



TETHERS, LINKERS, SURFACE CHEMISTRY 2015

[See Tech Note 101 Thiols on Gold](#)

We offer the heterobifunctional monothiolalkane PEG tethers described by G. Whitesides for self-assembled monolayers (SAMs) on gold. These are sold as SPT-0011, the background surface, and SPT-0012A, a carboxyl-terminated heterobifunctional linker to couple your "bait" to a gold surface. SensoPath offers a semicarbazide terminus for facile coupling with an aldehyde functional group (SPT-0012B). We also offer a biotin-terminated linker (SPT-0012D) and a variety of PEGylated AFM linkers.

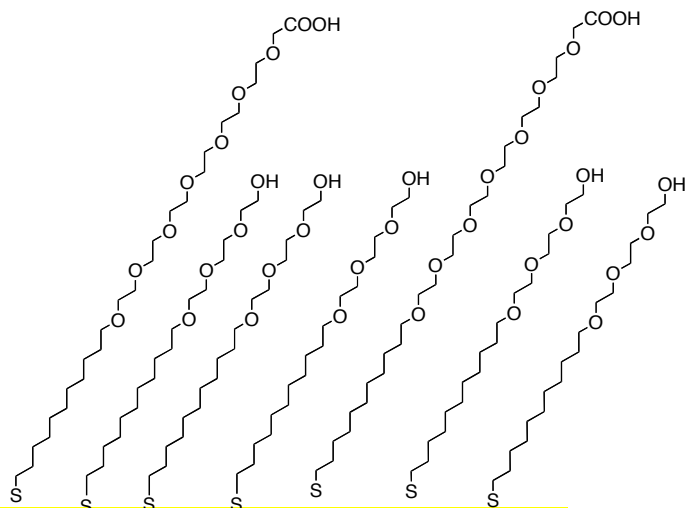
SensoPath patented dithiol analogs (SPT-0013 and SPT-0014A carboxylate) have substantially enhanced stability on gold surfaces and show very low non-specific binding. SensoPath SPT-0014B (a semicarbazide) provides facile coupling with an aldehyde functional group, combined with exceptional stability on gold surfaces and very low non-specific binding.

Various alkane and PEG lengths can be custom made for both monothiol and dithiol series. Call 406-587-6338 or e-mail a structure drawing, and amount required, to brenda.spangler@sensopath.com. We will send a quote

ASK ABOUT CUSTOM SYNTHESIS FOR YOUR SPECIFIC NEEDS (406)-587-6338

PRODUCTS

MONOTHIOL-MODIFIED SURFACES



Whitesides monothiolalkanePEG mixed self-assembled monolayer
SPT-0011/SPT-0012A based on

J. Lahiri, L. Issacs, J. Tien and G. M. Whitesides, *Anal. Chem.* **1999**, *71*, 777-790

G. B. Sigel, C. Bamdad, A. Barberis, J. Stromlinger and G. M. Whitesides, *Anal. Chem.* **1996**, *68*, 490-497.

G. M. Whitesides, et al., *J. Am. Chem. Soc.* **1991**, *113*, 12-20.

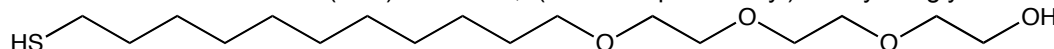
G. M. Whitesides, et al., *J. Am. Chem. Soc.* **1998**, *120*, 6548-6555.

Tethers can be used singly or used to form a mixed self-assembled monolayer with controlled concentrations of functionalized tether. The -OH terminated and PEGylated tethers significantly reduce non-specific binding (K. L. Prime and G.M. Whitesides (1991) *Science* **252**,1164).

See ABOUT US>NEWS tab for list of publications relating to our Monothiol products

MONOTHIOL PRODUCTS

SPT-0011 monothiolalkane(C11)PEG3-OH, (11-mercaptoundecyl) triethyleneglycol



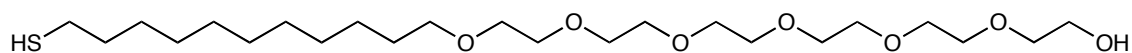
$C_{17}H_{36}O_4S$ FW = 336.53

CAS# 130727-41-2

25 mg 50 mg 100 mg Bulk pricing available

SPT-0011P4 (11-mercaptoundecyl) tetraethylene glycol also available

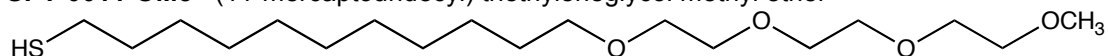
SPT-0011P6 monothiolalkane(C11)PEG6-OH (11-mercaptoundecyl) hexaethyleneglycol
CAS# 130727-44-5



$C_{23}H_{48}O_7S$ FW 468.69

10 mg 25 mg 50 mg 100 mg

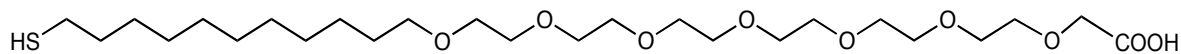
SPT-0011-OMe (11-mercaptoundecyl) triethyleneglycol methyl ether



$C_{18}H_{38}O_4S$ FW.: 350.56

25 mg 50 mg 100 mg Bulk pricing available

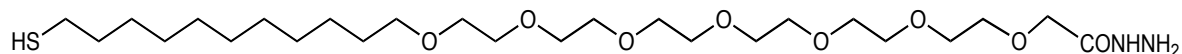
SPT-0012A carboxylate monothiolalkane(C11)PEG6-COOH CAS# 221222-49-7



$C_{25}H_{50}O_9S$ FW: 526.72

25 mg 50 mg 100 mg Bulk pricing available

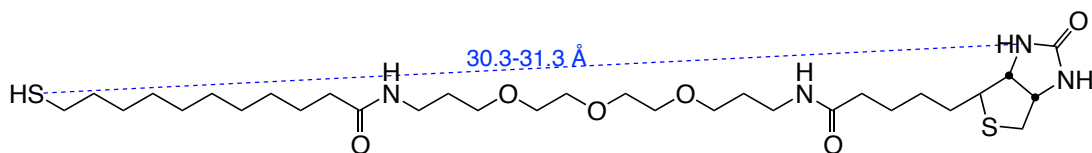
SPT-0012B hydrazide (semicarbazide) monothiolalkane(C11)PEG6-NHNH₂ CAS# 936115-50-3



$C_{25}H_{52}N_2O_8S$ FW = 540.75

25 mg 50 mg 100 mg Bulk pricing available

SPT-0012D Biotinolated AlkanePEG Thiol (BAT)



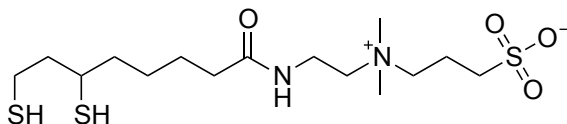
$C_{31}H_{58}N_4O_6S_2$ MW.: 646.95

REFERENCE

Nelson, K.E., Gamble, L. Jung, L.S., Boeckl, M.S., Naeemi, E., Golledge, S.L., Sasaki, T., Castner, D. G., Campbell, C. T. and Stayton, P. S. Surface Characterization of Mixed Self-Assembled Monolayers Designed for Streptavidin Immobilization. Langmuir (2001), 17, 2807-2816 (Supplemental Material) Biotin Alkane Thiol (BAT)

10 mg 25 mg 50 mg 100 mg

SPT-0016 Thioctic acid Zwitterion (Dihydrolipoic acid-sulfobetaine (DHLA-SB))



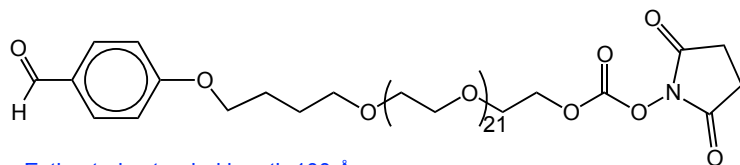
$C_{15}H_{32}N_2O_4S_3$ FW 400.62

REFERENCE

Sun, M. Hoffman, D., Sundaresan, G., Yang, L., Lamichhane, N., Zweit, J., Synthesis and characterization of intrinsically radiolabeled quantum dots for bimodal detection. Am. J. Nucl. Mol. Imaging (2012), 2(2), 122-135

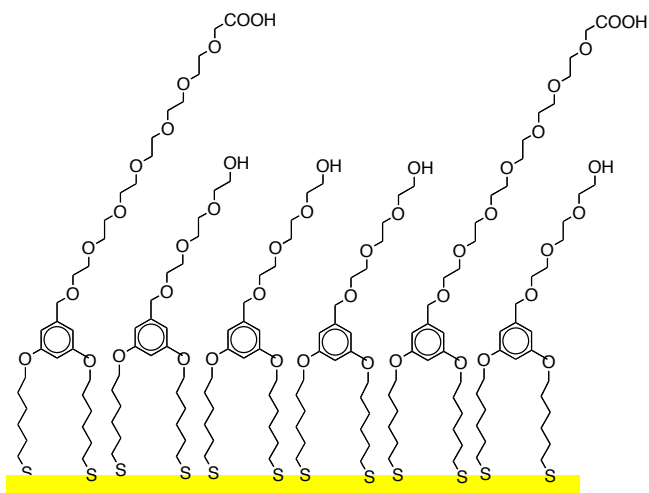
25 mg 50 mg 100 mg

SPT-0021 AFM linker Benzaldehyde PEG1000-NHS ester



(monodisperse PEG 1000, ca. 21 Eg units) approximate MW

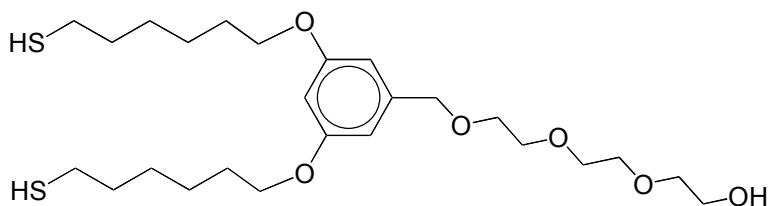
1260 10 mg



Dithiol Mixed Self-assembled Monolayer

DITHIOL PRODUCTS

SPT-0013 dithiolalkanearomaticPEG3-OH CAS# 936115-52-5

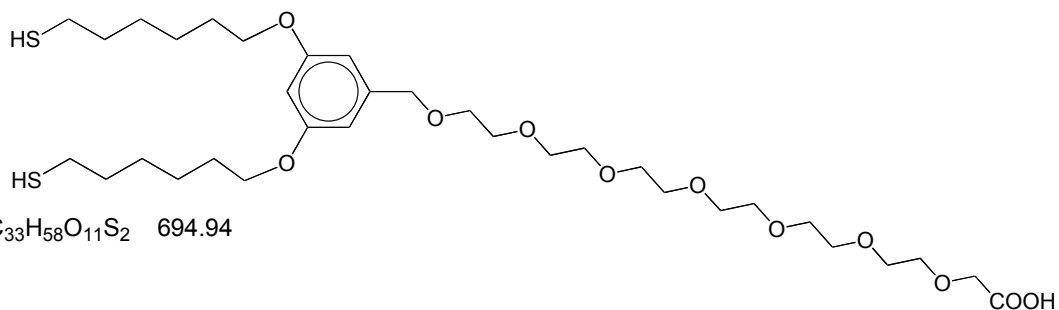


$C_{25}H_{44}O_6S_2$ MW504.74

25 mg 50 mg 100 mg

Bulk pricing available

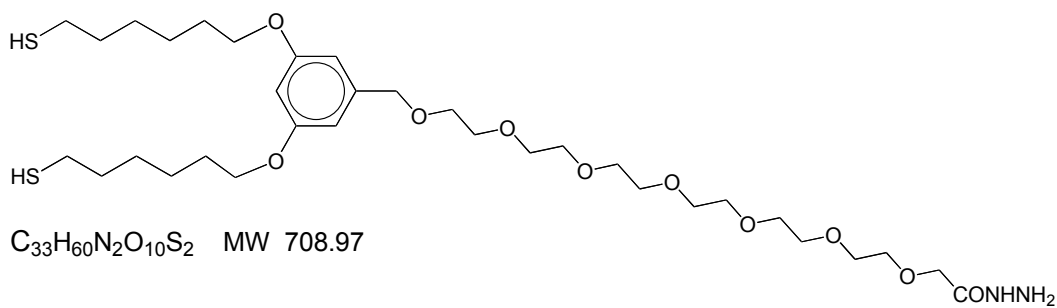
SPT-0014A6 carboxylate dithiolalkanearomaticPEG6-COOH CAS# 936115-53-6



$C_{33}H_{58}O_{11}S_2$ 694.94

25 mg 50 mg 100 mg

SPT-0014B hydrazide (semicarbazide) dithiolalkane aromatic PEG6-NHNH₂ CAS# 963115-54-7



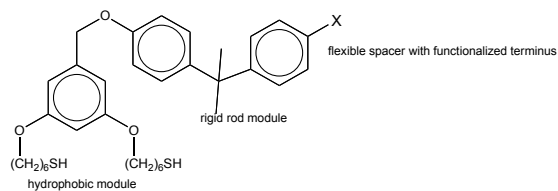
25 mg

50 mg

100 mg

Bulk pricing available

RIGID-ROD TETHERS

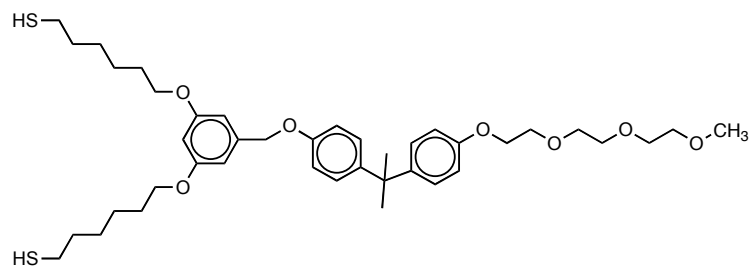


SPT-0003A X= OH $C_{34}H_{46}O_4S_2$ MW 582.86 SPECIAL ORDER
CAS# 936115-49-0

SPT-0003B X= $O(CH_2)_{3-10}COOH$ MW (var) 500 mg SPECIAL ORDER
778624-84-3

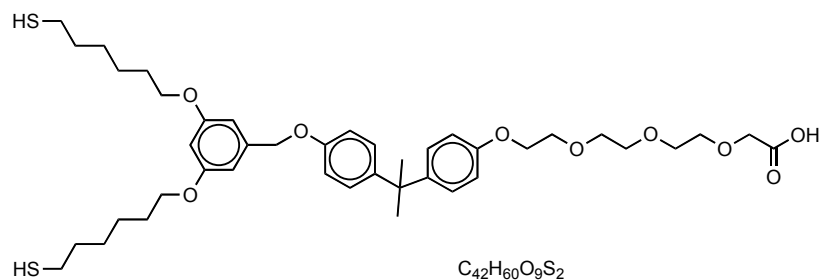
SPT-0003C X= $O(CH_2)_{3-10}CONHNH_2$ MW (var) 500 mg SPECIAL ORDER
CAS# 778624-85-4

RIGID ROD PEGylated DITHIOLS



SPT-0004

$C_{41}H_{60}O_7S_2$
Mol. Wt.: 729.04



SPT-0005

$C_{42}H_{60}O_9S_2$
Mol. Wt.: 773.05