



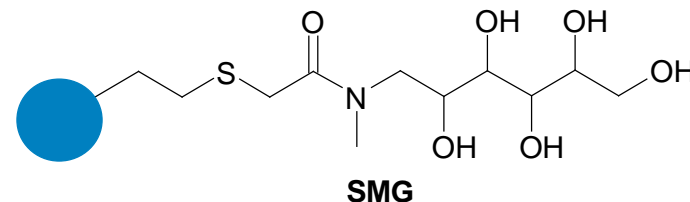
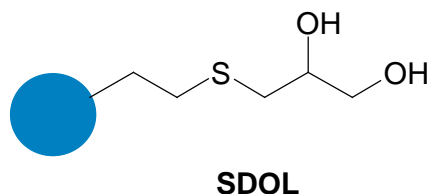
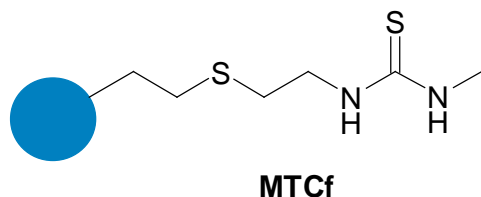
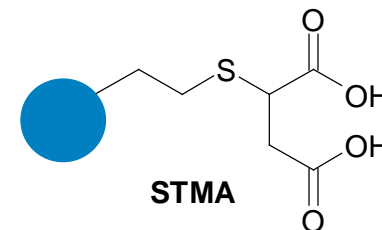
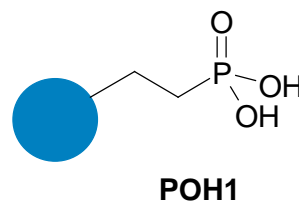
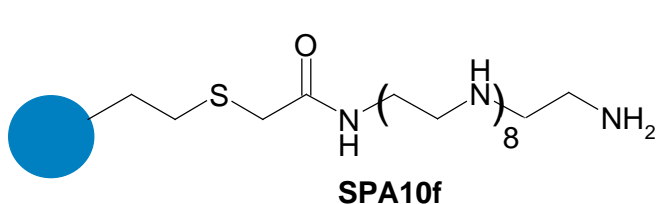
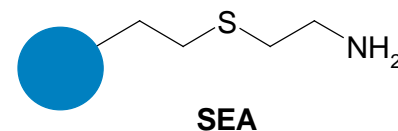
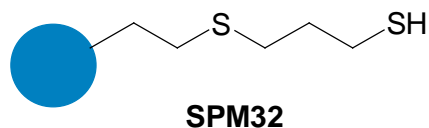
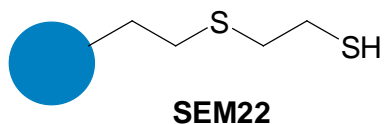
# Novel Functionalised Silicas for Medicinal Chemistry Applications

## Organic Scavengers

January 2009

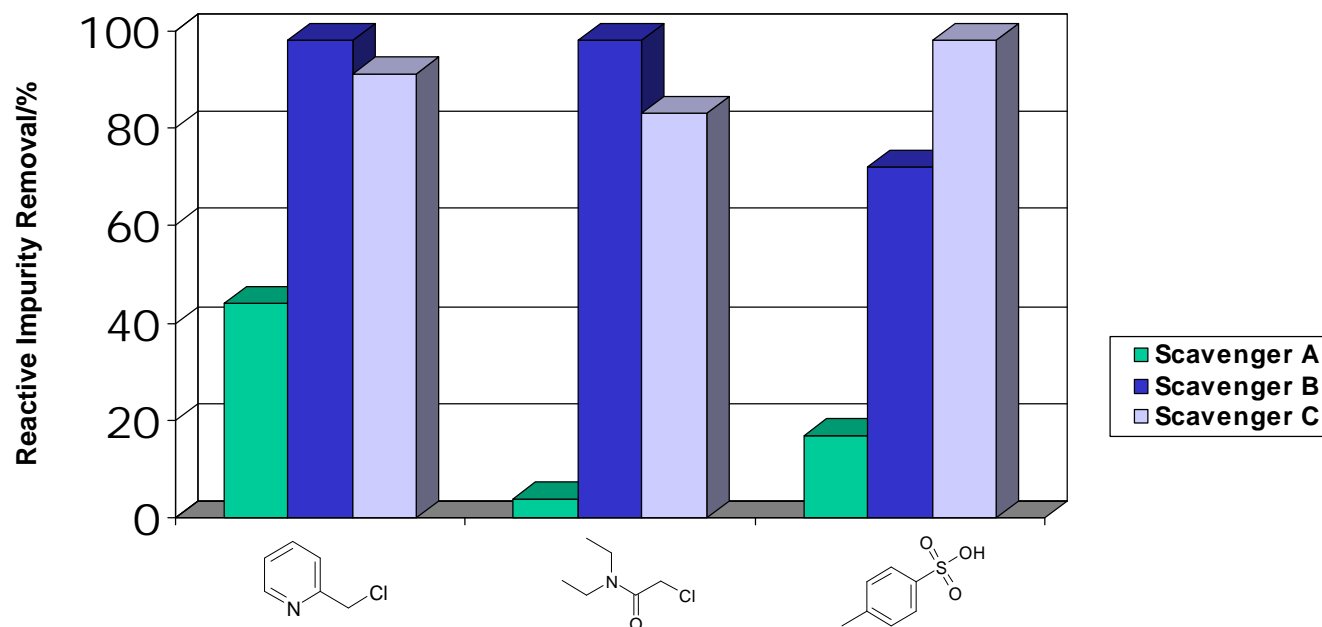


# Organic Scavenger Portfolio



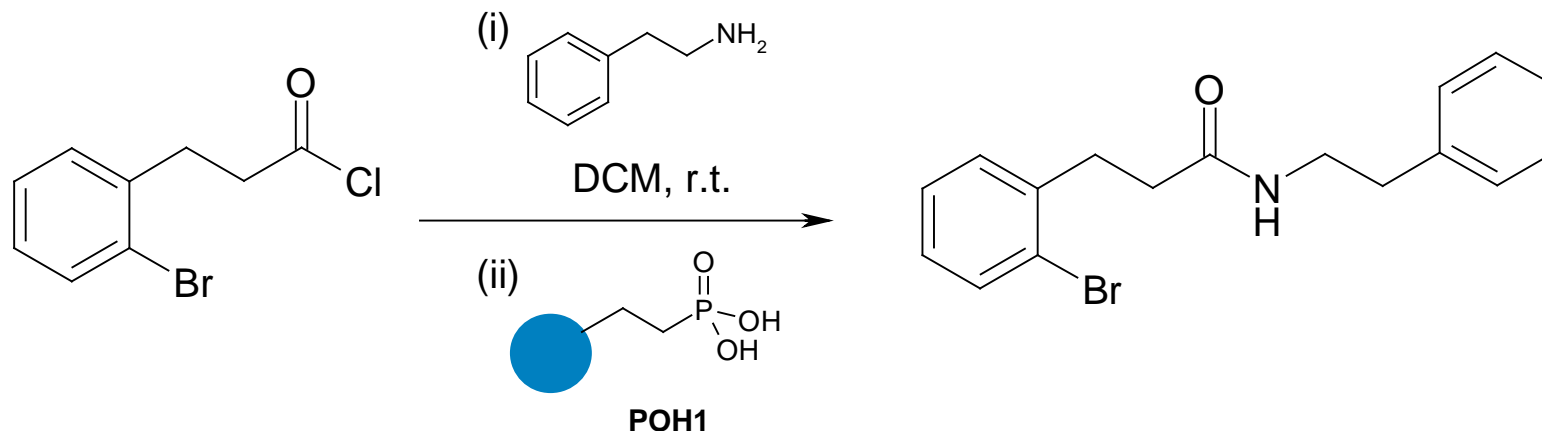
- Electrophile scavengers for alkylating agents, PGIs
- Specialised scavengers – boronic acids, amino acids, phosphines...
- Cation exchange materials - selective removal & separations of amines, bases
- Available as kits targeted to electrophiles, ion exchange, H-bond formations
- Quick, easy-to-use SPE cartridge formats available
- Available as loose powders on bulk scale for slurry applications, or packed into PhosphonicS™ Process Development cartridge (up to 0.5 kg scavenger)

# Scavenging Study - Electrophiles (PGIs)



- Impurity removal effective at r.t., enhanced at 50 °C; just 2 eq. used in most cases
- No additives such as 3° amines required - also need to be removed!
- Also effective for carboxylic acid, acyl & sulfonyl halide scavenging
- Clear performance benefits from matching scavenger to impurity

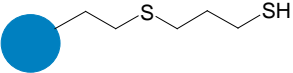
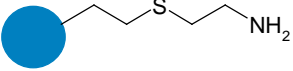
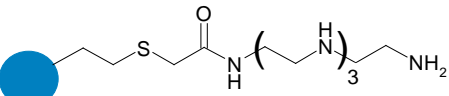
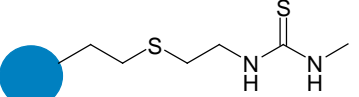
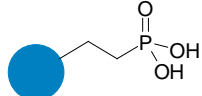
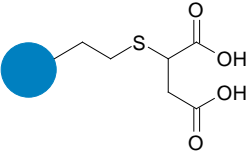
# Organic Scavenging Case Study



- Amide formation as part of synthesis of calcium entry blockers
- Amine used in excess
- Simple filtration through a plug of POH1 gave the desired amide product in >95% purity and in 94% yield
- For SPE case studies see [Brown, J. et al, \*Tetrahedron Lett.\*, 2008, 49, 4968](#)

# Organic Scavenger Cartridges

- For purification of Discovery scale reactions from 50 mg to 500 mg; for single compounds or focused arrays. Also applicable to lab. scale Process Development reactions
- 6 mL volume; 1 g scavenger or 75 mL volume; 10 g scavenger in each cartridge
- Silica : particle size 35-70  $\mu\text{m}$ ; pore size 60 $\text{\AA}$
- Also available as loose powders for small scale slurry applications

Material	Code	Scavenges
	<b>SPM32d</b>	Electrophiles
	<b>SEAd</b>	Electrophiles Weak Anions
	<b>SPA5d</b>	Electrophiles Weak Anions
	<b>MTCd</b>	Electrophiles
	<b>POH1d</b>	Cations Basic cmpds, Amines
	<b>STMAAd</b>	Cations Basic cmpds, Amines

