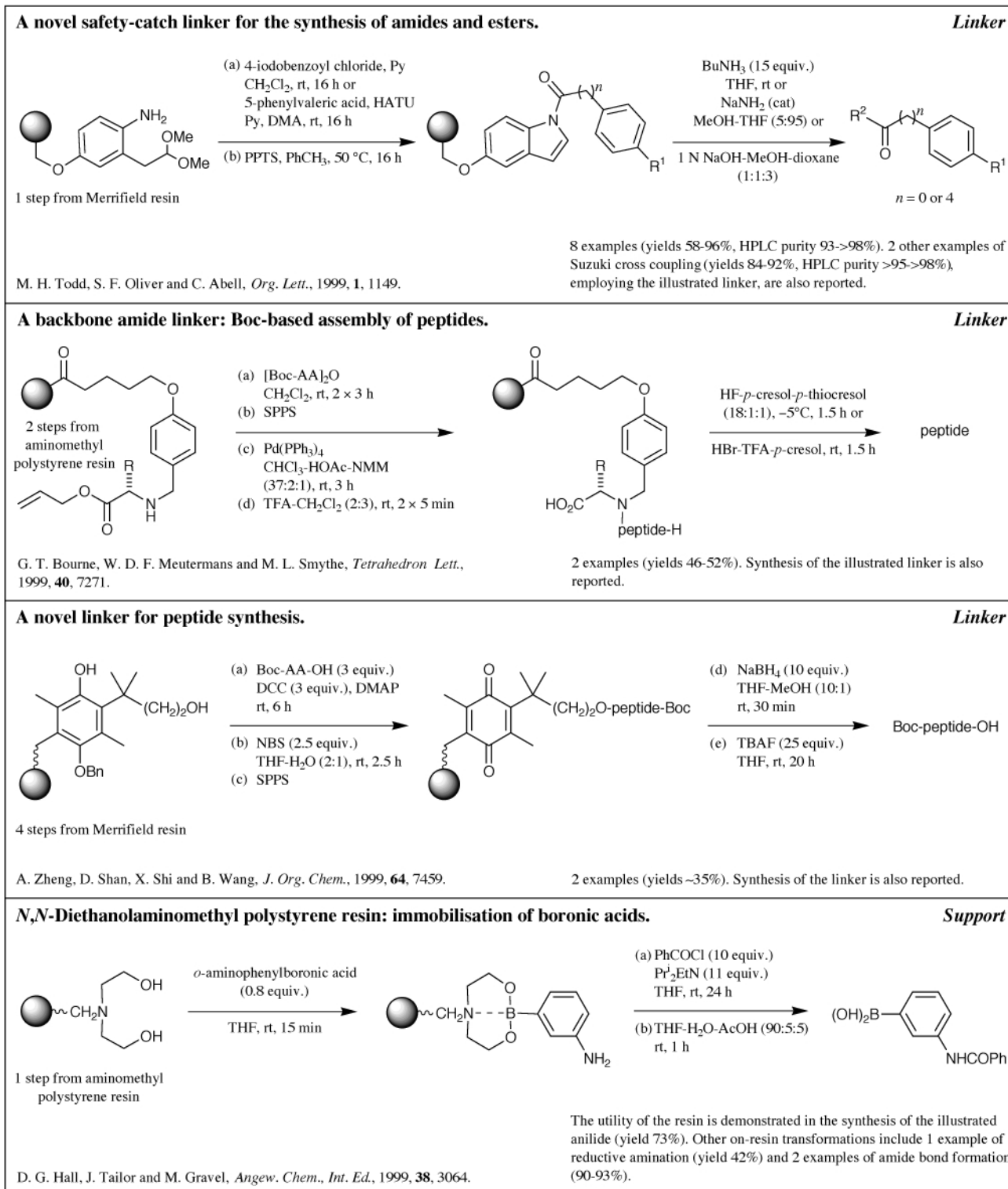


Compilers: John Christopher, Catherine McCusker, Susan Booth and Jason Tierney

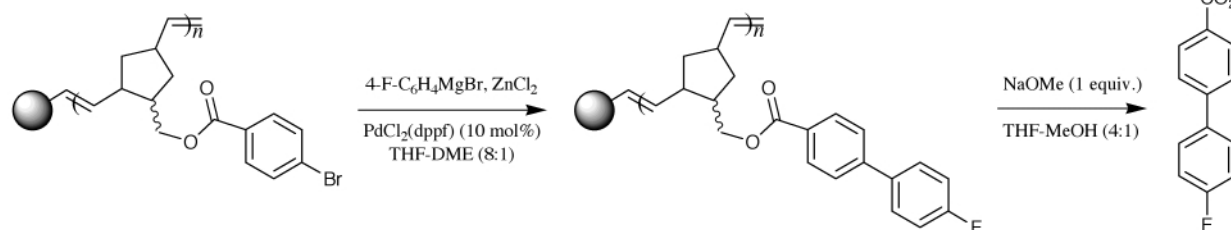
Department of Chemistry, University of Glasgow, Glasgow, UK G12 8QQ

Perkin 1 Abstracts: Solid Phase Organic Synthesis are a selection of significant papers published in the recent literature covering the broad area of Solid Phase Organic Synthesis (SPOS). The abstracts cover preparation of single compounds on solid support as well as combinatorial libraries. Advances in new linker design are also covered.



ROMP-spheres from a cross metathesis reaction between vinyl polystyrene and norbornene: application to chemical transformations.

Support

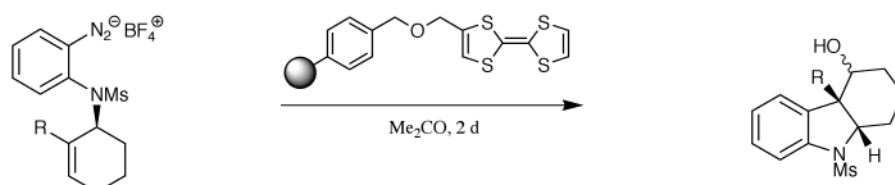


A. G. M. Barratt, S. M. Cramp and R. S. Roberts, *Org. Lett.*, 1999, **1**, 1083.

1 example (no yield) and 1 example of block copolymer formation (no yield). The synthesis of the resin is also reported.

Radical-polar crossover reactions with polymer-supported tetrathiafulvalene.

Reagent

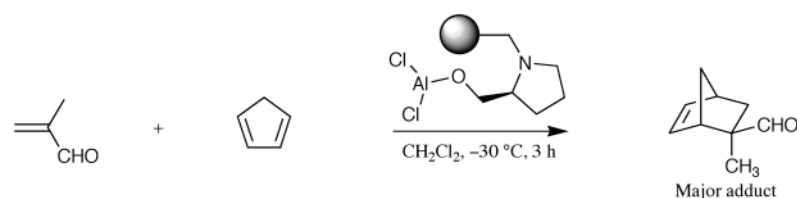


B. Patro, M. Merrett, J. A. Murphy, D. C. Sherrington and M. G. J. T. Morrison, *Tetrahedron Lett.*, 1999, **40**, 7857.

3 examples (27-40%). Synthesis of resin-bound tetrathiafulvalene and its use in 2 other radical reactions (yields 39-51%) are also reported.

Polymer-supported aluminium catalysts for the Diels-Alder reaction: the role of the polymeric backbone.

Catalyst



B. Altava, M. I. Burguete, E. García-Verdugo, S. V. Luis, R. V. Salvador and M. J. Vicent, *Tetrahedron*, 1999, **55**, 12897.

8 examples of the illustrated reaction (yields 76-98%, *exo:endo* 85:15-92:8, ee 2-25%) using polymer-supported catalysts with differing polymeric backbones.

Palladium catalysed coupling reactions using guanidinium phosphine ligands on glass beads.

Catalyst

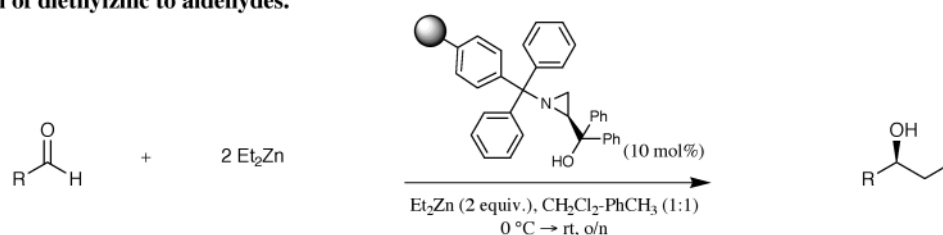


M. P. Leese and J. M. J. Williams, *Synlett*, 1999, 1645.

7 examples (yields 55-87%). 1 example of allylic substitution (yield 56%) and 4 examples of Sonogashira coupling (yields 58-87%), using the illustrated catalyst, are also reported.

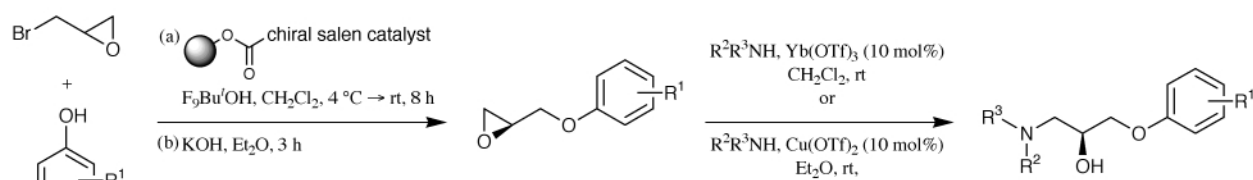
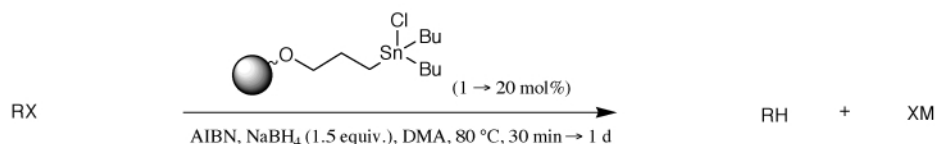
Polymer-supported *N*-tritylaziridinyl(diphenyl)methanol as an effective catalyst in the enantioselective addition of diethylzinc to aldehydes.

Catalyst

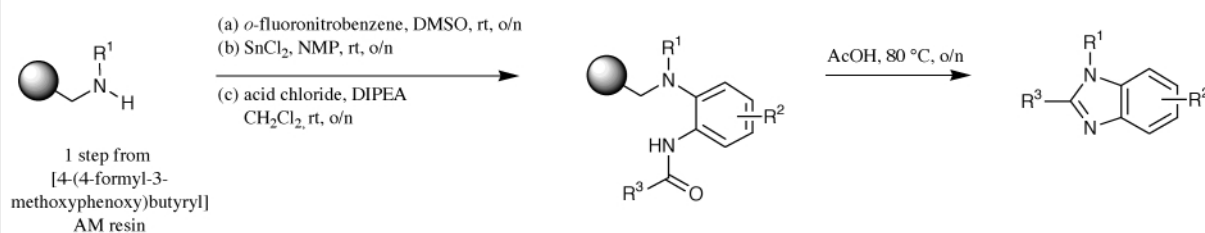


P. ten Holte, J.-P. Wijgengangs, L. Thijs and B. Zwanenburg, *Org. Lett.*, 1999, **1**, 1095.

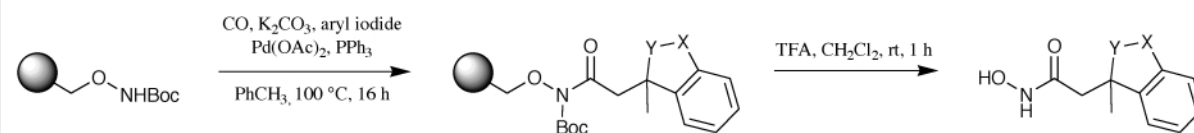
6 examples (yields 77-92%, ee 77-97%). Synthesis of the catalyst from trityl chloride resin is also reported.

Enantioselective parallel synthesis using polymer-supported chiral Co(salen) catalysts.*Catalyst*S. Peukert and E. N. Jacobsen, *Org. Lett.*, 1999, 1, 1245.50 member library (yields 81-87%, HPLC purity 94-96%, ee 97.5-98%).
The generation of 2 other libraries, using the illustrated catalyst, are also reported.**Organotin catalyst on soluble polystyrene support: free radical reductions of alkyl halides.***Catalyst*E. J. Enholm and J. P. Schulte II, *Org. Lett.*, 1999, 1, 1275.

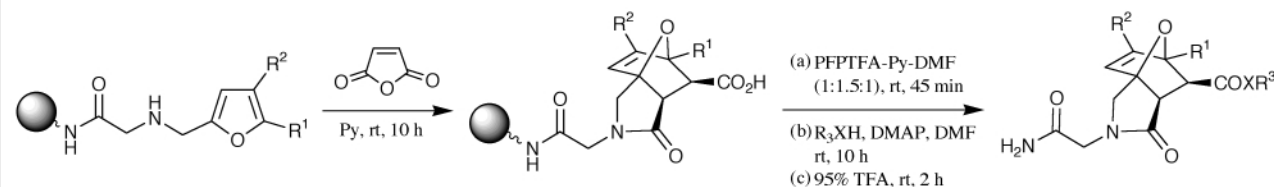
10 examples (yields 60-96%).

Traceless synthesis of benzimidazoles.J. M. Smith and V. Krchnák, *Tetrahedron Lett.*, 1999, 40, 7633.

10 examples (yields 30-74%, HPLC purity 82-96%).

Hydroxamic acids via palladium catalysed cascade reactions.

1 step from Wang resin

R. Grigg, J. P. Major, F. M. Martin and M. Whittaker, *Tetrahedron Lett.*, 1999, 40, 7709.5 examples (yields 20-40%). 10 further examples of solution-phase hydroxamic acid synthesis (yields 60-96%) and 3 examples of solution-phase *N*-benzyloxyimide synthesis (yields 57-68%) are also reported.**Tricyclic nitrogen heterocycles via intramolecular Diels-Alder reaction of furans.**

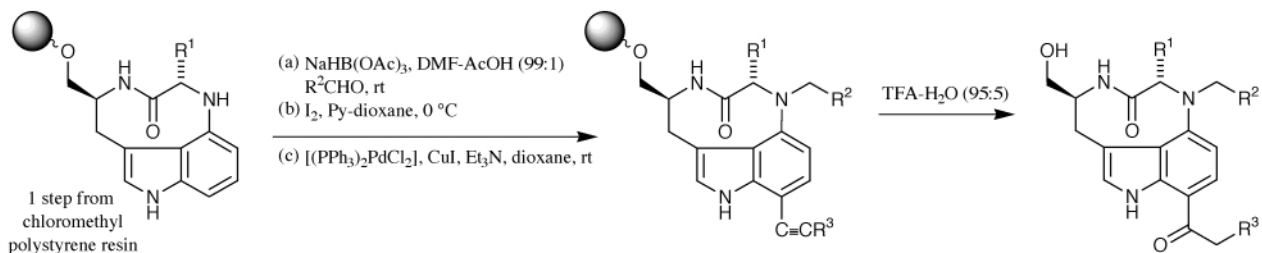
2 steps from ArgoGel-Rink resin

PFPTFA = pentafluorophenyl trifluoroacetate

K. Paulvannan, T. Chen and J. W. Jacobs, *Synlett*, 1999, 1609.

14 examples (yields 83-98%).

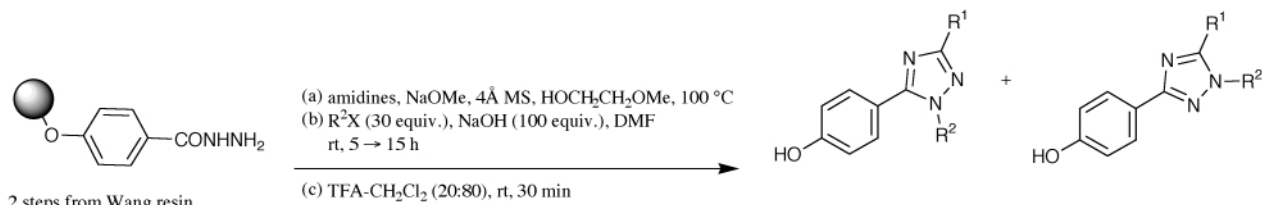
Natural product synthesis: an indolactam library.



B. Meseguer, D. Alonso-Díaz, N. Griebenow, T. Herget and H. Waldmann, *Angew. Chem., Int. Ed.*, 1999, **38**, 2902.

31 member library (yields 10-65%). Biological evaluation of 11 members of the library is also reported.

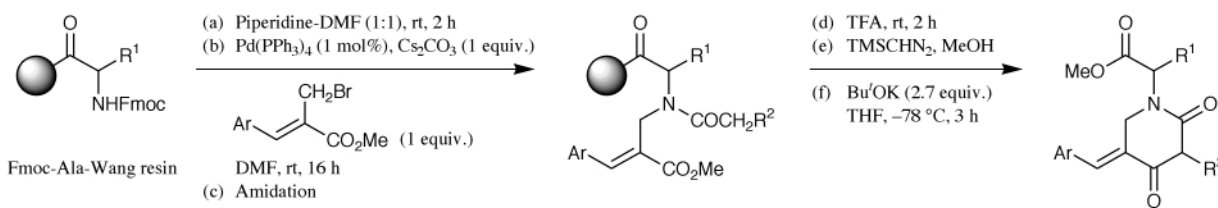
Trisubstituted 1,2,4-triazoles.



A. R. Katritzky, M. Qi, D. Feng, G. Zhang, M. C. Griffith and K. Watson, *Org. Lett.*, 1999, **1**, 1189.

10 examples (HPLC purity 54-90%, regioisomers 18:82-94:6).

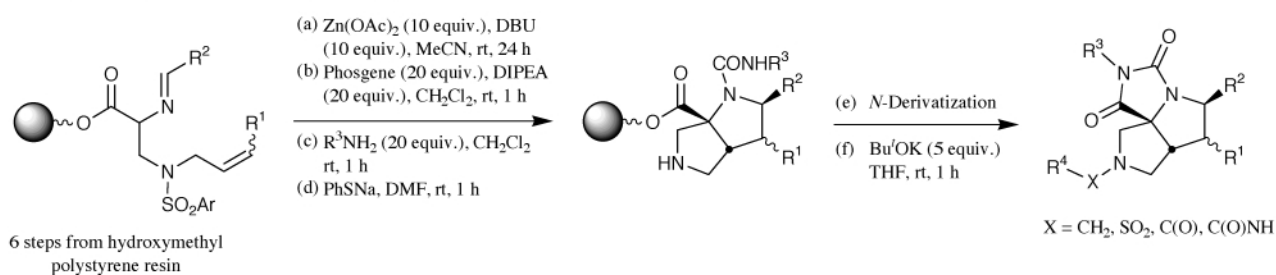
Substituted 2,4-dioxopiperidines.



W. Chai and W. V. Murray, *Tetrahedron Lett.*, 1999, **40**, 7185.

5 examples (yields 60-72%).

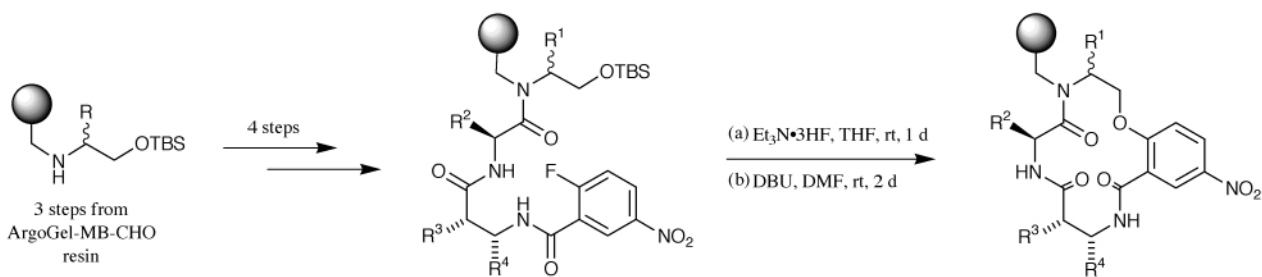
Hexahydro-2,3a,7-triazacyclopenta[*c*]pentalene-1,3-diones.



G. Peng, A. Sohn and M. A. Gallop, *J. Org. Chem.*, 1999, **64**, 8342.

12 examples (yields 14-34%, HPLC purity > 90%).

14-Membered macrocycles.



E. A. Jefferson and E. E. Swayze, *Tetrahedron Lett.*, 1999, **40**, 7757.

The illustrated resin-bound macrocycle is further functionalised to create a 26 member library (HPLC purity 72->95%).

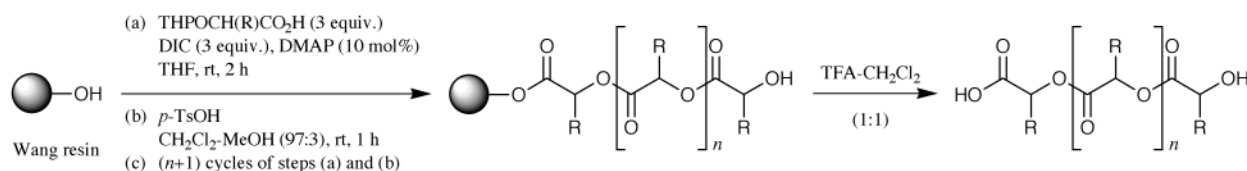
D-Galactose as a chiral five-dimension-diversity scaffold.



C. Kallus, T. Opatz, T. Wunberg, W. Schmidt, S. Henke and H. Kunz, *Tetrahedron Lett.*, 1999, **40**, 7783.

Application of orthogonal protecting groups in combination with a thioglycoside anchor allows selective coupling of side-chains to galactose in a combinatorial fashion: 4 examples (yields 6-38%) and 10 examples using a similar resin-bound galactose (yields 29-79%) are reported.

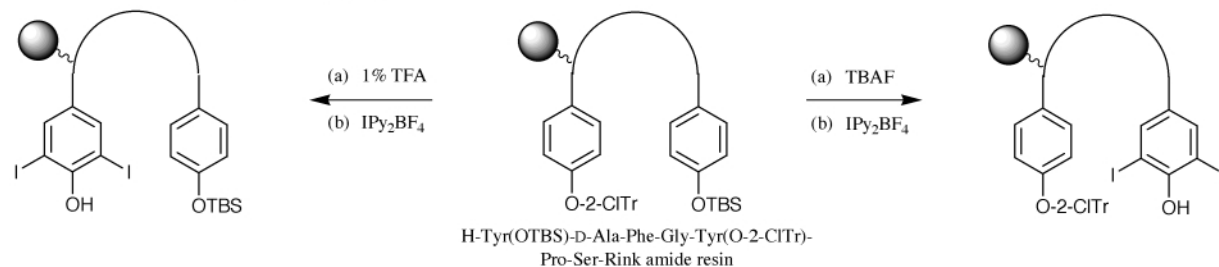
Depsides and depsipeptides.



O. Kuisle, E. Quiñoá and R. Riguera, *J. Org. Chem.*, 1999, **64**, 8063.

4 examples (yields 72-84%) and 1 other example of cyclic depside synthesis (yield 15%). The synthesis of valinomycin, a depsipeptide, is also reported (yield 24%).

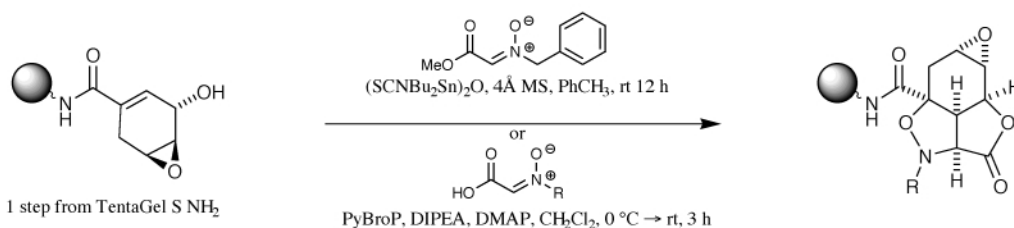
Selective iodination of phenolic groups.



G. Arsequell, G. España, G. Valencia, J. Barluenga, R. Pérez Carlón and J. M. González, *Tetrahedron Lett.*, 1999, **40**, 7279.

A strategy for the chemoselective iodination of Tyr residues in a peptide sequence containing multiple Tyr residues is reported.

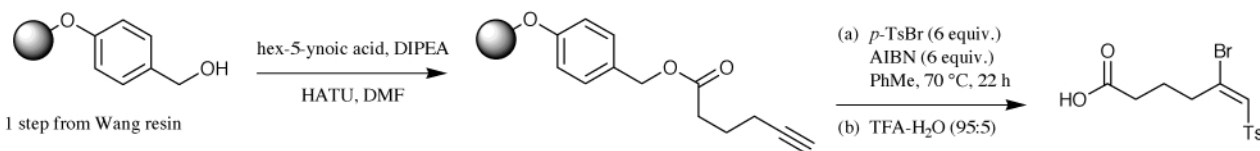
Polycyclic small molecules for use in chemical genetic assays.



D. S. Tan, M. A. Foley, B. R. Stockwell, M. D. Shair and S. L. Schreiber, *J. Am. Chem. Soc.*, 1999, **121**, 9073.

7 examples (yields >98%). The synthesis of a 2.18 million member binary encoded library, using the illustrated tetracyclic templates, is also reported.

Addition of toluenesulfonyl radicals to solid-supported alkenes and alkynes.



S. Caddick, D. Hamza and S. N. Wadman, *Tetrahedron Lett.*, 1999, **40**, 7285.

1 example (yield 94%). 1 example of alkane synthesis *via* the illustrated route (yield 93%) and 2 examples of alkene and alkane synthesis (yields 24-25%), *via* a similar route, are also reported.