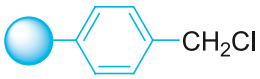
PL-CMS Resin

Peptide Synthesis, Solid Phase Synthesis

1% DVB, 2% DVB, MP



Description: Chloromethylpolystyrene; poly(styrene-co-chloromethylstyrene)
Application: Acid Labile, Synthesis of Acids
See Also: PL-Wang

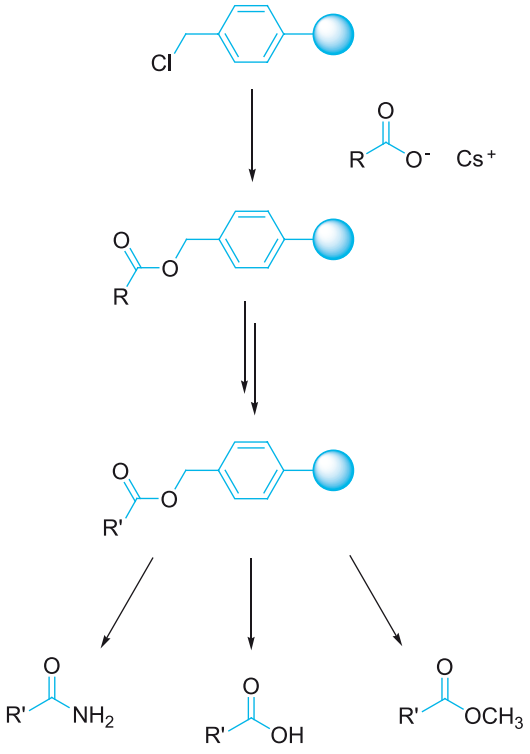
Commonly known as Merrifield resin, PL-CMS is a copolymer support designed for solid phase synthesis of peptides using Boc chemistry.

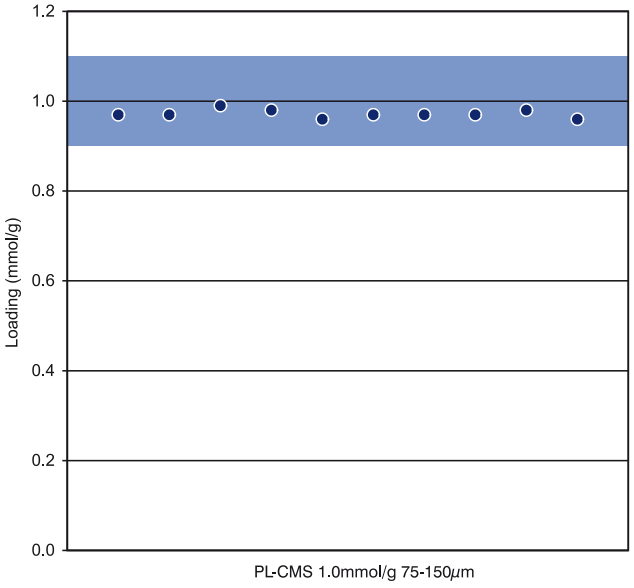
Boc-amino acids are typically attached to the resin as a cesium salt, although other techniques have also been used. A slight excess of acid is neutralized with cesium carbonate and the activated acid isolated by evaporation. A solution of the activated acid in DMF should be reacted with DMF-swollen PL-CMS at an elevated temperature (e.g. 50°C) overnight. Cleavage typically requires treatment with very strong acid such as HF or TFMSA.

Other useful techniques for cleavage include saponification or hydrolysis to create free acids, trans-esterification to create methyl esters, or aminolysis to form carboxamides.

PL-CMS can be used to generate a variety of other supports by the attachment of appropriate linkers, particularly through Williamson ether synthesis.

Note: specialist equipment is required to safely perform HF cleavage operations.





This plot shows the exceptional loading reproducibility of ten batches of PL-CMS 1.0mmol/g 75-150µm manufactured over a period of more than a decade.

Ordering Information

PL-CMS Resin (1% DVB)	Part No
1.0mmol/g 35-75μm	PL1461-1899, 5g PL1461-3899, 25g PL1461-4899, 100g PL1461-6899, 1kg
0.4mmol/g 75-150μm	PL1461-1749, 5g PL1461-3749, 25g PL1461-4749, 100g PL1461-6749, 1kg
0.6mmol/g 75-150μm	PL1461-1769, 5g PL1461-3769, 25g PL1461-4769, 100g PL1461-6769, 1kg
0.8mmol/g 75-150μm	PL1461-1799LL, 5g PL1461-3799LL, 25g PL1461-4799LL, 100g PL1461-6799LL, 1kg
1.0mmol/g 75-150μm	PL1461-1799, 5g PL1461-3799, 25g PL1461-4799, 100g PL1461-6799, 1kg
1.2mmol/g 75-150μm	PL1461-1799HL, 5g PL1461-3799HL, 25g PL1461-4799HL, 100g PL1461-6799HL, 1kg
1.4mmol/g 75-150μm	PL1461-1799VHL, 5g PL1461-3799VHL, 25g PL1461-4799VHL, 100g PL1461-6799VHL, 1kg

PL-CMS Resin (2% DVB)	Part No
1.0mmol/g 75-150μm 2% DVB	PL1461-1798, 5g PL1461-3798, 25g PL1461-4798, 100g PL1461-6798, 1kg

References

(1) Merrifield, R. B. *J. Am. Chem. Soc*. **1963**, *85*, 2149-2154.
(2) Wong, J. Y.; Leznoff, C. C. *Can. J. Chem*. **1973**, *51*, 2452-2456.
(3) Gisin, B. F. *Helv. Chim. Acta* **1973**, *56*, 1476-1482.
(4) Arshady, R.; Kenner, G. W.; Ledwith, A. *Makromol. Chem*. **1976**, *177*, 2911-2918.
(5) Merrifield, R. B. *Pure Appl. Chem*. **1978**, *50*, 643-653.
(6) Arshady, R. *Makromol. Chem.* **1988**, *189*, 1295-1303.
(7) Frenette, R.; Friesen, R. W. *Tetrahedron Lett*. **1994**, *35*, 9177-9180.
(8) Parlow, J. J.; Mischke, D. A.; Woodard, S. S. *J. Org. Chem*. **1997**, *62*, 5908-5919.
(9) Conti, P.; Demont, D.; Cals, J.; Ottenheijm, H. C. J.; Leysen, D. *Tetrahedron Lett*. **1997**, *38*, 2915.
(10) Brase, S.; Enders, D.; Kobberling, J.; Avemaria, F. *Angew. Chem., Int. Ed*. **1998**, *37*, 3413-3415.
(11) Adrian, F. M.; Altava, B.; Burguete, M. I.; Luis, S. V.; Salvador, R. V.; Garcia-Espana, E. *Tetrahedron* **1998**, *54*, 3581-3588.
(12) Stones, D.; Miller, D. J.; Beaton, M. W.; Rutherford, T. J.; Gani, D. *Tetrahedron Lett.* **1998**, *39*, 4875-4878.
(13) Kobayashi, S.; Aoki, Y. *Tetrahedron Lett*. **1998**, *39*, 7345-7348.
(14) Kobayashi, S.; Akiyama, R. *Tetrahedron Lett*. **1998**, *39*, 9211-9214.
(15) Brase, S.; Schroen, M. *Angew. Chem., Int. Ed*. **1999**, *38*, 1071-1073.

Continued Overleaf

For more ordering information, please see overleaf.

Ordering Information

PL-CMS Resin (1% DVB)	Part No
1.0mmol/g 400-500µm	PL1461-1299, 5g PL1461-3299, 25g PL1461-4299, 100g PL1461-6299, 1kg
2.0mmol/g 150-300µm	PL1461-1689, 5g PL1461-3689, 25g PL1461-4689, 100g PL1461-6689, 1kg
2.0mmol/g 200-250µm	PL1461-1589, 5g PL1461-3589, 25g PL1461-4589, 100g PL1461-6589, 1kg
2.0mmol/g 250-300µm	PL1461-1489, 5g PL1461-3489, 25g PL1461-4489, 100g PL1461-6489, 1kg
2.0mmol/g 400-500µm	PL1461-1289, 5g PL1461-3289, 25g PL1461-4289, 100g PL1461-6289, 1kg
2.0mmol/g 75-150µm	PL1461-1789, 5g PL1461-3789, 25g PL1461-4789, 100g PL1461-6789, 1kg
4.0mmol/g 150-300µm	PL1461-1679, 5g PL1461-3679, 25g PL1461-4679, 100g PL1461-6679, 1kg

PL-CMS MP Resin	Part No
3.0mmol/g 100Å 150-300µm	PL3561-1689, 5g PL3561-3689, 25g PL3561-4689, 100g PL3561-6689, 1kg

References continued

(16) Brase, S.; Koberling, J.; Enders, D.; Lazny, R.; Wang, M. F.; Brandtner, S. *Tetrahedron Lett.* **1999**, *40*, 2105-2108.
(17) Vanier, C.; Lorge, F.; Wagner, A.; Mioskowski, C. *Angew. Chem., Int. Ed*. **2000**, *39*, 1679-1683.
(18) Gomez, L.; Gellibert, F.; Wagner, A.; Mioskowski, C. *J. Comb. Chem.* **2000**, *2*, 75-79.
(19) Stauffer, S. R.; Katzenellenbogen, J. A. *J. Comb. Chem*. **2000**, *2*, 318-329.
(20) Herpin, T. F.; Van Kirk, K. G.; Salvino, J. M.; Yu, S. T.; Labaudiniere, R. F. *J. Comb. Chem*. **2000**, *2*, 513-521.
(21) Nicewonger, R. B.; Ditto, L.; Varady, L. *Tetrahedron Lett*. **2000**, *41*, 2323-2326.
(22) Brown, R. C. D.; Keily, J.; Karim, R. *Tetrahedron Lett*. **2000**, *41*, 3247-3251.
(23) Bleicher, K. H.; Lutz, C.; Wuthrich, Y. *Tetrahedron Lett*. **2000**, *41*, 9037-9042.
(24) Yang, W. Q.; Gao, X. M.; Springsteen, G.; Wang, B. H. *Tetrahedron Lett*. **2002**, *43*, 6339-6342.
(25) Lepore, S. D.; Wiley, M. R. *Org. Lett*. **2003**, *5*, 7-10.
(26) Hon, Y. S.; Wu, K. C. *Tetrahedron* **2003**, *59*, 493-498.
(27) Rivero, I. A.; Espinoza, K. A.; Ochoa, A. *J. Comb. Chem*. **2004**, *6*, 270-274.
(28) Cironi, P.; Cuevas, C.; Albericio, F.; Alvarez, M. *Tetrahedron* **2004**, *60*, 8669-8675.
(29) Guino, M.; Hii, K. K. *Org. Biomol. Chem*. **2005**, *3*, 3188-3193.

Additional Information

Varian Polymer Laboratories manufactures in multi kg quantities. Please enquire for details.