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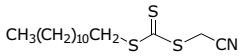
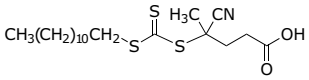
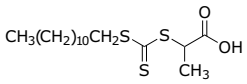
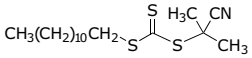
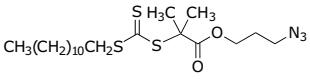
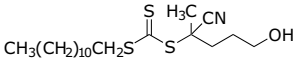
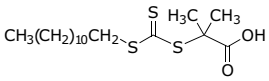
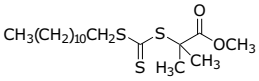
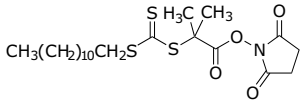
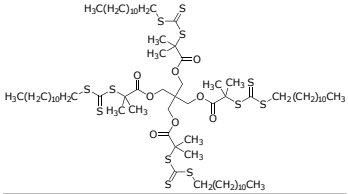
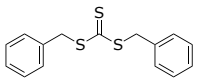
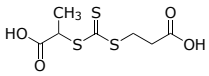
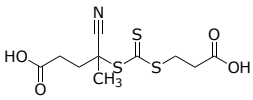
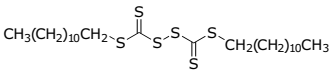
Lab & Production Materials

トリチオカルボナート
ジチオカルバマート
ジチオベンゾアート
切り替え可能なRAFT剤
マクロRAFT剤

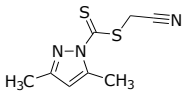
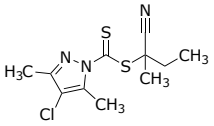
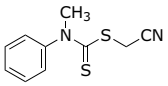
機能性高分子材料の精密重合を可能にする RAFT剤

トリチオカルボナート

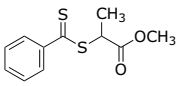
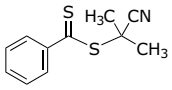
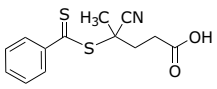
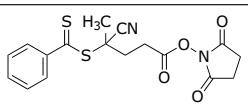
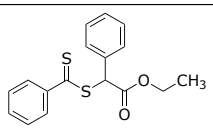
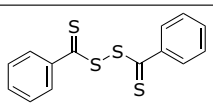
構造式	化合物名	適用可能なモノマー	カタログ番号	Ref.
	Cyanomethyl dodecyl trithiocarbonate, 98%	styrenes, acrylates, acrylamides	**723029-1G** **723029-5G**	1, 35-37 34(化合物171)
	4-Cyano-4-[(dodecylsulfanylthiocarbonyl) sulfanyl]pentanoic acid, 97%	methacrylates, methacrylamides, styrenes	**723274-1G** **723274-5G**	2, 14, 35-37, 41 34(化合物98)
	2-(Dodecylthiocarbonothioylthio)propionic acid, 97%	methacrylates, methacrylamides	**749133-1G** **749133-5G**	3, 4, 14, 37 34(化合物155)
	2-Cyano-2-propyl dodecyl trithiocarbonate, 97%	methacrylates, methacrylamides, styrenes	**723037-1G** **723037-5G**	5, 6, 35-37 34(化合物95)
	2-(Dodecylthiocarbonothioylthio)-2-methyl-propionic acid 3-azido-1-propanol ester, 98% アジド基は、様々なアルキン官能基化生体分子とのコンジュゲートに使用可能です。	styrenes, acrylates, acrylamides	**741698-1G** **741698-5G**	7, 37 34(化合物137)
	4-Cyano-4-[(dodecylsulfanylthiocarbonyl) sulfanyl]pentanol このアルコール官能基化RAFT剤は、標準的なカップリング反応や開環重合など、重合前および重合後に様々な官能基化を行うことができ、十分に制御されたブロック共重合体を得ることができます。	methacrylates, methacrylamides, styrenes	**760110-1G** **760110-5G**	8, 37
	2-(Dodecylthiocarbonothioylthio)-2-methylpropionic acid, 98%	styrenes, acrylates, acrylamides	**723010-1G** **723010-5G**	9, 36, 37, 41 34(化合物123)
	Methyl 2-(dodecylthiocarbonothioylthio)-2-methylpropionate, 97%	styrenes, acrylates, acrylamides	**740497-5G**	10, 37

構造式	化合物名	適用可能なモノマー	カタログ番号	Ref.
	2-(Dodecylthiocarbonothioylthio)-2-methylpropionic acid *N*-hydroxysuccinimide ester, 98% NHSエステル末端基は、様々な生体分子との結合に使用されます。	styrenes, acrylates, acrylamides	**741035-1G**	11, 37
	Pentaerythritol tetrakis[2-(dodecylthiocarbonothioylthio)-2-methylpropionate], 97%	styrenes, acrylates, acrylamides	**763551-1G**	47, 48
	*S,S*-Dibenzyl trithiocarbonate, 97%	styrenes, methacrylates, acrylamides	**746304-1G** **746304-5G**	12, 13, 49 34(化合物88)
	2-(2-Carboxyethylsulfanylthiocarbonylsulfanyl) propionic acid 水溶性かつ有機溶媒可溶性の両親媒性RAFT剤	acrylates, acrylamides, styrenes	**900152-1G**	15 34(化合物157)
	4-((((2-Carboxyethyl)thio)carbonothioyl)thio)-4-cyanopentanoic acid, 95% 水溶性かつ有機溶媒可溶性の両親媒性RAFT剤	acrylates, acrylamides, styrenes, methacrylates, methacrylamides	**900161-1G**	15
	Bis(dodecylsulfanylthiocarbonyl) disulfide, 95+% RAFT剤合成のための前駆体化合物		**723126-5G**	16, 35

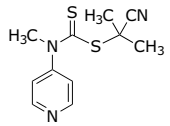
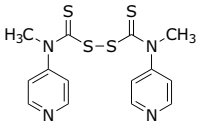
ジチオカルバマート

構造式	化合物名	適用可能なモノマー	カタログ番号	Ref.
	Cyanomethyl (3,5-Dimethyl-1*H*-pyrazole)-carbodithioate, 95% ピラゾール系RAFT剤は、有機溶媒に可溶であり、無臭です。電子的に全く異なる多様なモノマーのグループを使用した多機能性ポリマーの合成が可能です。	acrylates, acrylamides, styrenes	**900150-1G**	17, 18, 50
	2-Cyanobutan-2-yl 4-chloro-3,5-dimethyl-1*H*-pyrazole-1-carbodithioate, 95% 「多用途RAFT剤」と称され、全てのモノマーの重合を行うことができます。多分散度が重要な用途での使用が推奨されます。	acrylates, acrylamides, styrenes methacrylates, methacrylamides vinyl esters, vinyl amides	**900158-1G**	17, 18, 51
	Cyanomethyl methyl(phenyl) carbamodithioate, 98%	vinyl esters, vinyl amides	**723002-1G**	20, 21, 36-38 34(化合物258)

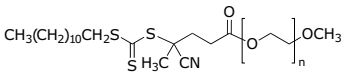
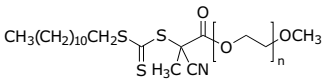
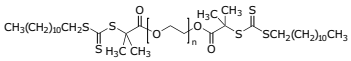
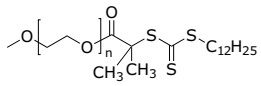
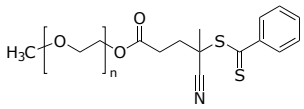
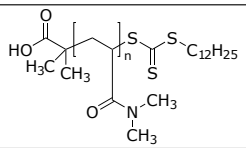
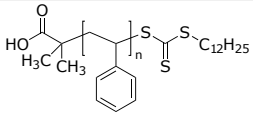
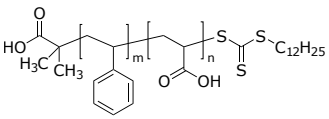
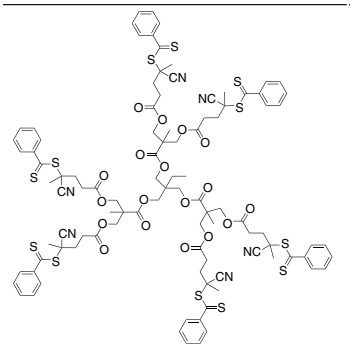
ジチオベンゾアート

構造式	化合物名	適用可能なモノマー	カタログ番号	Ref.
	1-(Methoxycarbonyl)ethyl benzodithioate, 97+%	methacrylates, methacrylamides	**751138-1G**	37, 52
	2-Cyano-2-propyl benzodithioate, >97%	methacrylates, methacrylamides	**722987-1G** **722987-5G**	19, 22, 23, 35-37 34(化合物12)
	4-Cyano-4-(phenylcarbonothioylthio) pentanoic acid	methacrylates, methacrylamides	**722995-1G** **722995-5G**	24, 25, 36, 37 34(化合物18)
	4-Cyano-4-(phenylcarbonothioylthio) pentanoic acid *N*-succinimidyl ester	methacrylates, methacrylamides	**758353-1G**	26-28, 37
	Ethyl 2-(phenylcarbonothioylthio)-2-phenylacetate, 98% メチルエステル体よりも高い温度安定性を示します。	methacrylates, methacrylamides	**773506-1G**	29, 30
	Bis(thiobenzoyl) disulfide, >95% RAFT剤合成のための前駆体化合物		**723118-5G**	16, 35

切り替え可能な/汎用（switchable/universal）RAFT剤

構造式	化合物名	適用可能なモノマー	カタログ番号	Ref.
	2-Cyanopropan-2-yl *N*-methyl-*N*-(pyridin-4-yl) carbamodithioate, 97%	脱プロトン化：vinyl esters, vinyl amides プロトン化：styrenes, acrylates, methacrylate	**736236-1G**	31, 39, 53, 54
	*N,N'*-Dimethyl *N,N'*-di(4-pyridinyl)thiuram disulfide 切り替え可能なRAFT剤合成用前駆体化合物		**735973-5G**	39, 54

マクロRAFT剤

構造式	化合物名	適用可能なモノマー	カタログ番号	Ref.
	Poly(ethylene glycol) methyl ether (4-cyano-4-pentanoate dodecyl trithiocarbonate), average Mn 5,400	methacrylates, methacrylamides, styrenes	**751626-1G**	37
	Poly(ethylene glycol) methyl ether 4-cyano-4-[(dodecylsulfanylthiocarbonyl)sulfanyl] pentanoate, average Mn 10,000	methacrylates, methacrylamides, styrenes	**753033-1G**	34（化合物132）
	Poly(ethylene glycol) bis[2-(dodecylthiocarbonothioylthio)-2-methylpropionate], average Mn 10,800	styrene, acrylate, acrylamide	**753025-1G**	37, 55
	Poly(ethylene glycol) methyl ether 2-(dodecylthiocarbonothioylthio)-2-methylpropionate, average Mn 6,000	styrene, acrylate, acrylamide	**736325-1G**	37, 44, 46, 55
	Poly(ethylene glycol) 4-cyano-4-(phenylcarbonothioylthio)pentanoate, average Mn 2,000	methacrylates, methacrylamides	**764914-1G**	45 34（化合物19）
	Poly(ethylene glycol) 4-cyano-4-(phenylcarbonothioylthio)pentanoate, average Mn 10,000		**764930-1G**	
	Poly(*N,N*-dimethylacrylamide), DDMAT terminated, average Mn 10,000, PDI ≦1.1 末端のDDMAT構造を用いて、バイオマテリアルやリソグラフィー用途で重要なブロック共重合体を作ることができます。	styrene, acrylate, acrylamide	**773638-1G**	42
	Polystyrene, DDMAT terminated, average Mn 5,000, PDI <1.1	styrene, acrylate, acrylamide	**772577-1G**	43
	Polystyrene-*block*-poly(acrylic acid), DDMAT terminated, PS:PAA 3,000:5,000, PDI ≦1.1 トリブロック共重合体の生成に使用可能なRAFT構造末端基を有しており、ライゲーションのための修飾も可能です。	styrene, acrylate, acrylamide	**776351-500MG**	40
	Bis-MPA-RAFT dendrimer, trimethylol propane core, generation 1 このデンドリマーには6つのRAFT構造末端基が含まれており、メタクリル系モノマーの制御されたラジカル重合により6本鎖のスターポリマーを合成することができます。	acrylate	**911550-250MG**	32, 33

References

1. Dual Stimuli-Responsive Self-Assembly Behavior of a Tailor-Made ABC-Type Amphiphilic Tri-Block Copolymer. Pal S, et al., *J. Polym. Sci.* **2020**, *58*, 843–851.
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