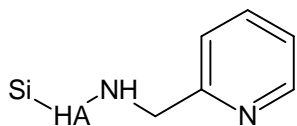


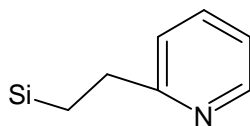
# Abstract / Description

Our goal for this work, which is ongoing, was to create a series of stationary phases for SFC that are highly customizable. We wanted to design a base structure which could be modified with a host of different functional groups depending on the needs of the user and the application. We also wanted to impart a greater degree of polarity to the phases as we have found this can aid greatly in quite a few SFC separations. The result is our patent pending “HA” series of stationary phases. Not only is the “HA” series very tunable, it is cost effective and reproducible. What we present here is a brief introduction to the first set of stationary phases with a quick comparison to more traditional phases currently offered in our catalog. Each new phase was not always “better” for our chosen mixture of compounds, but for all phases certain selectivity differences are evident and there is a lot of room to expand. We feel there is great potential for this series and look forward to building on this work.

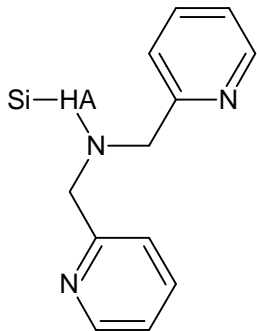
# Stationary Phases



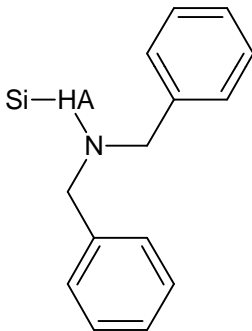
HA-Pyridyl



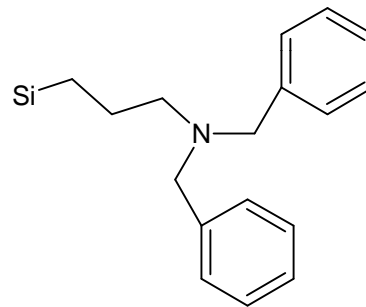
2-Ethylpyridine



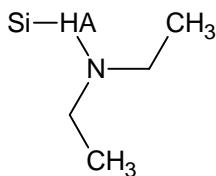
HA-Dipyridyl



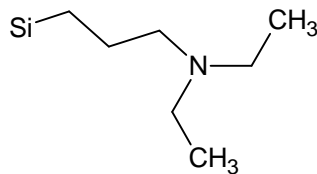
HA-Dibenzyl



Dibenzylaminopropyl



HA-Diethylamino



Diethylaminopropyl (DEAP)

# Compounds and Conditions

- Caffeine
- Theophylline
- Theobromine
- Ibuprofen
- Thymine
- Cortisone
- Prednisone
- Uracil
- Hydrocortisone
- Prednisolone
- Adenine
- Sulfamethoxazole
- Hypoxanthine
- Cytosine
- Flurbiprofen
- Sulfamerazine
- Estriol
- Sulfadimethoxine
- Sulfanilamide
- Sulfaquinoxaline
- Sulfaguanidine
- Sulfamethizole

**Instrument:** Jasco Analytical SFC w/ PDA detector

**Flow :** 2.0 ml/min      **Outlet:** 100 bar

**Column Temp:** 40 degrees Celsius

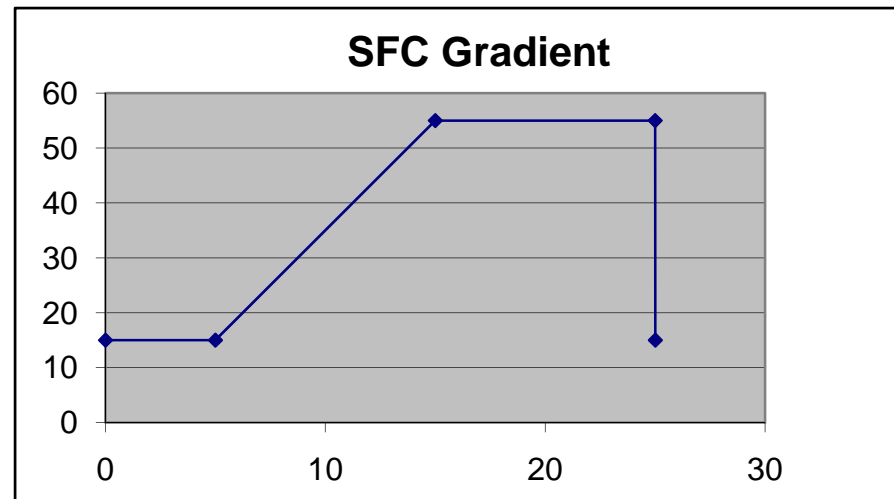
**Detection:** Variable (optimal ~214nm)

**Gradient:** 0-5 min 15% MeOH (no additive)

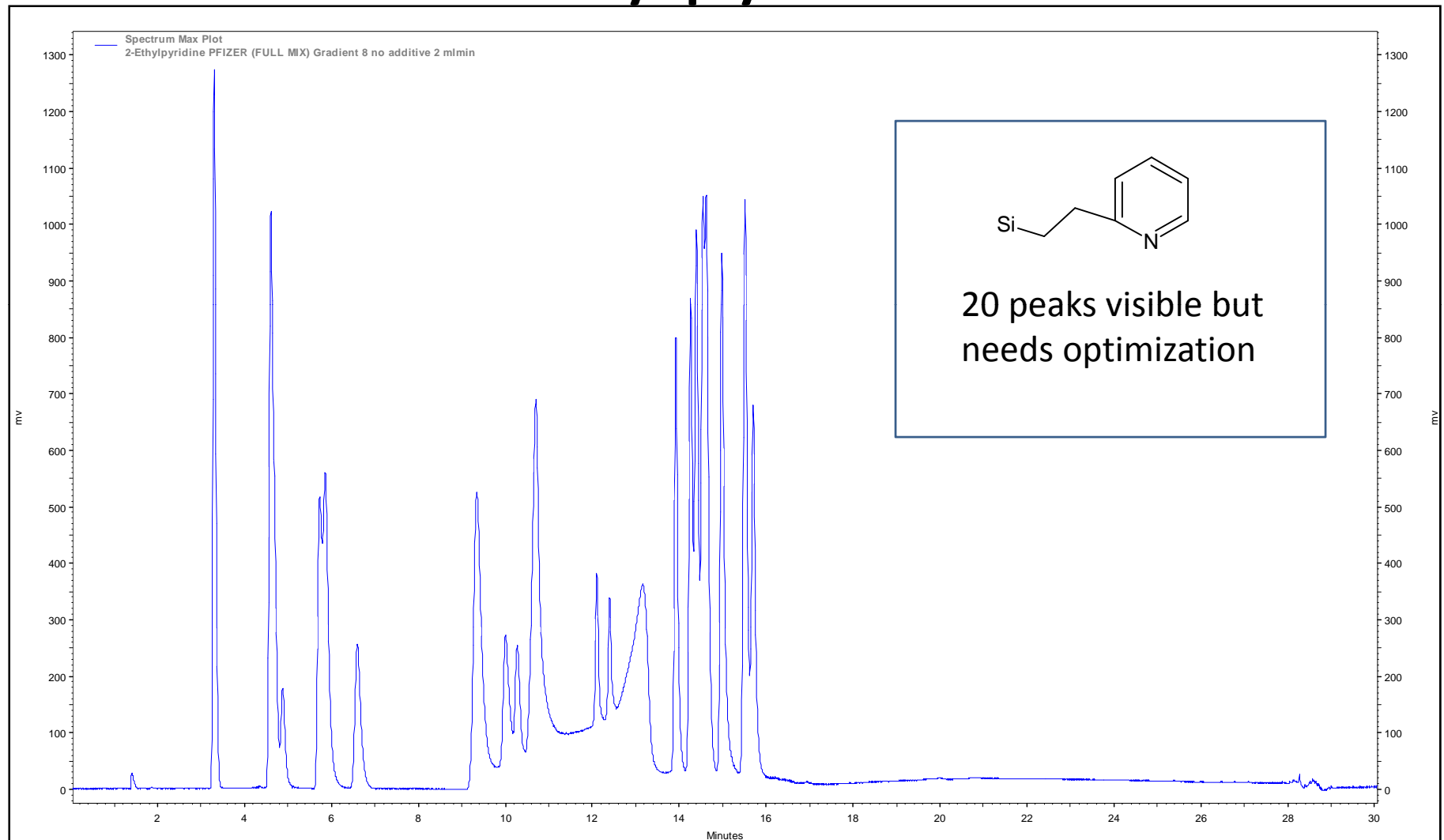
5-15 min 15% - 55% MeOH

15-25 min 55% MeOH

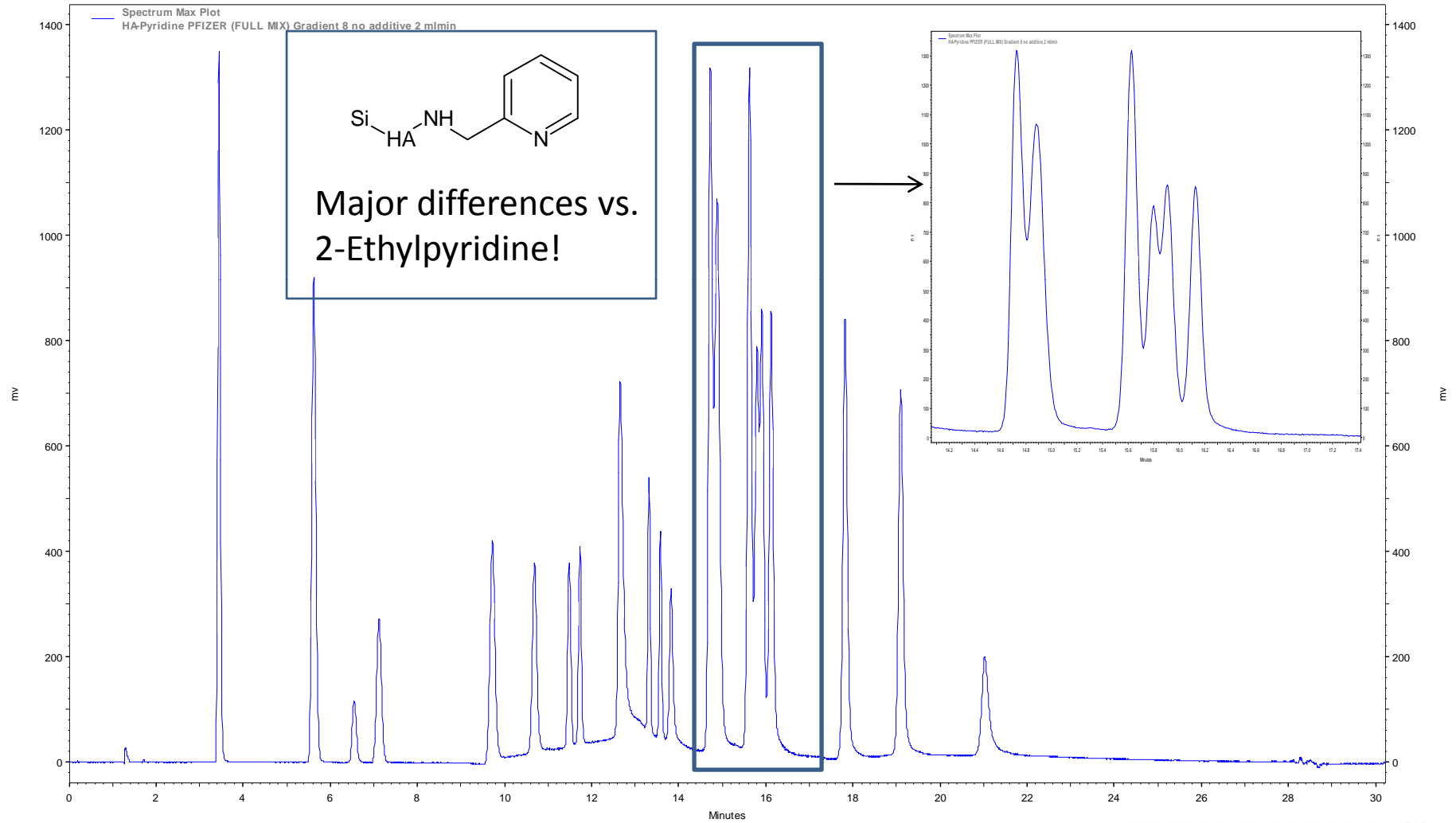
25 min – return to initial conditions



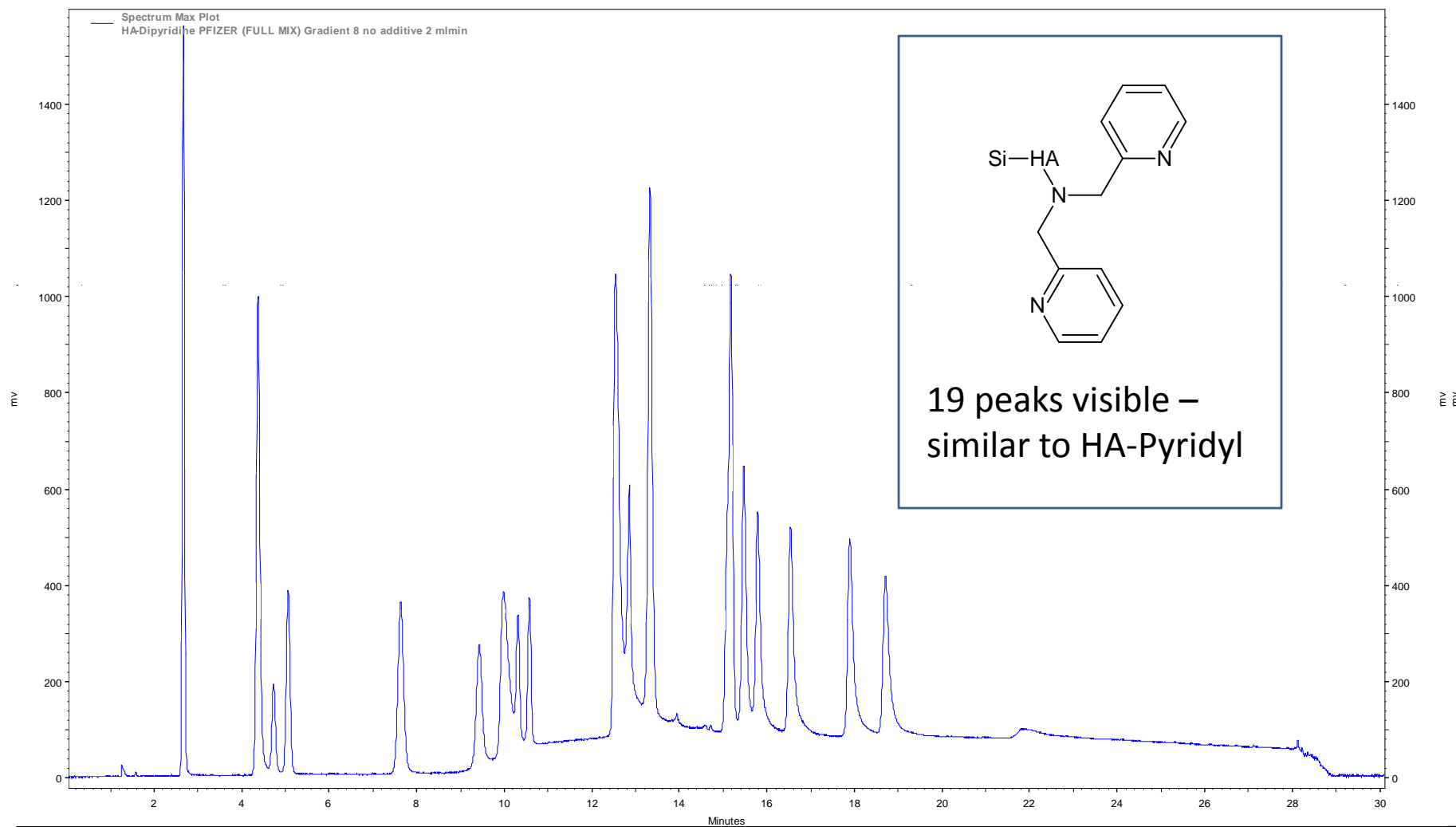
# 2-Ethylpyridine



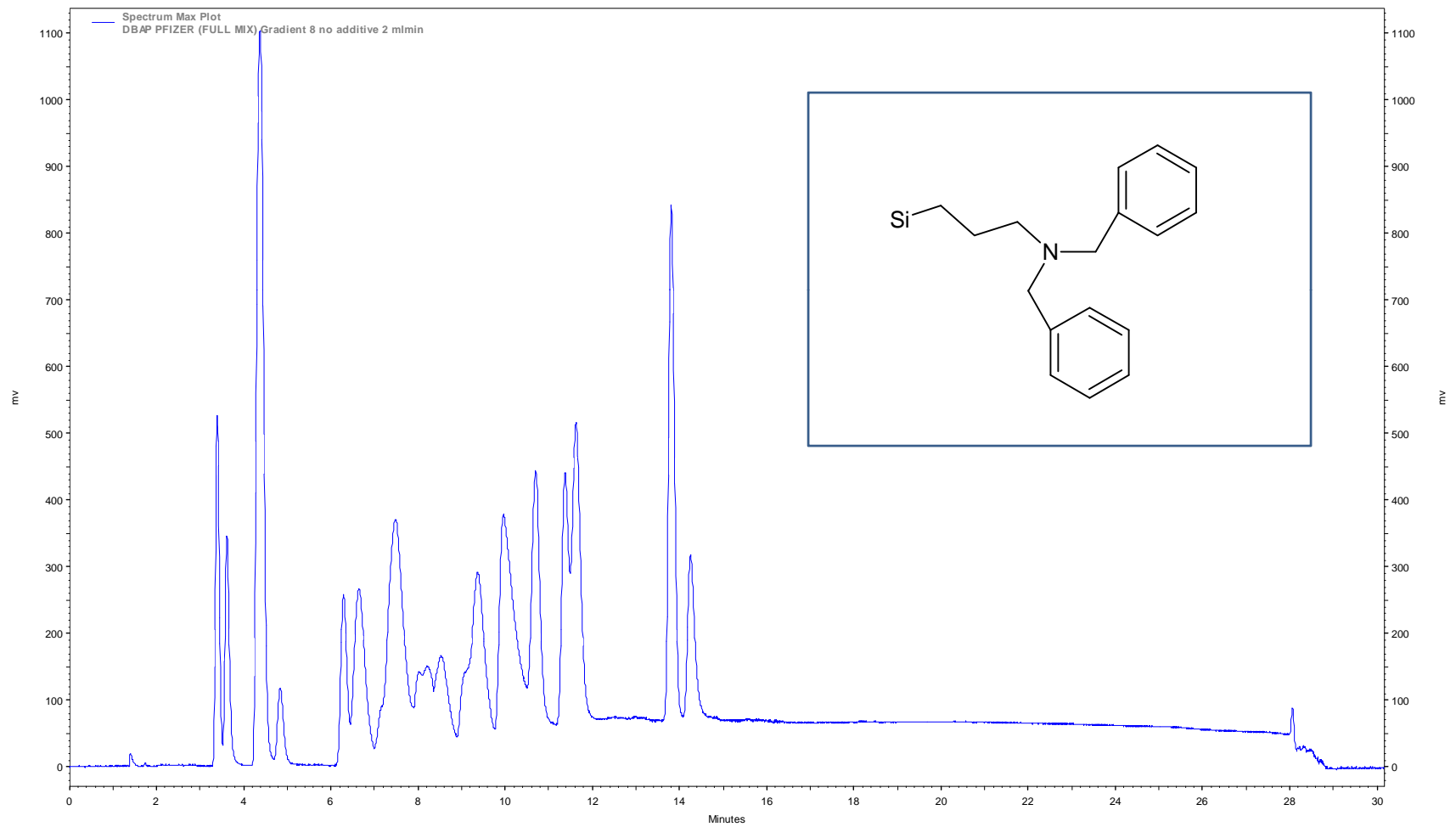
# HA-Pyridyl



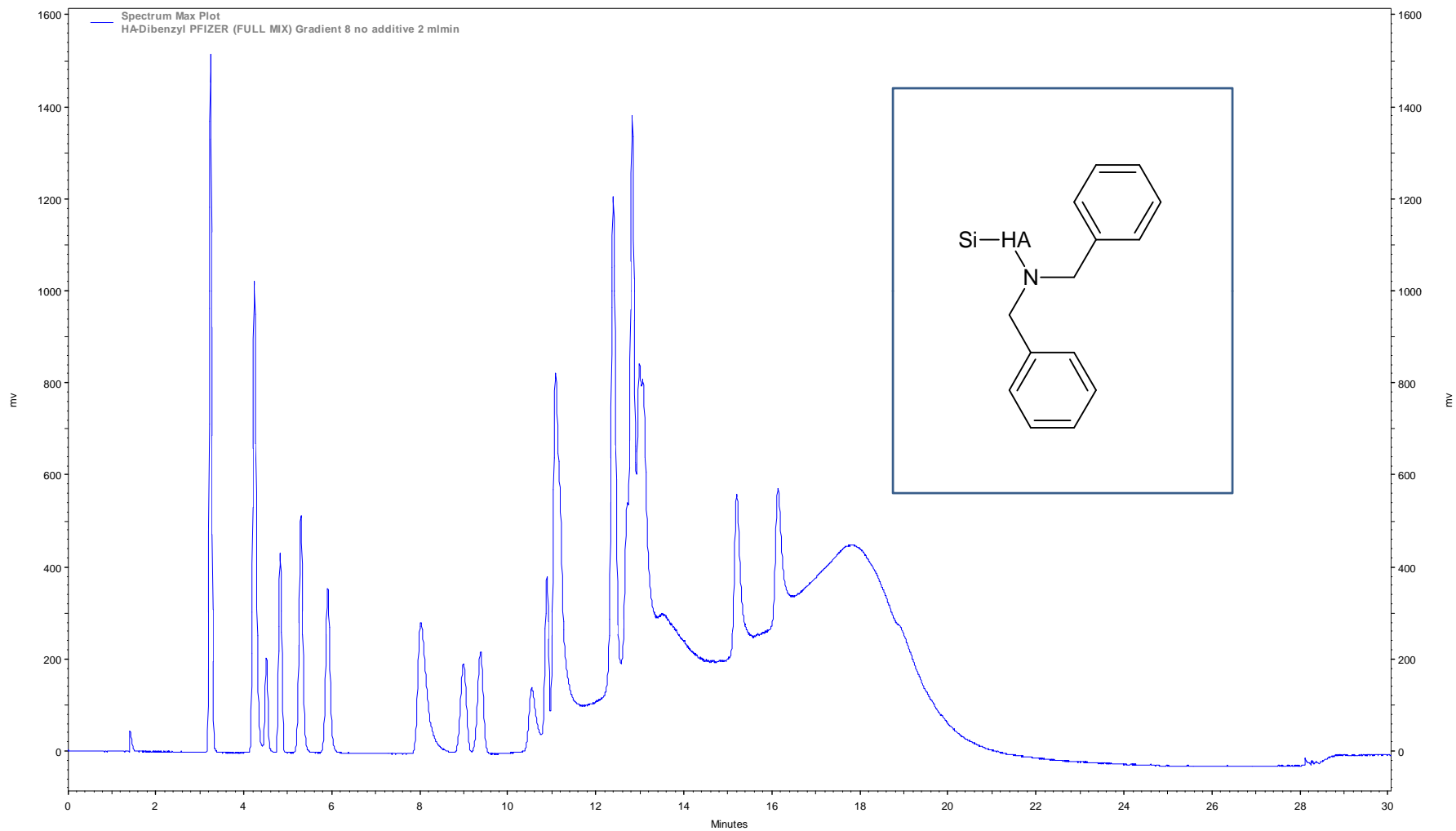
# HA-Dipyridyl



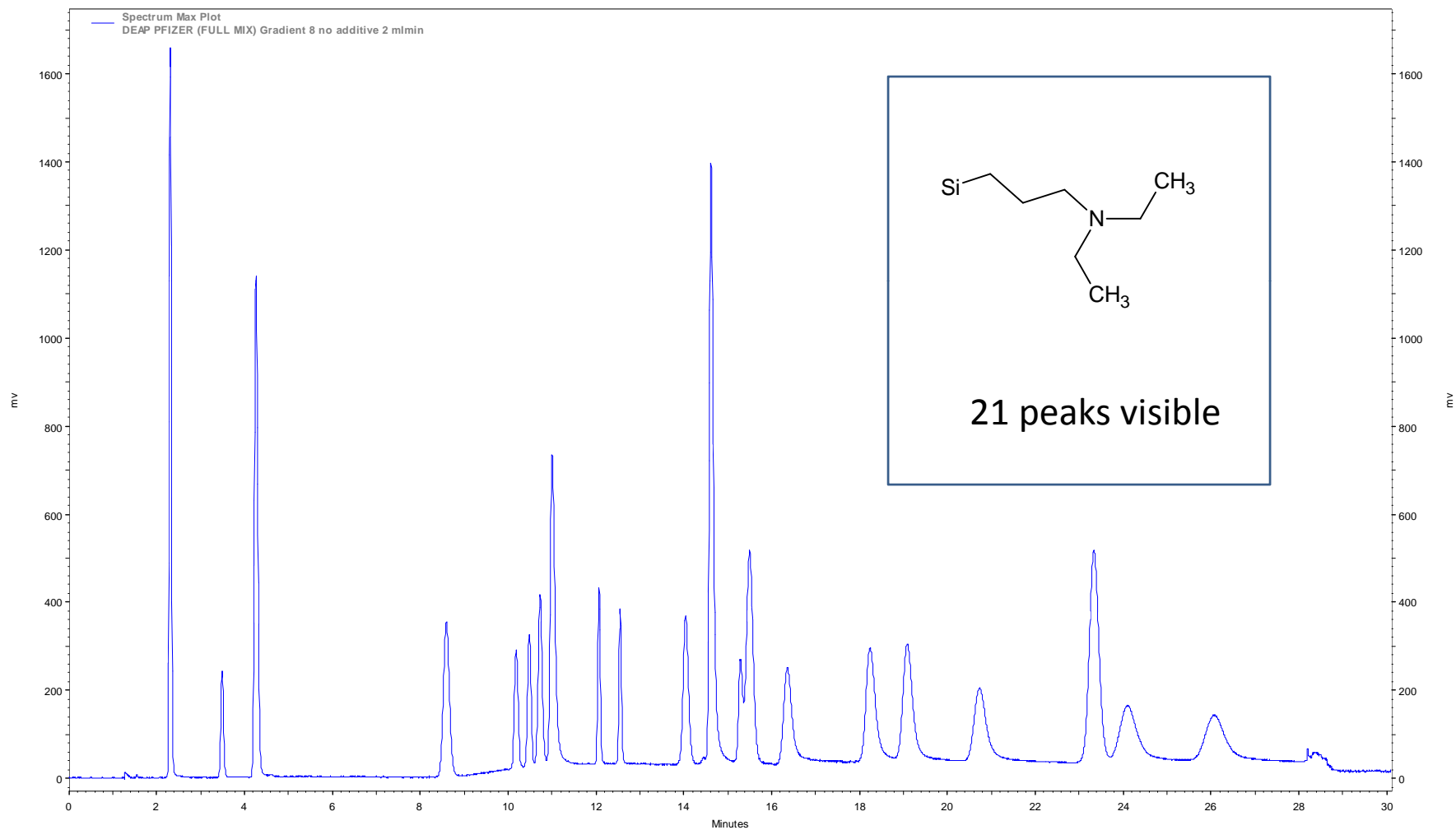
# Dibenzylaminopropyl



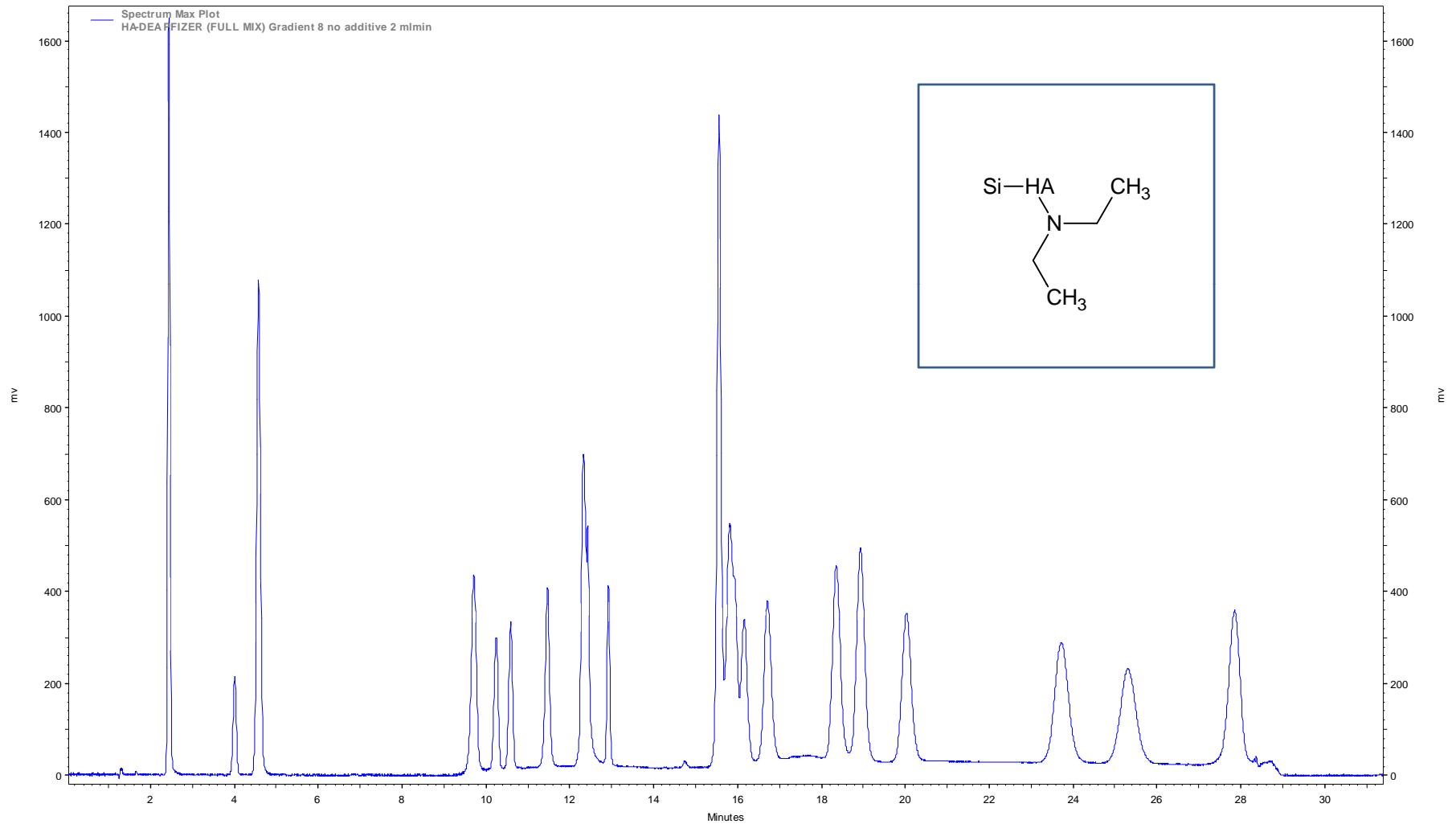
# HA-Dibenzyl



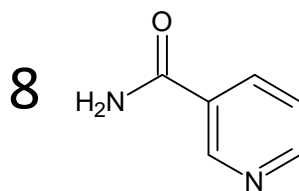
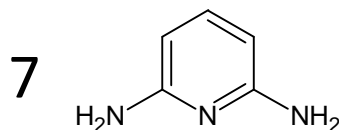
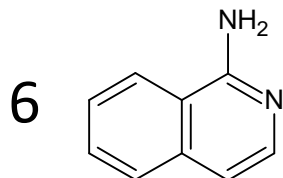
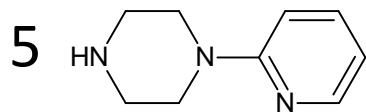
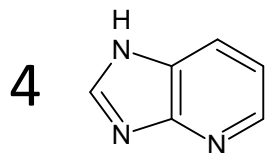
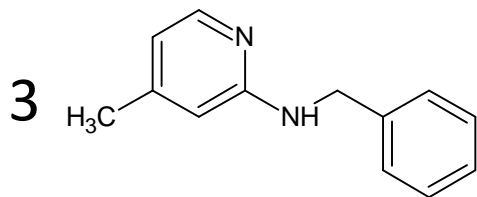
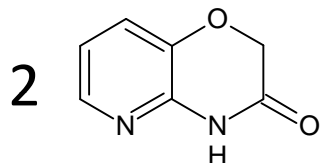
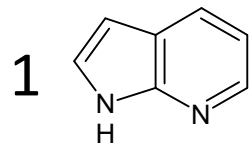
# Diethylaminopropyl (DEAP)



# HA-Diethylamino

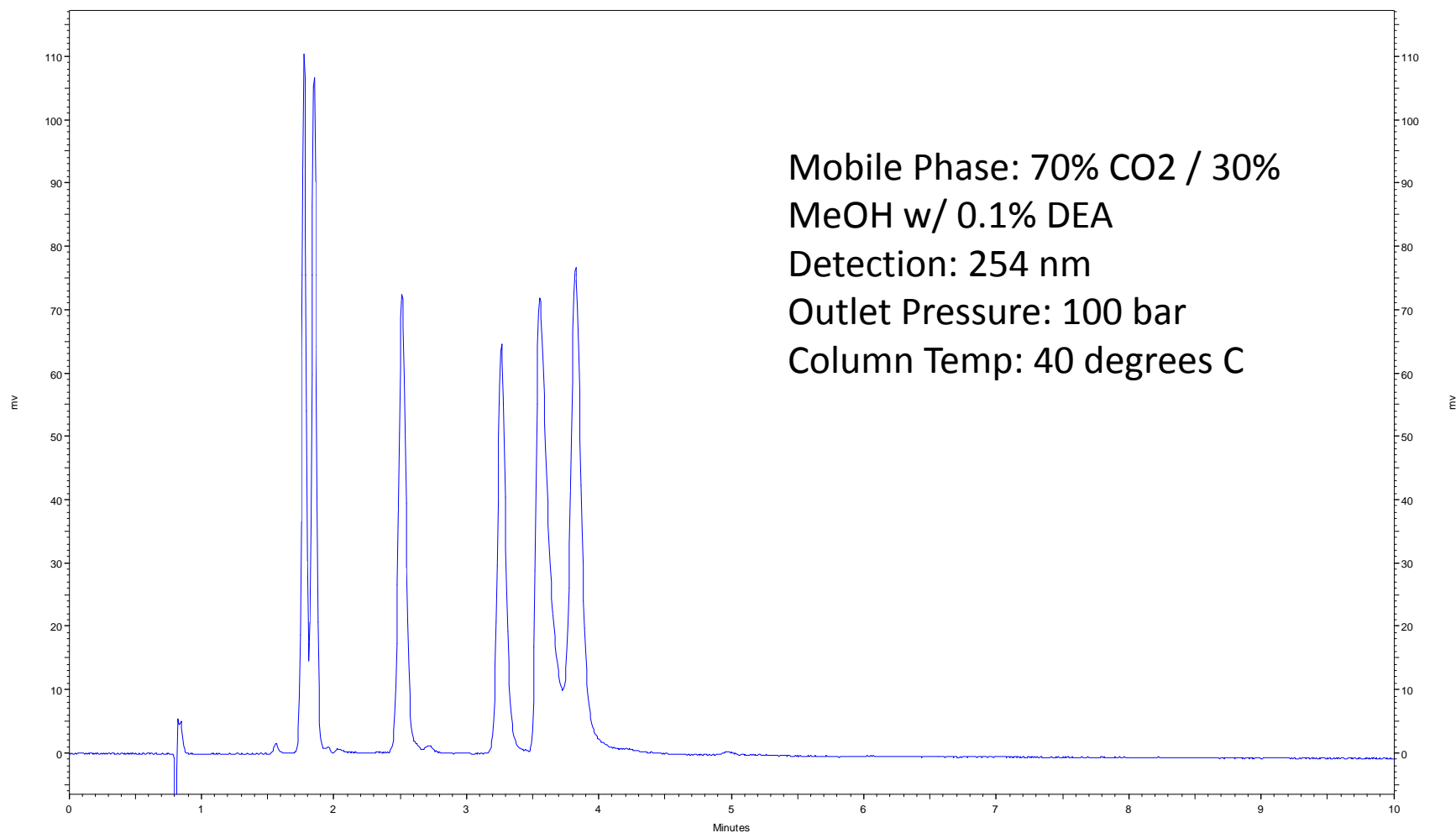


# Polar, Basic Compounds

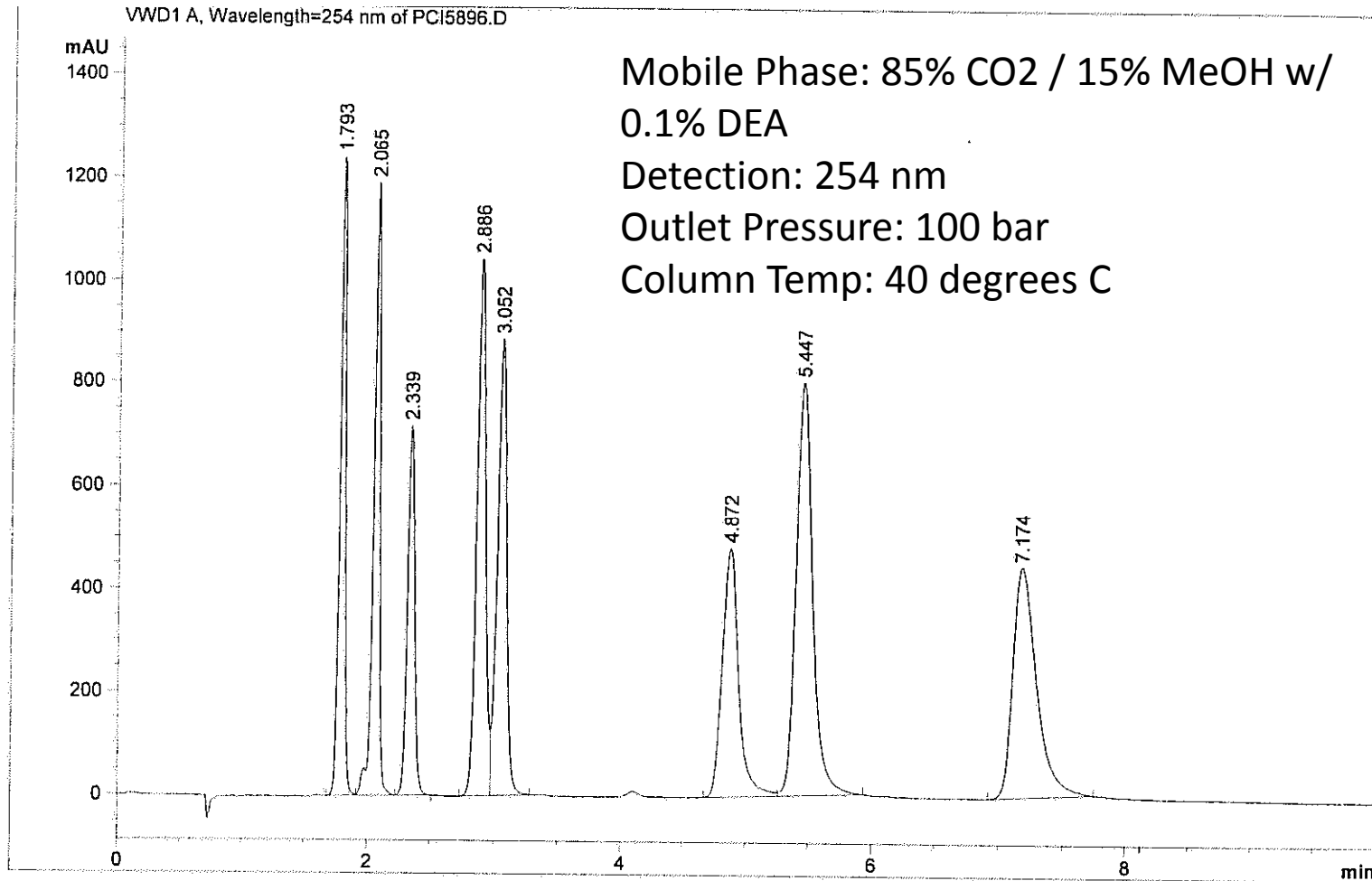


1. 7-Azaindole
2. 2H-Pyrido[3,2-b]-1,4-oxazin-3(4H)-one
3. 2-Benzylamino-4-methylpyridine
4. 4-Azabenzimidazole
5. 1-(2-Pyridyl)piperazine
6. 1-Aminoisoquinoline
7. 2,6-Diaminopyridine
8. Niacinamide

# 2-Ethylpyridine



# HA-Pyridyl



# Conclusions

- HA phases offer complementary selectivity and generally enhanced retention vs. standard counterparts
  - HA stationary phases present an opportunity to expand and customize column choices based on application and user needs – we can easily and quickly bond custom phases with this synthetic route.
  - We plan to continue to develop the HA series of columns and they will be available in our catalog in the coming months.

# Acknowledgements

Thank you to the following people for their assistance and effort

***Jasco, Inc.***

John Pollard  
DJ Togniarelli  
Rich Cowman  
Will Wing

***Princeton  
Chromatography***

Linda Caldwell  
Viktor Yablon  
Ray Fisher  
Chris Homoky

***Pfizer***

Bill Farrell  
Melissa Dunkle