

# Hydrophilic & Rigid SPPS Resin Prototypes

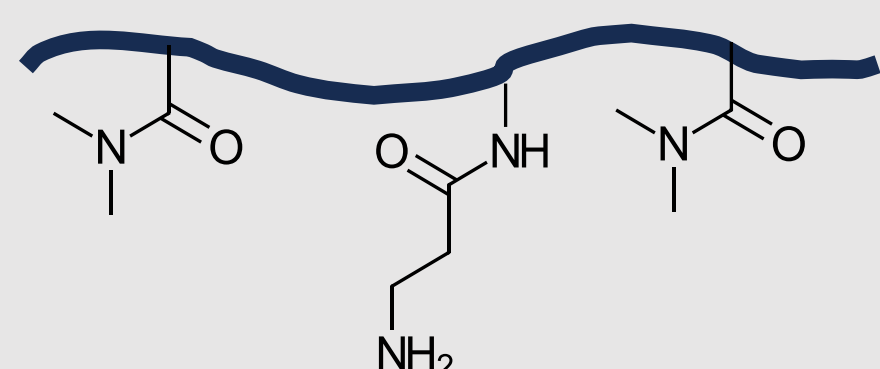
Solid phase synthesis resin evolving concepts based on poly-dimethylacrylamide (PDMA) and poly-styrene (PS) variants

Ecevit Yilmaz, PhD / Redstone Separations AB, Lund, Sweden

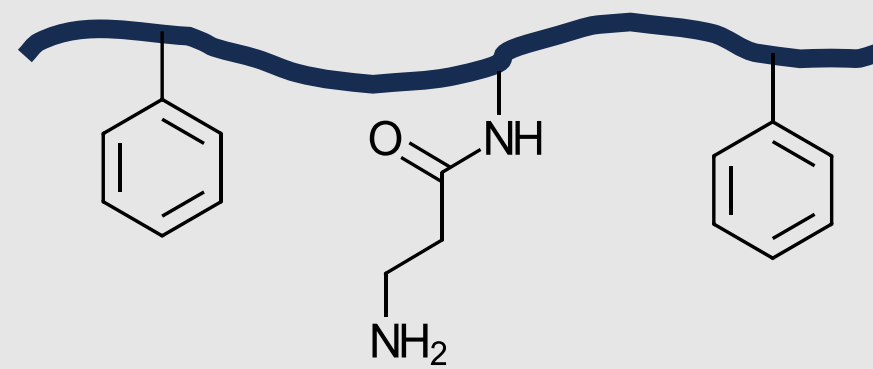
## Company details

**Redstone Separations AB** is a niche expert company on resins for separation, resin-bound reagents, enzyme carriers and solid phase synthesis. It is an innovative, flexible, fast delivery new Scandinavian supplier of polymeric resin products.

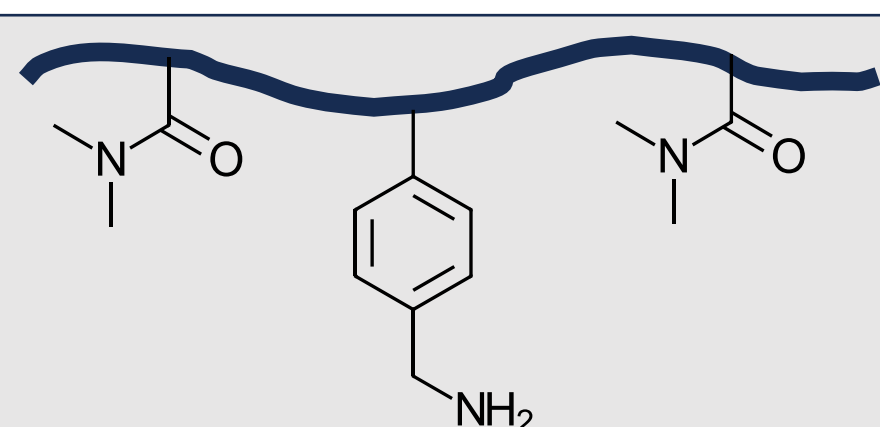
## Novel hydrophilic or rigid SPPS resin concepts



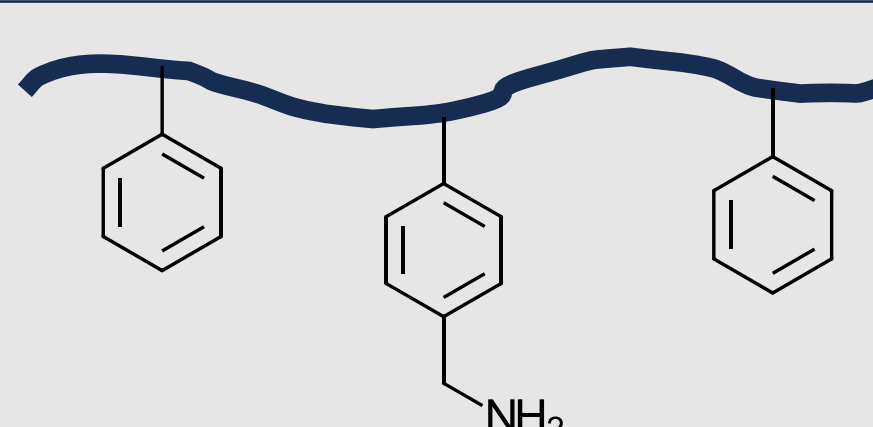
1) PDMA based with ethylene amine.



3) PS based with ethylene amine.



2) PDMA based with benzyl amine.



4) PS based with benzyl amine.

### Hydrophilic / hydrophobic spectrum concept

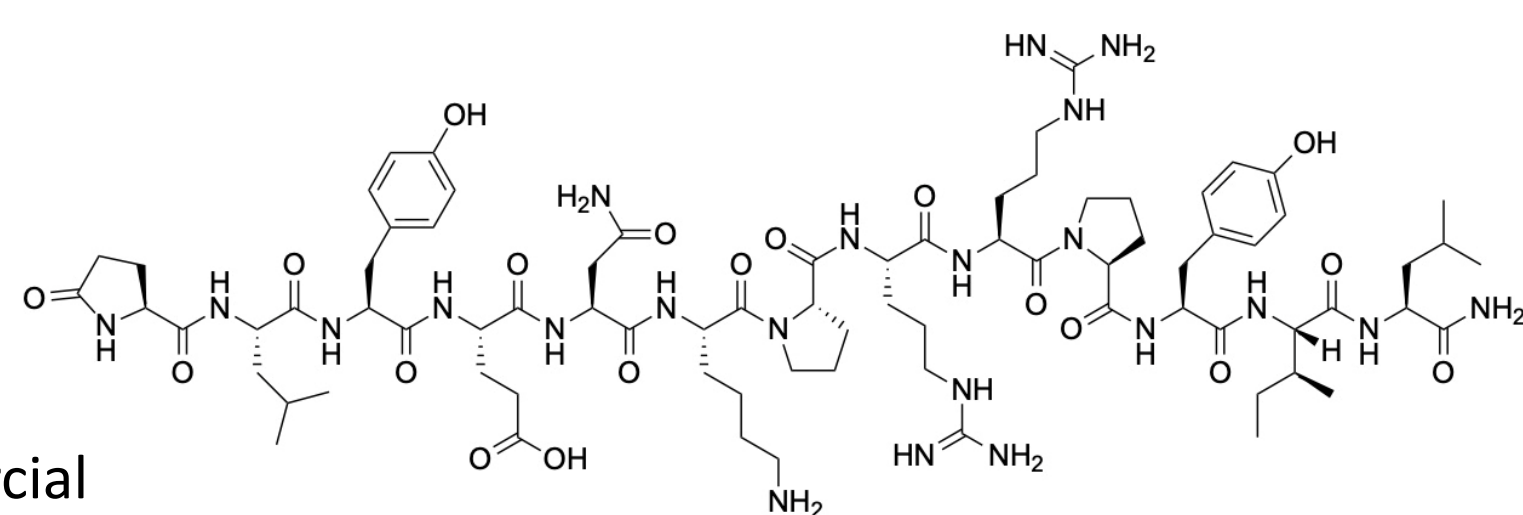
1. Fully hydrophilic with PDMA and amide based amine anchor
  2. Mainly hydrophilic with PDMA backbone and aromatic hydrophobic benzyl amine anchor
  3. Mainly hydrophobic PS backbone with hydrophilic amide based amine anchor
  4. Mainly hydrophobic PS backbone with aromatic benzyl amine anchor
- Variations and combinations on rigidity, loading, hydrophilicity are possible to design and to provide for testing.

## Product: SABIT PS-DVB AM X2-C0.75

**Gel-type, PS based, 2 % X-link, Capacity: 0.75 mmol/g of benzyl amine.**

### Proof of concept study

- Model compound-1:
  - Neurotensin, 13 AA
- Model compound-2:
  - GLP-1, 30 AA
- Comparison to commercial resins.
- Conventional SPPS
- Microwave heated SPPS



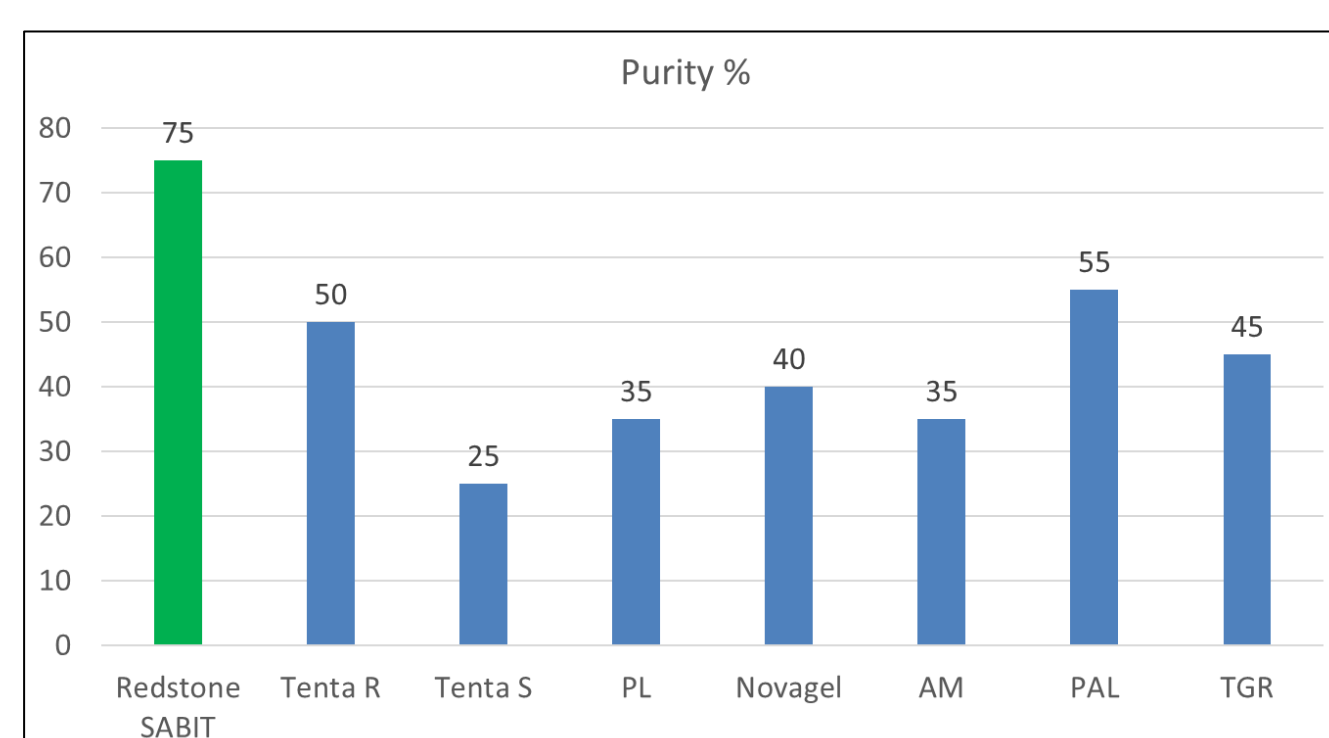
### Results for Neurotensin:

Sabit X2-0.75 is comparable to established products available on the market.

### Results for GLP-1:

Sabit X2-C0.75 is functional and results satisfactory, but improvements need to be made

(more details: [www.redstone-sep.com](http://www.redstone-sep.com)).

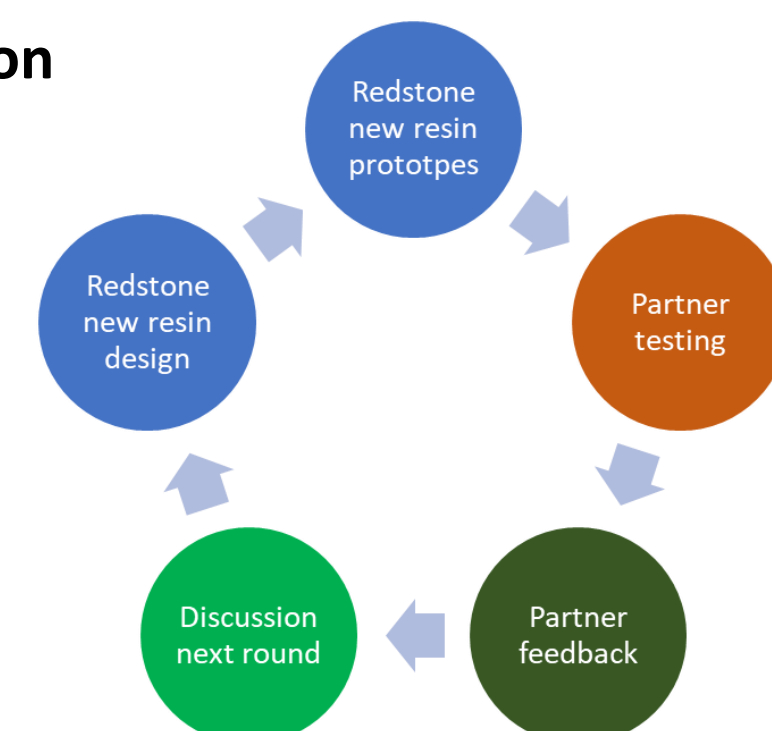


**Credit:** Evaluations conducted by group of Prof. Knud Jensen with Kemal Jahic and Dr. Kasper Kildegaard at Copenhagen University, Denmark.

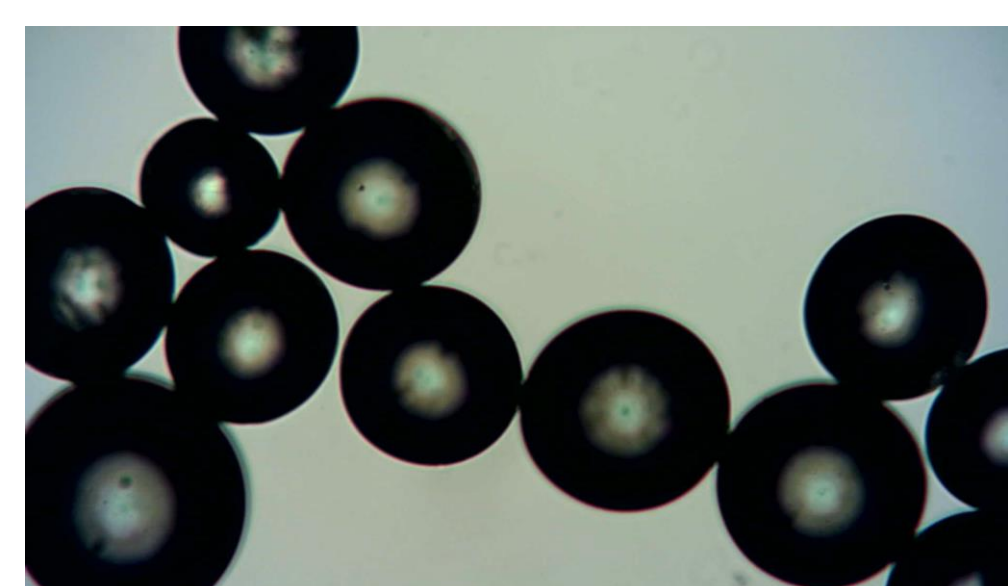
## Collaboration and new resin possibilities

### Early participation for tailored SPPS optimization

- We are seek collaborations with commercial or academic peptide synthesis users to refine novel SPPS material concepts towards the next generation of SPPS resins.
- Current prototypes are functional, with the goal for improved performance for specific future applications.
- Improvements will be continuous – we synthesize optimized versions in a short turn-around time.
- Get your quote for a sample and get immediate access to these unique hydrophilic or rigid variants.



### New or tailored resin possibilities



### Resin parameters to optimize

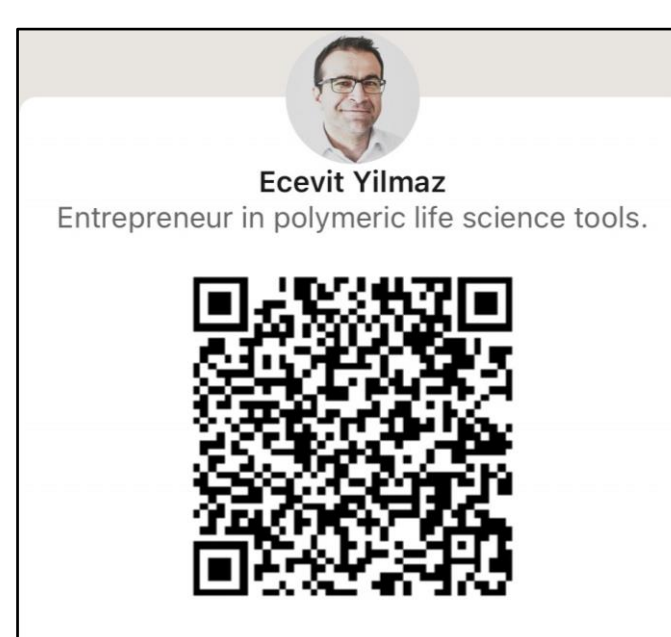
- Cross-linking (X) degree: for rigidity in flow and swelling
- Loading (C): for capacity
- Resin backbone chemistry to adapt to hydrophilicity of peptide
- Particle size: for column or suspension adaptation
- Anchor chemistry: for ligands etc

## Contact us!

Lets discuss your desired material.

Get in contact:  
LinkedIn: scan the QR code.

Write an email or call.



Contact me at Redstone Separations AB

My email: [ey@redstone-sep.com](mailto:ey@redstone-sep.com)

Call me: +46-738-156 130 (CET: 8.00 – 18.00)

Address: Scheelevägen 22, 223 63 Lund, Sweden

Web: <https://www.redstone-sep.com/>

