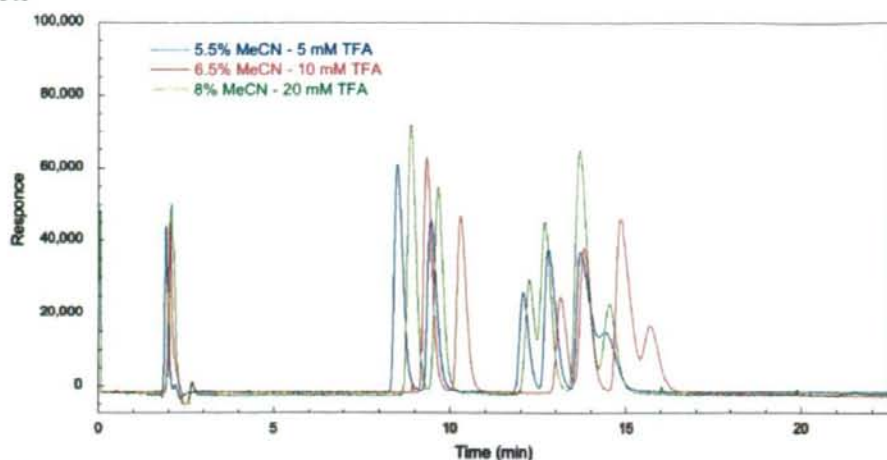
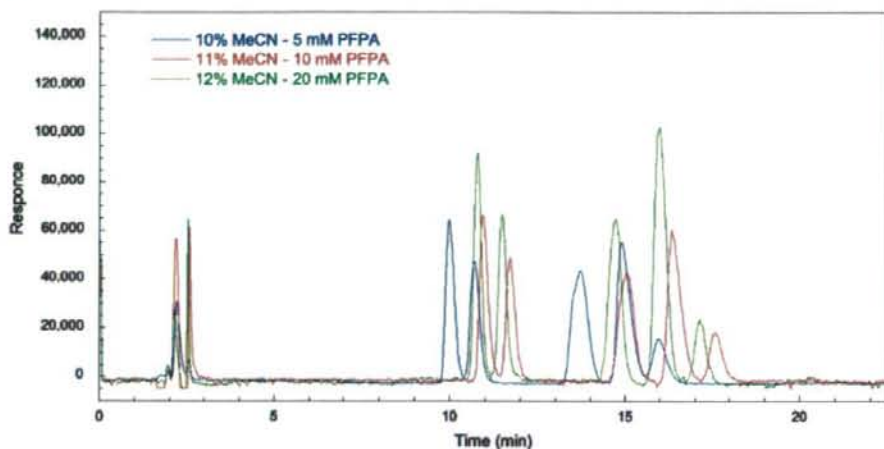


A) TFA



B) PFPA



C) HFBA

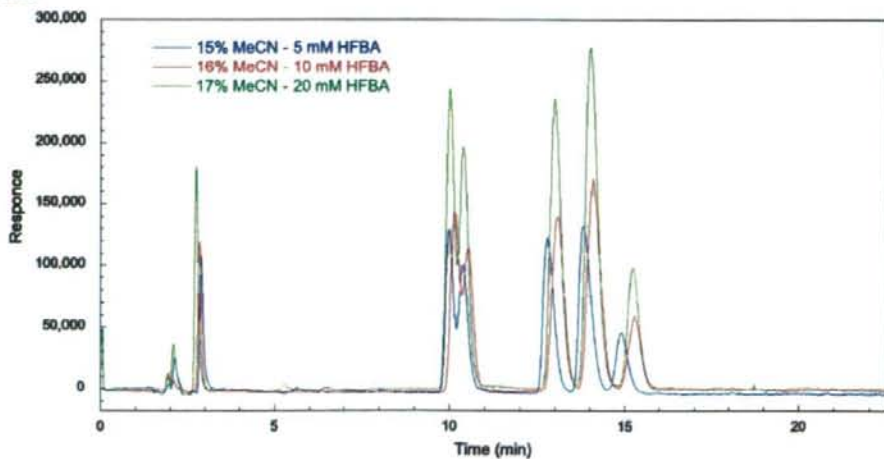


図2. 各種揮発性イオンペア試薬によるエフェドラアルカロイドの分離への影響

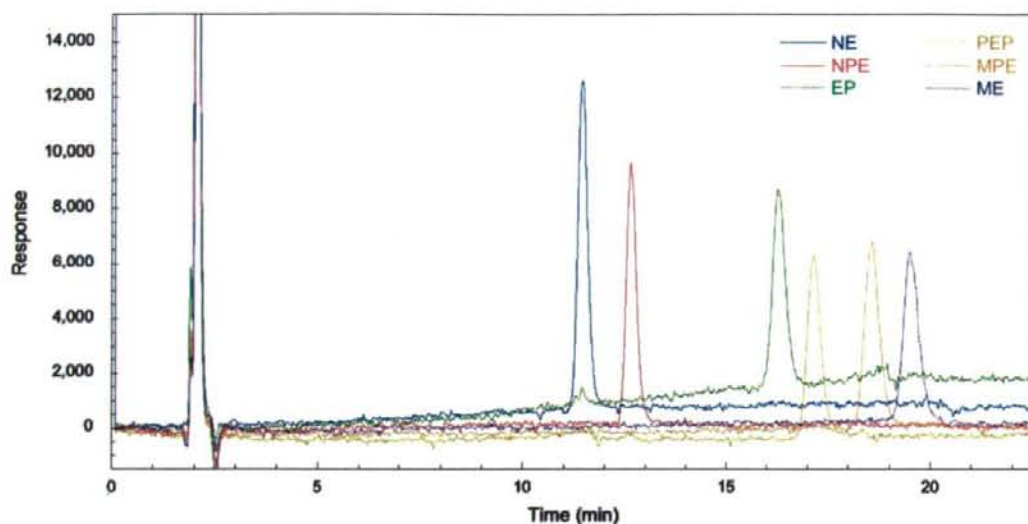


図 3. 最適化条件でのエフェドラアルカロイドの分離
 移動相: 15 mM TFA/MeCN (93:7)
 エフェドラアルカロイド: 各 167 pmol (25-30 ng)

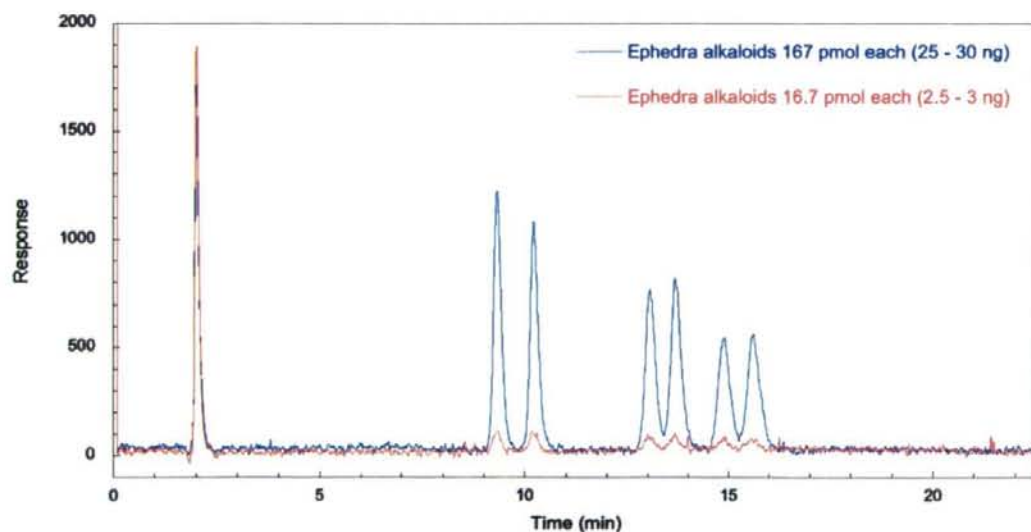


図 4. 簡易条件でのエフェドラアルカロイドの分離
 移動相: 0.1 % (ca. 13.3 mM) TFA/MeCN (93:7)

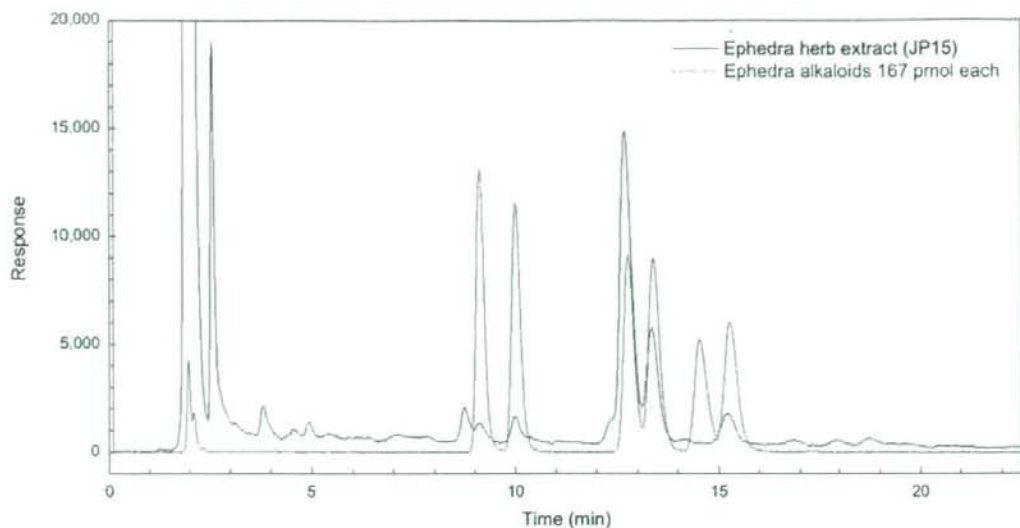
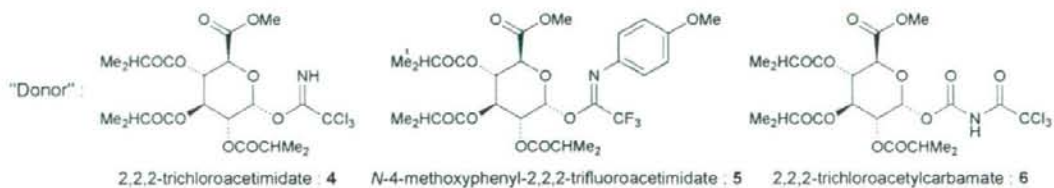
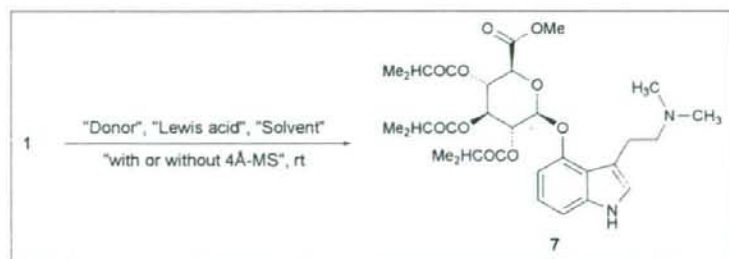


図 5. 簡易条件でのマオウ抽出物の分析
 移動相: 0.1% (ca. 13.3 mM) TFA/MeCN (93:7)



"Lewis acid": $\text{BF}_3 \cdot \text{OEt}_2$, TMS-OTf, SnCl_4 , AgOTf, $\text{Sc}(\text{OTf})_3$, $\text{Yb}(\text{OTf})_3$

"Solvent": CH_2Cl_2 , MeCN, THF, benzene, toluene, DMF, THF, 1,4-dioxane, ether, DME

図 6. シロシンのグリコシル化カップリング反応

表 1. グリコシル化カップリング反応の条件検討

Entry	Donor	Lewis acid	Solvent	4Å-MS	Yield (%)
1	4	BF ₃ ·OEt ₂	CH ₂ Cl ₂	with	25
2	4	TMS-OTf	CH ₂ Cl ₂	with	-
3	4	SnCl ₄	CH ₂ Cl ₂	with	12
4	5	BF ₃ ·OEt ₂	CH ₂ Cl ₂	with	28
5	5	TMS-OTf	CH ₂ Cl ₂	with	-
6	5	SnCl ₄	CH ₂ Cl ₂	with	-
7	6	BF ₃ ·OEt ₂	CH ₂ Cl ₂	with	-
8	6	TMS-OTf	CH ₂ Cl ₂	with	-
9	6	SnCl ₄	CH ₂ Cl ₂	with	-
10	4	BF ₃ ·OEt ₂	CH ₂ Cl ₂ /MeCN (1:1)	without	17
11	4	BF ₃ ·OEt ₂	benzene	without	21
12	4	BF ₃ ·OEt ₂	toluene	without	11
13	4	BF ₃ ·OEt ₂	ether	without	20
14	4	BF ₃ ·OEt ₂	1,4-dioxane	without	16
15	4	BF ₃ ·OEt ₂	THF	without	-
16	4	BF ₃ ·OEt ₂	DME	without	12
17	4	BF ₃ ·OEt ₂	MeCN	with	20
18	4	BF ₃ ·OEt ₂	MeCN	without	26
19	4	BF ₃ ·OEt ₂	CH ₂ Cl ₂	without	30
20	5	AgOTf	CH ₂ Cl ₂	with	-
21	5	Sc(OTf) ₃	CH ₂ Cl ₂	with	12
22	5	YbOTf	CH ₂ Cl ₂	with	-
23	6	YbOTf	MeCN	with	-

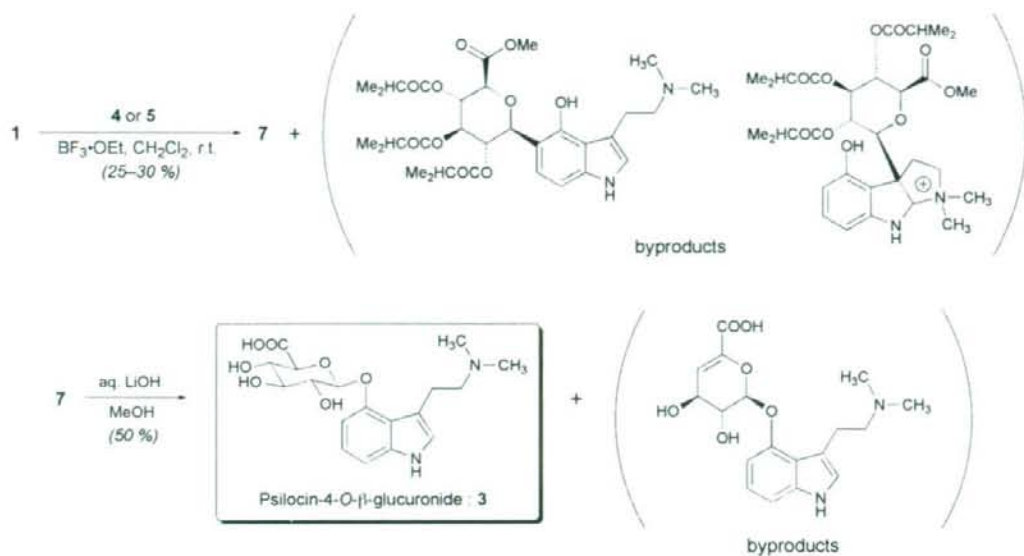


図 7. グリコシル化カップリング反応と保護基の脱保護

研究成果の刊行に関する一覧表

原著論文

発表者氏名	論文タイトル名	発表誌名	巻、号	ページ	出版年
Ogata, J. 他	Detection method for the ability of hemp (Cannabis sativa L.) seed germination by the use of 2,3,5-triphenyl-2H-tetrazolium chloride (TTC)	Yakugaku Zasshi	128(11)	1707-1711	2008
Matsumoto, T. 他	Evaluation of characteristic deuterium distributions of ephedrines and methamphetamines by NMR spectroscopy for drug profiling	Analytical Chemistry	80(4)	1176-1181	2008
Kawamura, M. 他	Survey of current trends in the abuse of psychotropic plants using LC-MS	Jpn. J. Food Chemistry	15(2)	73-78	2008
Shoda, T. 他	4-Hydroxy-3-Methoxymethamphetamine Glucuronide as a phase II Metabolite of 3,4-Methylenedioxyamphetamine: Enzyme-Assisted Synthesis and Involvement of Human Hepatic UGT2B15 in the Glucuronidation	Chem. Pharm. Bull.	57(5)	in press	2009
Kawamura, M. 他	Simple and rapid screening for psychotropic natural products using Direct Analysis in Real Time (DART) -TOFMS	Yakugaku Zasshi	129	accepted	2009

総説等

花尻瑠理	毛髪を中心とした代替生体試料中薬物分析	ぶんせき	2009(2)	76-81	2009
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