SensoPath Technologies

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.

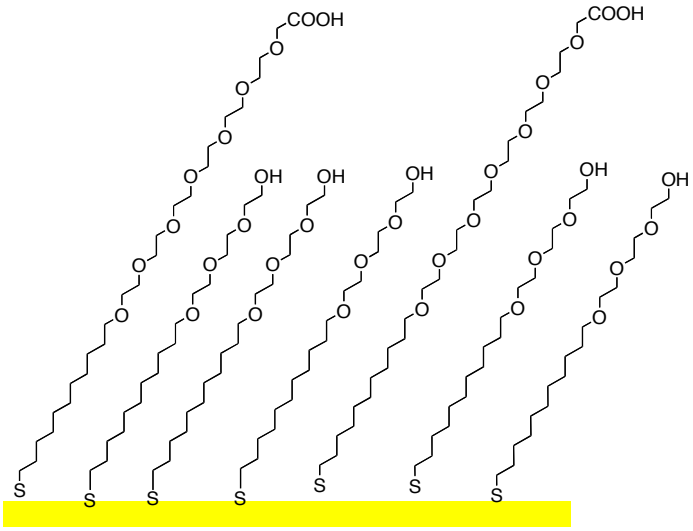
SensoPath patented dithiol analogs (SPT-0013 and SPT-0014A carboxylate) have substantially enhanced stability on gold surfaces and show very low non-specific binding. SensoPath SPT-0014B (a semicarbazide) provides facile coupling with an aldehyde functional group, combined with exceptional stability 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)-223-1608

PRODUCTS

MONOTHIOL-MODIFIED SURFACES

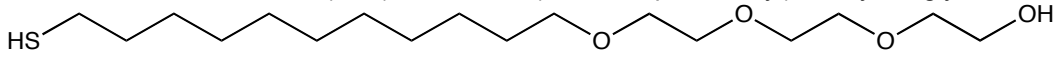


Whitesides monothiolalkanePEG mixed self-assembled monolayer
SPT-0011/SPT-0012A based on
J. Lahiri, L. Issacs, J. Tien and G. M. Whitesides, *Anal. Chem*. **1999**, *71*, 777-790
G. B. Sigel, C. Bamdad, A. Barberis, J, Stromlinger and G. M. Whitesides, *Anal. Chem.* **1996**, *68*, *490-497.*
G. M. Whitesides, 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

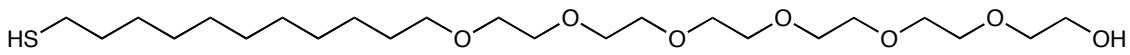


$C_{17}H_{36}O_4S$ FW = 336.53
CAS# 130727-41-2

25 mg $125 50 mg $225 100 mg $375 Bulk pricing available

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

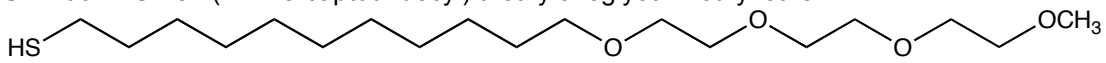
SPT-0011P6 monothiolalkane(C11)PEG6-OH (11-mercaptoundecyl) hexaethyleneglycol
CAS# 130727-44-5



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

10 mg $60 25 mg $150 50 mg $250 100 mg $400

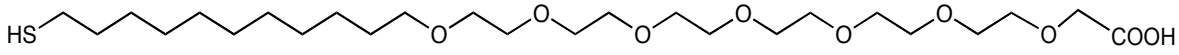
SPT-0011-OMe (11-mercaptoundecyl) triethyleneglycol methyl ether



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

25 mg $125 50 mg $225 100 mg $375 BACKORDERED

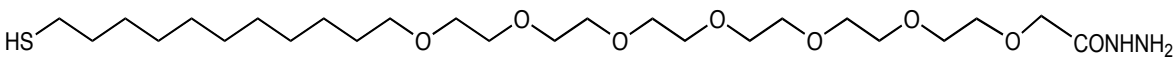
SPT-0012A carboxylate monothiolalkane(C11)PEG6-COOH CAS# 221222-49-7



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

25 mg $285 50 mg $490 100 mg $775 BACKORDERED

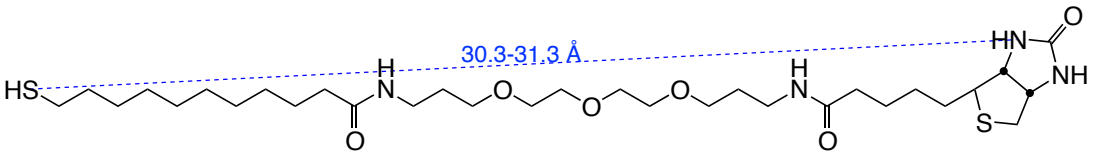
SPT-0012B hydrazide (semicarbazide) monothiolalkane(C11)PEG6-$NHNH_2$ CAS# 936115-50-3



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

25 mg $300 50 mg $515 100 mg $875 BACKORDERED

SPT-0012D Biotinolated AlkanePEG Thiol (BAT)



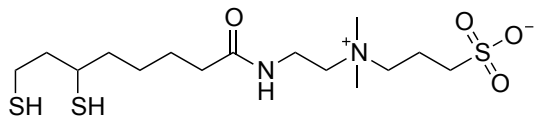
$C_{31}H_{58}N_4O_6S_2$ MW.: 646.95

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 Strepavidin Immobilization. Langmuir (2001), 17, 2807-2816 (Supplemental Material) Biotin Alkane Thiol (BAT)

10 mg $125 25 mg $315 50 mg $575 100 mg $925

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

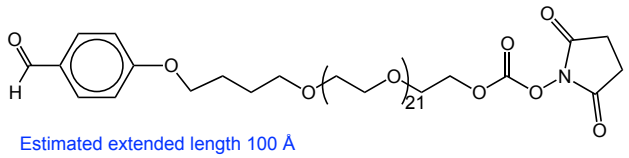


$C_{15}H_{32}N_2O_4S_3$ FW 400.62

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 $250 50 mg $450 100 mg $800 BACKORDERED

SPT-0021 AFM linker Benzaldehyde PEG1000-NHS ester

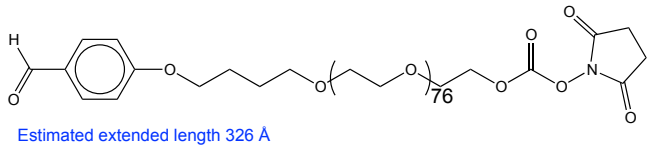


Estimated extended length 100 Å

(monodisperse PEG 1000, ca. 21 Eg units) approximate MW 1260

10 mg $100 in stock BACKORDERED

SPT-0076 AFM linker Benzaldehyde-PEG3400-NHS ester



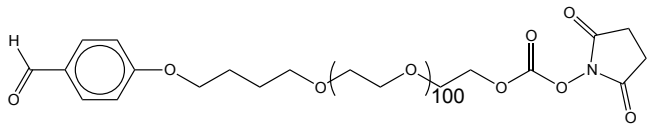
Estimated extended length 326 Å

est. MW ca 3611 Ca $C_{169}H_{323}NO_{83}$

(monodisperse PEG 3350, ca. 76 Eg units approximate MW 3611

SPECIAL ORDER Minimum Order 100 mg $1,000 BACKORDERED

SPT-00100 AFM linker Benzaldehyde-PEG4600-5000-NHS ester



est. MW ca 4860-5260

(NOT monodisperse PEG 5000, ca. 100 Eg units estimated MW 4860-5260)

SPECIAL ORDER Minimum Order 100 mg $1,000 BACKORDERED

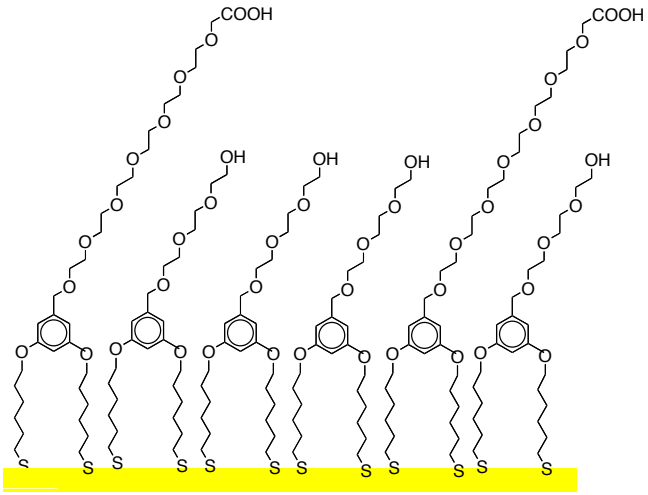
SensoPath Dithiol Tethers

See Tech Note 102: Why More is Better

DITHIOL-MODIFIED SURFACES

Pat# US7,138,121 B2 Nov 21, 2006

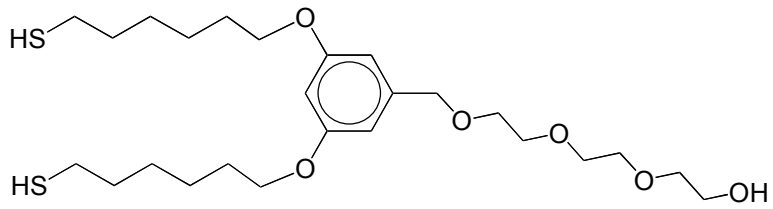
See ABOUT US>NEWS tab for list of publications relating to our Dithiol products



Dithiol Mixed Self-assembled Monolayer

DITHIOL PRODUCTS

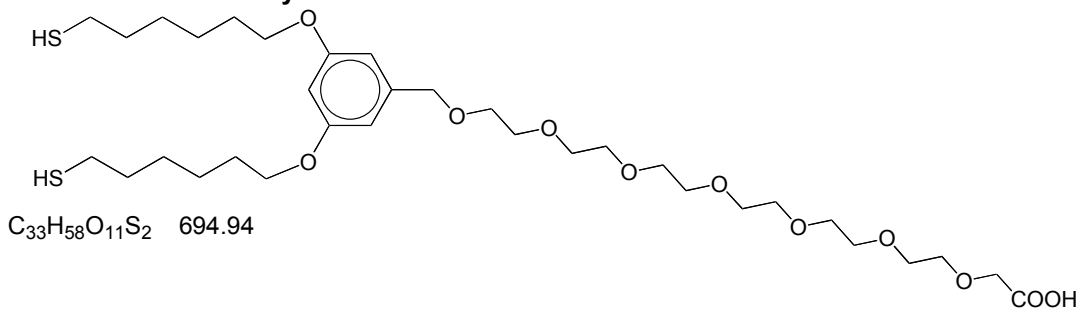
SPT-0013 dithiolalkanearomaticPEG3-OH CAS# 936115-52-5



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

25 mg $210 50 mg $360 100 mg $620

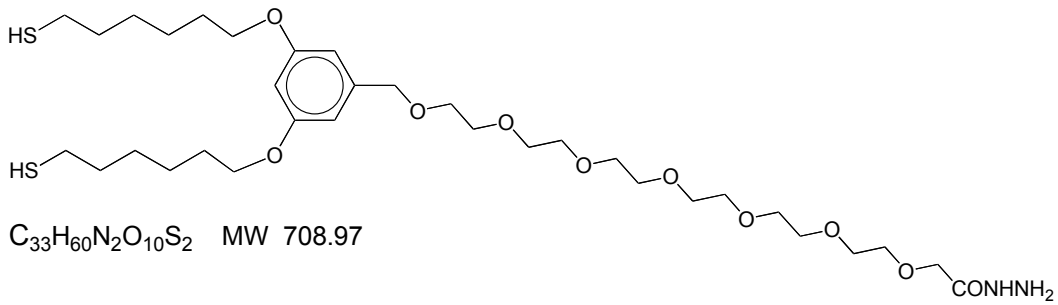
SPT-0014A6 **carboxylate** dithiolalkanearomaticPEG6-COOH CAS# 936115-53-6



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

25 mg $290 50 mg $515 100 mg $880 BACKORDERED

SPT-0014B **hydrazide (semicarbazide)** dithiolalkanearomaticPEG6-$NHNH_2$ CAS# 963115-54-7



$C_{33}H_{60}N_2O_{10}S_2$ MW 708.97

25 mg $310 50 mg $540 100 mg $930 BACKORDERED