生理活性海洋天然物

筑波大学化学系

桶見武徳

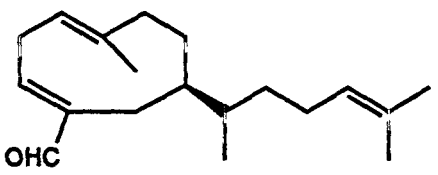
地球という惑星はその表面の 70%が海水で覆われている。海洋には陸上には見られない独特の生活様式を有する動物、植物が生息しており、これらの生物に関する研究は近年盛んに行なわれるようになった。特に海洋生物が生産する二次代謝産物についての科学的関心は、この十年間を見ると対数的に増加しつつある。この主な理由は、海洋生物から強い毒性、抗菌性、抗腫よう性などを有する重要な物質が続々と単離されつつあること、また、それらの化学構造がこれまで陸上生物から得られた二次代謝産物のものと著しく異なる新奇なものであることなどを挙げることが出来る。

我々はこの十数年に亙って海洋生物が生産する生理活性天然物の研究を行なってきたが、本講演においては、(1) 褐藻サナダグサが生産する抗腫よう性ジテルペン、(2) アメフラシから得られる抗腫よう性含ハロゲンモノテルペン、(3) 紅海産スポンジから得られる生理活性アルカロイドを中心とした話題を提供する。また、それらの構造決更における近代的 NMR 技法、さらに二級アルコールを有する化合物の絶対構造の NMR　的決定法についても言及する。

次ページ以下に講演に関係する化合物のリストを付けたので参考にしていただきたい。

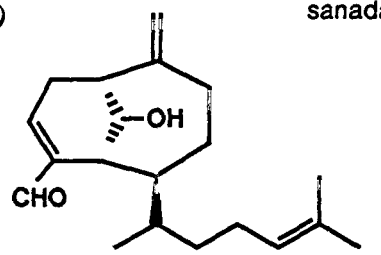
Compounds from *Pachydictyon coriaceum* (1)

A pachyaldehyde



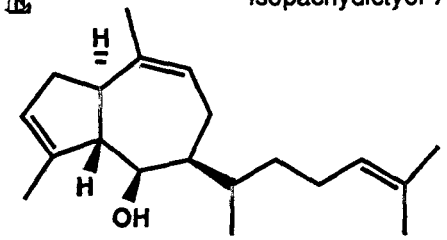
M Ishitsuka T Kusumi H Kakisawa Y.Nagai
Y Kawakami T Sato
J C S Chem Comm 906 (1984)

D sanadaol

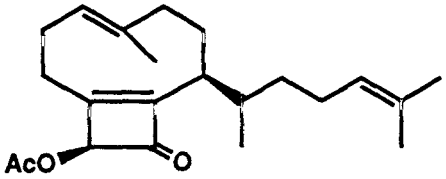


M.Ishitsuka, T Kusumi H Kakisawa,
Tetrahedron Lett. 23, 3179 (1982)

E isopachydictyol A

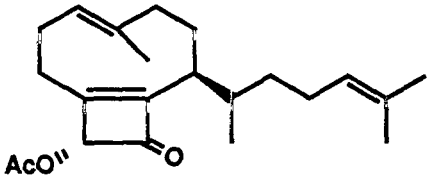


H_1 acetylcoriacenone



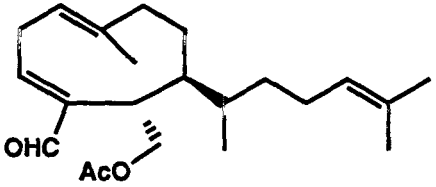
M Ishitsuka T Kusumi H.Kakisawa,
Y Kawakami Y Nagai T Sato
J Org Chem 48 1937 (1983)

H_2 isoacetylcoriacenone



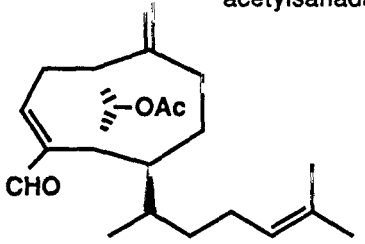
M Ishitsuka, T Kusumi H Kakisawa,
Y Kawakami Y.Nagai T Sato
J Org Chem 48 1937 (1983)

I acetyldictyolal



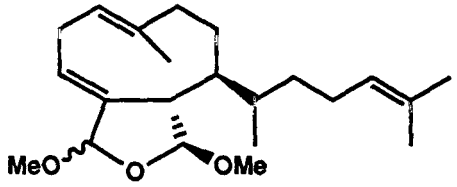
M Ishitsuka, T Kusumi J Tanaka, H.Kakisawa,
Chem Lett. 1517 (1982)

K acetylsanadaol



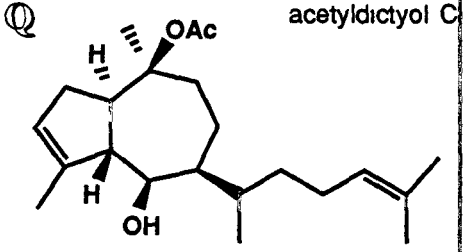
M Ishitsuka T Kusumi H Kakisawa
Tetrahedron Lett 23 3179 (1982)

N,O



M Ishitsuka T Kusumi J Tanaka H Kakisawa,
Chem Lett. 1517 (1982)

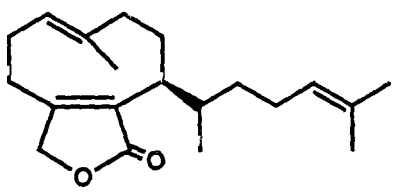
Q acetyldictyol C



M Ishitsuka T Kusumi J Tanaka, H Kakisawa
Chem Lett. 1517 (1982)

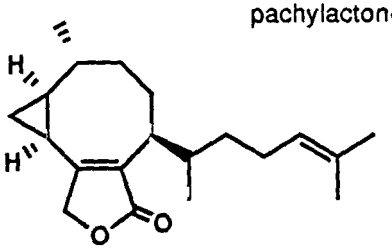
Compounds from *Pachydictyon coriaceum* (2)

R neodictyolactone



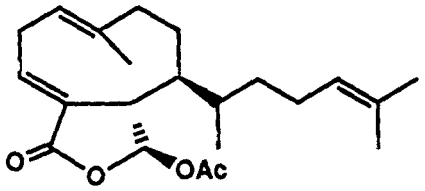
M.Ishitsuka, T Kusumi J Tanaka M Chihara
H Kakisawa,
Chem Lett. 151 (1984)

S pachylactone



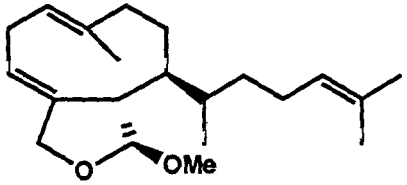
M Ishitsuka T Kusumi H Kakisawa
Y Kawakami Y.Nagai T Sato
Tetrahedron Lett. 24 5117 (1983)

U 18 acetoxydictyolactone



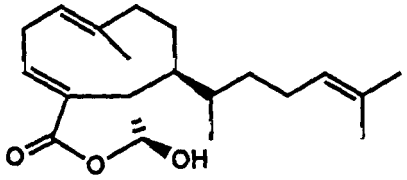
M Ishitsuka T.Kusumi J Tanaka, M.Chihara
H Kakisawa
Chem Lett. 151 (1984)

V isodictyoacetal

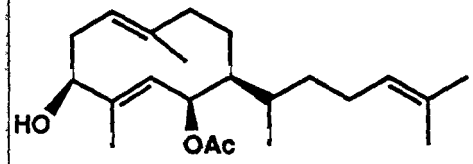


M Ishitsuka T Kusumi J Tanaka M Chihara
H Kakisawa
Chem Lett. 151 (1984)

W 18 hydroxydictyolactone

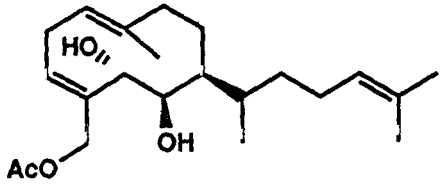


X 3 hydroxyacetyldilophol



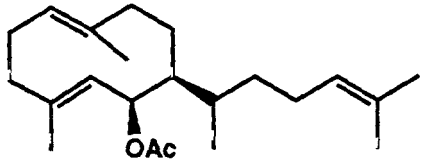
M.Ishitsuka, T Kusumi H.Kakisawa,
Y Kawakami Y.Nagai, T Sato
Tetrahedron Lett. 27 2639 (1986)

Y acetoxypachydiol



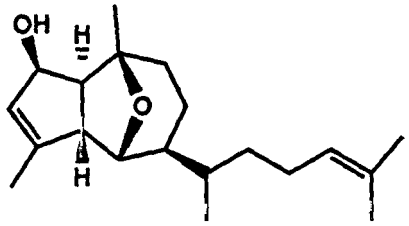
M Ishitsuka T Kusumi H Kakisawa
Y Kawakami Y Nagai T Sato
Tetrahedron Lett. 27 2639 (1986)

Z dilophol acetate



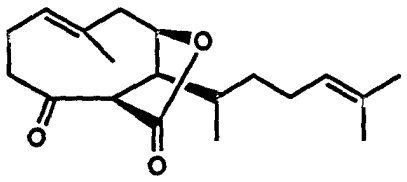
M Ishitsuka T Kusumi H Kakisawa
Y Kawakami Y Nagai T Sato
Tetrahedron Lett. 27 2639 (1986)

ℭ hydroxydictyoxide



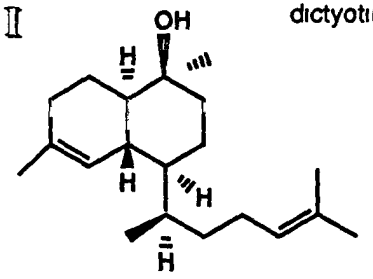
Compounds from *Dictyota dichotoma* (1)

I nordictyotalide

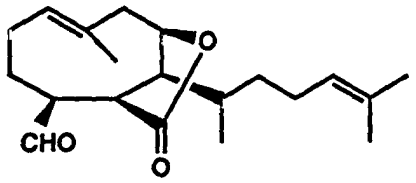


M O.Ishitsuka, T Kusumi H Kakisawa
J Org Chem 53 5010 (1988)

II dictyotin C

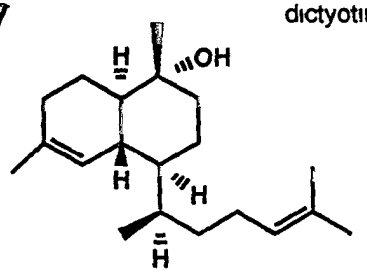


IV dictyotalide A

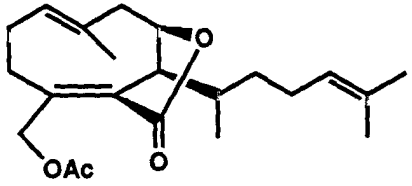


M O Ishitsuka, T Kusumi H.Kakisawa
J Org Chem 53, 5010 (1988)

V dictyotin B

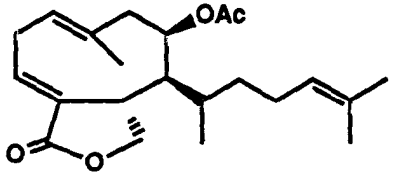


VI dictyotalide B



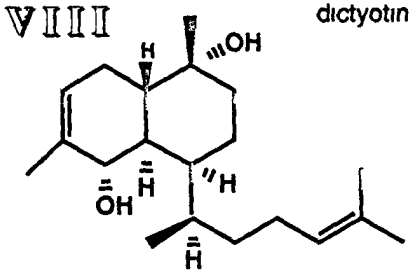
M O Ishitsuka T Kusumi H Kakisawa
J Org Chem 53, 5010 (1988)

VII 4-acetoxydictyolactone

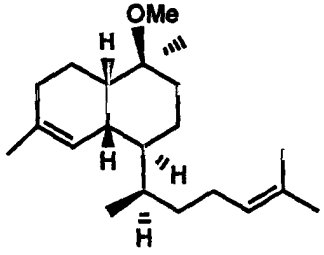


M O Ishitsuka, T.Kusumi H.Kakisawa
J Org Chem 53, 5010 (1988)

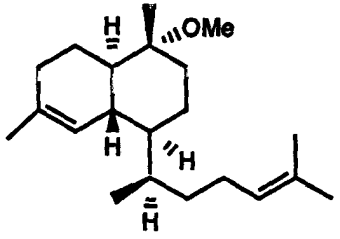
VIII dictyotin A



J dictyotin D methyl ether

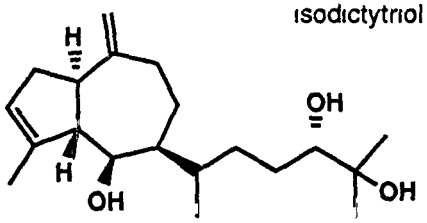


K dictyotin B methyl ether



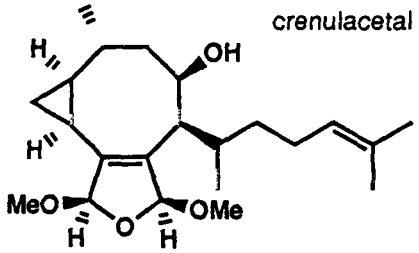
Compounds from *Dictyota dichotoma* (2)

isodictytriol



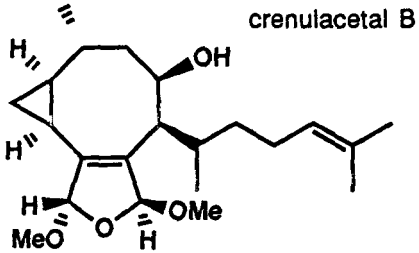
T Kusumi D M.Nkongolo M.Ishitsuka
Y Inouye H Kakisawa
Chem Lett. 1241 (1986)

crenulacetal A



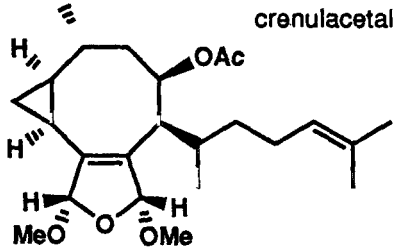
T.Kusumi D M.Nkongolo M Goya, M Ishitsuka,
T Iwashita, H Kakisawa
J Org Chem 51, 384 (1986)

crenulacetal B



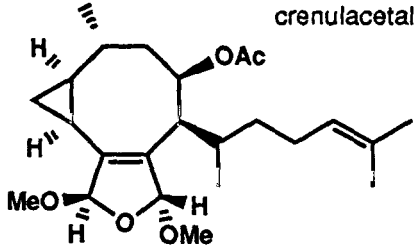
T Kusumi D M.Nkongolo M.Goya M.Ishitsuka
T Iwashita H.Kakisawa,
J Org Chem., 51 384 (1986)

crenulacetal C

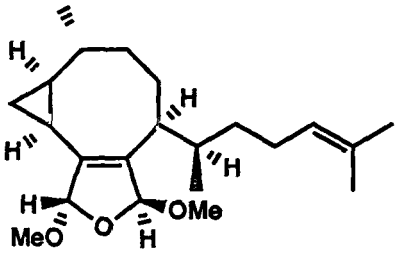


T Kusumi D M Nkongolo M Goya M Ishitsuka
T Iwashita, H Kakisawa
J Org Chem 51, 384 (1986)

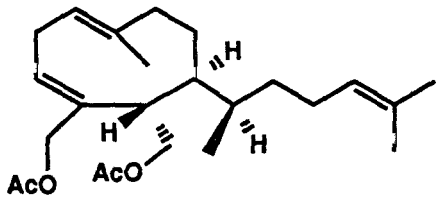
crenulacetal D



T Kusumi D M Nkongolo M Goya, M.Ishitsuka
T Iwashita, H Kakisawa,
J Org Chem. 51 384 (1986)



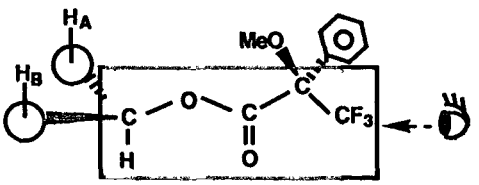
M O Ishiysuka, A Ichikawa, T Kusumi H Kakisawa
J Org Chem in press (1986)



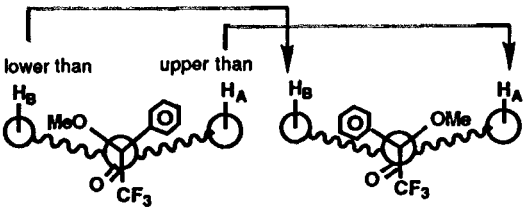
M O Ishiysuka, A Ichikawa T Kusumi H Kakisaw
J Org Chem in press (1986)

ABSOLUTE CONFIGURATIONS OF MARINE DITERPENES POSSESSING A XENICANE SKELETON AN APPLICATION OF AN ADVANCED MOSHER S METHOD

I Ohtani T Kusumi M O Ishitsuka H Kakisawa *Tetra Lett* *24* 1989 3147

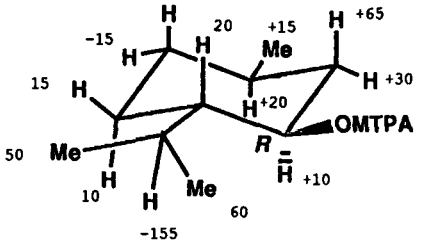


(*R*) MTPA ester

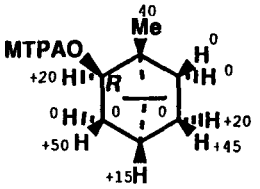


(*R*)-MTPA ester (*S*) MTPA ester

Figure 1



1



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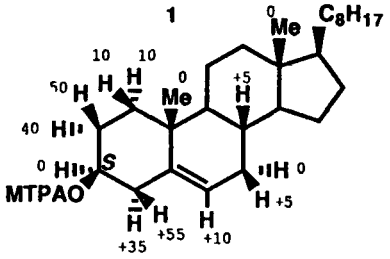

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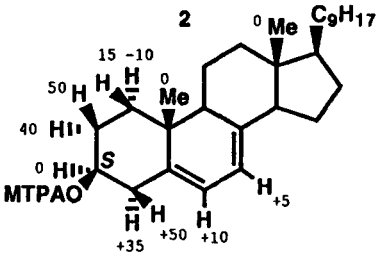

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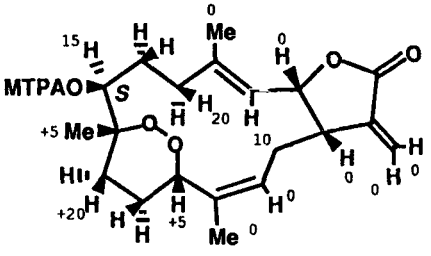

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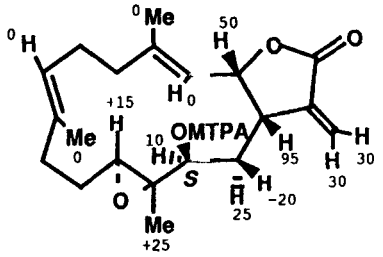

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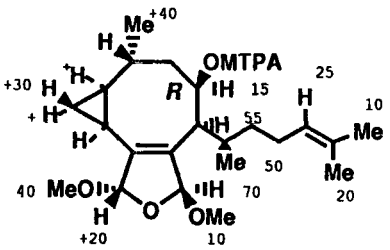

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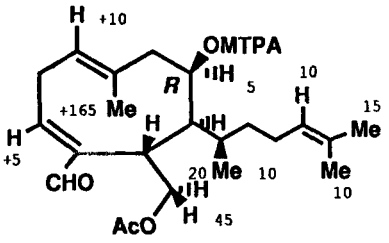
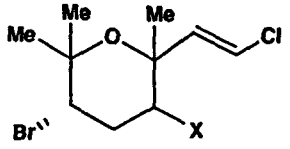


8

T Kusumi H Uchida Y Inouye M Ishitsuka H Yamamoto
H Kakisawa *J Org Chem*, *87* 1987 4597



X=β-Br, α-chlorovinyl
X=β-Br, β-chlorovinyl
X=α-Cl, α-chlorovinyl
X=α-Cl, β chlorovinyl

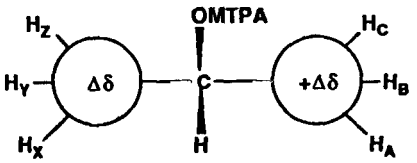
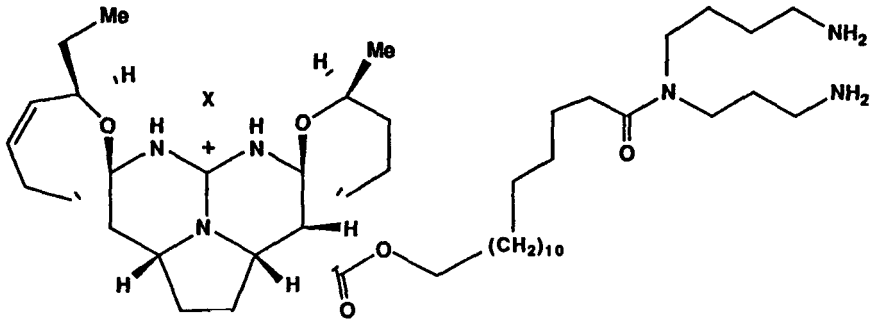
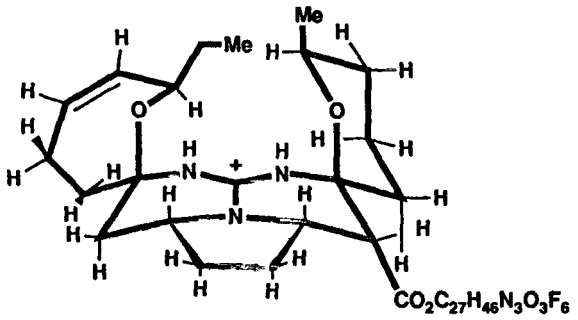


Figure 2 Model A



Stereochemical Feature of Ptilomycalin A



Biological Activity of Ptilomycalin A

Cytoxicity (P388)	0 1 μg/mL	(IC_{50})
(L1210)	0 4	
(KB)	1 3	
Antifungal (*Candida albicans*)	0 8	(MIC)
Antiviral (HSV)	0 2	

Y Kashman S Hirsh I Ohtani T Kusumi H Kakisawa
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