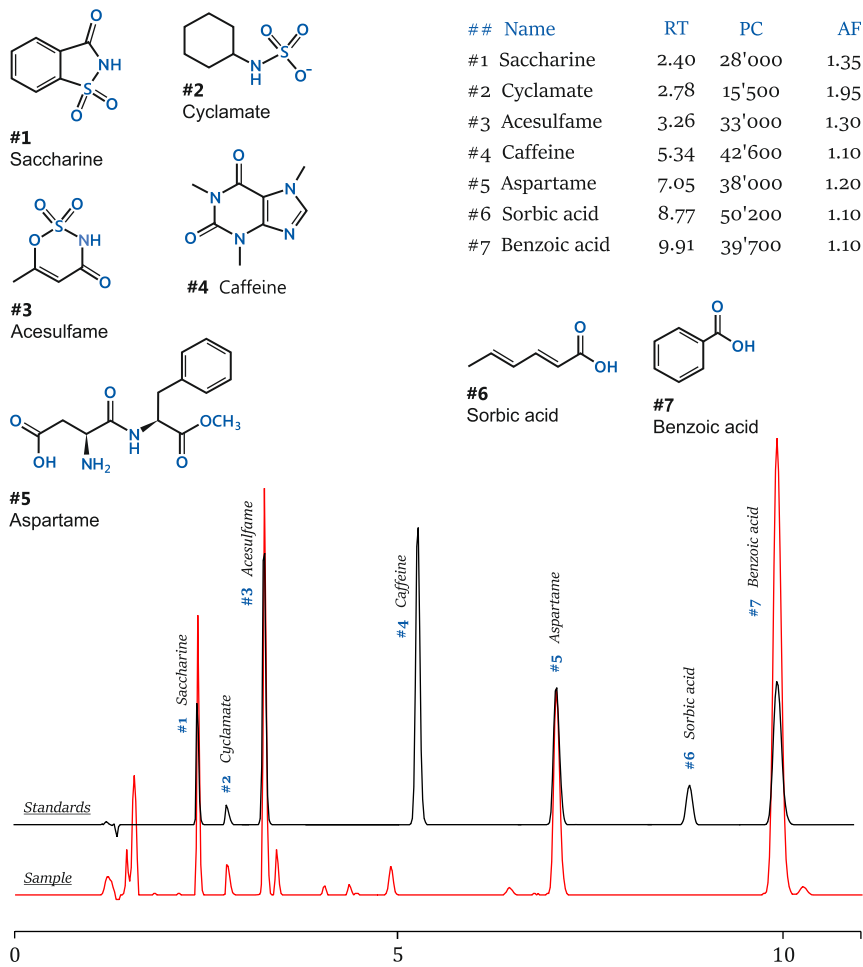




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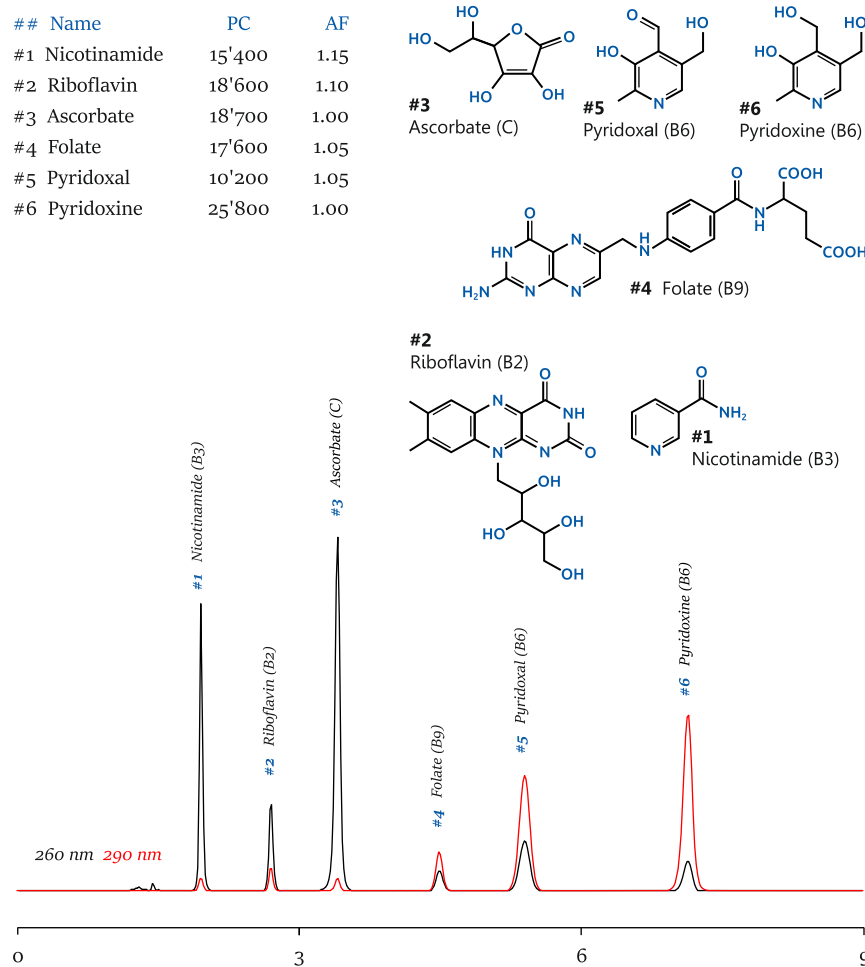
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Isocratic HILIC Separation of Seven Sweeteners & Preservatives In Non-Alcoholic Beverages



L10 HALO ES-CN 90Å
4.6x250, 2.7µm 2.0 mL/min

Isocratic HILIC Separation of Six Water Soluble Vitamins



L8 Exsil Pure 120 Amino
4.6x250, 3.0µm 2.0 mL/min

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Dr. K.SYCHEV

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