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Overview

Steps/Stages

1.1 $\text{R}_2\text{H}_2\text{SO}_4$, $\text{S}_2\text{C}_4\text{N}$, 0°C → 60°C

Notes

Reactants: 2, Reagents: 1, Solvents: 1, Steps: 1, Stages: 1, Most stages in one step: 1

References

Synthesis and molecular docking based exploration of salicylic acid derivatives
 & Quick View: Other Sources
 By Singh, Namrata and Garg, Gneela
 From *Asian Journal of Chemistry*, 2013(1), 2277-2382, 2018

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Procedure

1. Add 2-hydroxybenzoic acid (0.01 mol) in 100 mL beaker follow with addition of 2 mL of pyridine.
2. Keep the mixture on ice bath.

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Document Type

Experimental Procedure

Journal Name

Language

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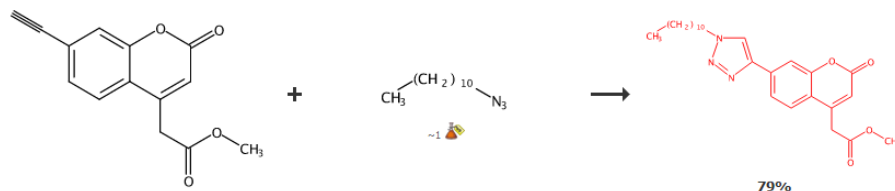
Number of Steps

Product Yield

Publication Year

Reagent

Solvent



Overview

Steps/Stages

1:1 R:Et₃N, C:Na ascorbate, C:CuSO₄, S:H₂O, S:t-BuOH, 4 h, rt

Notes

Huisgen [3+2] cycloaddition reaction, regioselective, Reactants: 2, Reagents: 1, Catalysts: 2, Solvents: 2, Steps: 1, Stages: 1, Most stages in any one step: 1

References

7-Triazolylcoumarin-based fluorescent tag system for stepwise, comparative assessment of small molecule microarrays

[Quick View](#) [Other Sources](#)
By Jeon, Moon-Kook et al

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Procedure

1. Stir the mixture of 7-ethynyl-4-methoxycarbonylmethyl-2H-chromen-2-one (400 mg, 1.65 mmol), 1-azidoundecane (358 mg, 1.82 mmol), copper(II) sulfate pentahydrate (42 mg, 0.17 mmol), (+)-sodium L-ascorbate (360 mg, 1.82 mmol) in t-BuOH/water (15 mL/15 mL) at room temperature for 4 hours.
2. Add water to the mixture.

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Available Experimental Data

¹H NMR, ¹³C NMR, IR, HRMS, Mass Spec, MP

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Overview Steps/Stages

1.1 RiEt_3N , CtNa ascorbate, CtCuSO_4 , SiH_4O , St^+BuOH , 4 h, rt

Notes

Huisgen [3+2] cycloaddition reaction, regioselective, Reactants: 2; Reagents: 1; Catalysts: 2; Solvents: 2; Steps: 1; Stages: 1; Most stages in any one step: 1

References

7-Triazolylcoumarin-based fluorescent tag system for stepwise, comparative assessment of small molecule microarrays
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By Jeon, Moon-Kook et al.
From Tetrahedron, 68(30), 6038-6053; 2012

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Procedure

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2. Add water to the mixture.

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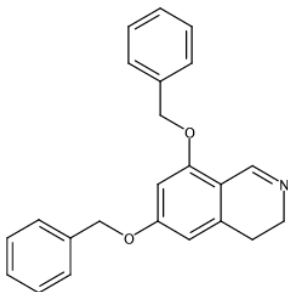
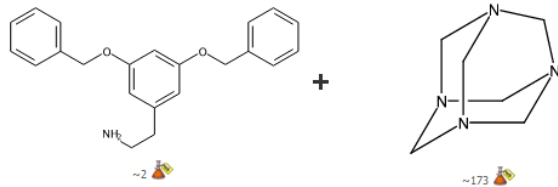
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Asymmetric formal synthesis of schulzeines A and C

By Jang, Jaebong; Jung, Jong-Wha; Ahn, Jaeseung; Sim, Jaehoon; Chang, Dong-Jo; Kim, Dae-Duk; Suh, Young-Gook
From Organic & Biomolecular Chemistry, 10(27), 5202-5204; 2012
Published by Royal Society of Chemistry

Reaction Steps 1 2 3 4 5 6 7 8 9 10 11

多步反应



Products	Isoquinoline, 3,4-dihydro-6,8-bis(phenylmethoxy)-, 95%, CAS RN: 1384461-35-1
Reactants	Benzeneethanamine, 3,5-bis(phenylmethoxy)-, CAS RN: 188662-05-7 Hexamethylenetetramine, CAS RN: 100-97-0
Solvents	Trifluoroacetic acid, CAS RN: 76-05-1 Acetic acid, CAS RN: 64-19-7
Procedure	1. Add hexamethylenetetramine (3.1 g, 22.1 mmol) to the mixture of 2-(3,5-bis(benzyloxy)phenyl)ethylamine (2.0 g, 11.0 mmol), AcOH (12 mL) and TFA (3 mL) under argon 2. Stir the mixture for 3 hours at 90°C. 3. Dilute the reaction mixture with H₂O. 4. Basify with potassium carbonate and extract with CH₂Cl₂. 5. Wash the combined organic layers with brine. 6. Dry over MgSO₄ and concentrate in vacuo. 7. Purify the residue by column chromatography on silica gel (5 to 10% EtOAc in hexane) to obtain 6,8-bis(benzyloxy)-3,4-dihydroisoquinoline.
Scale	gram
¹ H NMR	(CDCl ₃ , 400 MHz) δ 8.69 (s, 1H), 7.43 - 7.29 (m, 10H), 6.45 (d, <i>J</i> = 1.88 Hz, 2H), 6.36 (s, 1H), 5.05 (s, 2H), 5.04 (s, 2H), 3.67 (t, 2H), 2.65 (t, 2H)
¹³ C NMR	(CDCl ₃ , 100 MHz) δ 161.9, 157.7, 155.2, 140.0, 136.3, 128.6, 128.5, 128.1, 128.0, 127.4, 127.1, 111.9, 105.3, 98.5, 70.1, 46.5, 26.0
IR	(thin film, neat) $\nu_{\max}$ 3062, 3032, 2935, 1736, 1620, 1603, 1575, 1497, 1442, 1377, 1351, 1309 cm ⁻¹
HRMS	(FAB+) calcd for C ₂₃ H ₂₂ NO ₂ (M+H ⁺) 344.1651; found 344.1658
Mass Spec	(FAB+) <i>m/z</i> 344 (M+H ⁺)
State	yellow solid
CAS Method Number	3-614-CAS-200055

物质信息

实验过程

图谱信息

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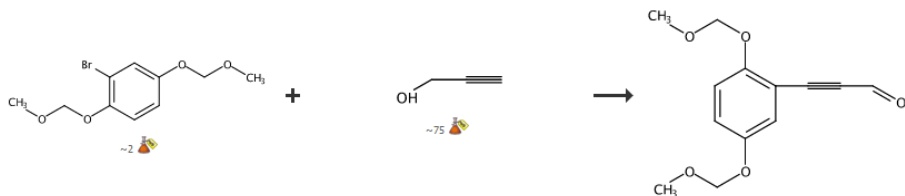
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2 Steps Hover over any structure for more options.



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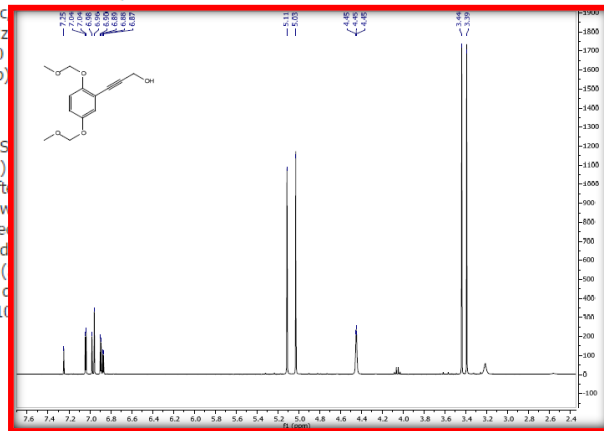
NATURAL
PRODUCTS

Step 1

General Procedure for the Sonogashira Coupling.^{8,10,11} Compounds **6a**³¹ and **16**⁸ were synthesized according to literature procedures. Aryl halide **6a** or **16** (9.21 mmol) in n-butylamine (6.4 mL) was placed in a flame-dried round-bottomed flask under an argon atmosphere. A mixture of terminal alkynes **7**, **25**, **26**, or **27** (9.21 mmol) in n-butylamine (10 mL) and Pd(PPh₃)₄ (5% or 3%) was added, with the optional addition of CuI (3%) where appropriate. The mixture was heated for 21 h at 98 °C and poured into H₂O (80 mL). The product was extracted with EtOAc (3 × 80 mL). The combined organic layers were washed with brine, dried over anhydrous Na₂SO₄, and evaporated under reduced pressure. The crude product was purified by silica gel column chromatography (EtOAc) to give **8** (2,5-bis(methoxymethoxy)phenyl)prop-2-yn-1-ol (**8**). Yield 96%; colorless oil. IR (KBr) ν_{max} 3310, 2230 cm⁻¹; ¹H NMR (CDCl₃, 400 MHz) δ 3.51 (3H, s, H-1b), 4.51 (2H, s, H-1a), 5.09 (2H, s, H-4a), 5.17 (2H, s, H-1a), 6.95 (1H, dd, *J* = 9 and 3.0 Hz, H-5), 7.03 (1H, d, *J* = 9.0, 3.0 Hz, H-3); ¹³C NMR (CDCl₃, 100 MHz) δ 51.81 (C-9), 56.05 (C-4b), 56.38 (C-1b), 81.74 (C-7), 91.56 (C-8), 95.14 (C-4a), 95.88 (C-4b), 118.50 (C-3), 121.20 (C-6), 151.95 (C-4), 153.06 (C-1); HRESIMS *m/z* 275.0900 [M + Na]⁺ (calcd for C₁₃H₁₆O₅ 275.0896).

Step 2

Generation of the Key Aldehyde.¹⁷ Oxalyl chloride (272.3 μ L, 3.12 mmol) in dry CH₂Cl₂ (9 mL) was added to a stirred solution of DMSO (1.56 mmol) in dry CH₂Cl₂ (1.5 mL) under an argon atmosphere at -78 °C. The mixture was stirred for 15 min, and the alcohol **8** (393.5 mg, 1.56 mmol) in dry CH₂Cl₂ (12 mL) was added dropwise (Note: Swern oxidation could be scaled-up to 1.56 mmol of starting material). After being consumed (nearly 2 h), Et₃N (1.88 mL, 7.8 mmol) was added. The reaction mixture was stirred at -78 °C for a further 30 min and quenched with saturated NH₄Cl and H₂O, and the mixture was stirred for 30 min. The organic phase was decanted off, and the aqueous phase was extracted with CH₂Cl₂ (3 × 30 mL). The combined organic layers were washed with brine, dried over anhydrous Na₂SO₄, and evaporated under reduced pressure to give **9** (2,5-bis(methoxymethoxy)phenyl)prop-2-ynal (**9**). Yield 91%; colorless oil. IR (KBr) ν_{max} 1660, 2194 cm⁻¹; ¹H NMR (CDCl₃, 400 MHz) δ 3.46 (3H, s, H-1b), 5.10 (2H, s, H-4a), 5.21 (2H, s, H-1a), 7.09 (1H, dd, *J* = 9.2 and 1.2 Hz, H-6), 7.12 (1H, dd, *J* = 9.1 and 2.2 Hz, H-5), 7.22 (1H, d, *J* = 9.1, 3.0 Hz, H-3); ¹³C NMR (CDCl₃, 100 MHz) δ 56.18 (C-4b), 56.54 (C-1b), 92.05 (C-8), 92.27 (C-7), 95.22 (C-4a), 95.58 (C-1a), 110.12 (C-5), 122.09 (C-3), 151.85 (C-4), 154.88 (C-1), 176.92 (C-9); HRESIMS *m/z* 273.0741 [M + Na]⁺ (calcd for C₁₃H₁₄O₅ 273.0739).



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Reaction Steps 1 2

Products 2-Propyn-1-ol, 3-[2,5-bis(methoxymethoxy)phenyl]-, 96%, CAS RN: 1214266-55-3

Reactants Propargyl alcohol, CAS RN: 107-19-7
Benzene, 2-bromo-1,4-bis(methoxymethoxy)-, CAS RN: 131136-47-5

化合物7

化合物16

更好的阅读体验!

Catalysts	Tetrakis(triphenylphosphine)palladium, CAS RN: 14221-01-3
Solvents	Butylamine, CAS RN: 109-73-9
Procedure	1. Place aryl halide (9.21 mmol) in n-butylamine (6.4 mL) was placed in a flame-dried round-bottomed flask under an argon atmosphere. 2. Add a mixture of propargyl alcohol (9.21 mmol) in n-butylamine (10 mL) and add Pd(PPh₃)₄ (5% or 3%). 3. Heat the mixture for 21 h at 98 °C and pour into H₂O (80 mL). 4. Extract the product with EtOAc (3 × 80 mL). 5. Wash the combined organic layers with brine, dry over anhydrous Na₂SO₄, and evaporate under reduced pressure. 6. Purify the crude product by silica gel column chromatography (EtOAc/hexanes, 10-50%).
Scale	milligram
¹H NMR	(CDCl ₃ , 400 MHz) δ 3.46 (3H, s, H-4b), 3.51 (3H, s, H-1b), 4.51 (2H, s, H-1a), 5.09 (2H, s, H-4a), 5.17 (2H, s, H-1a), 6.95 (1H, dd, J = 9 and 3.0 Hz, H-5), 7.03 (1H, d, J = 9.0 Hz, H-6), 7.10 (1H, d, J = 3.0 Hz, H-3)
¹³C NMR	(CDCl ₃ , 100 MHz) δ 51.81 (C-9), 56.05 (C-4b), 56.38 (C-1b), 81.74 (C-7), 91.56 (C-8), 95.14 (C-4a), 95.88 (C-4b), 114.19 (C-2), 117.13 (C-5), 118.50 (C-3), 121.20 (C-6), 151.95 (C-4), 153.06 (C-1)
IR	(KBr) ν _{max} 3310, 2230 cm ⁻¹
HRMS	m/z 275.0900 [M + Na] ⁺ (calcd for C ₁₃ H ₁₆ O ₅ 275.0896)
State	colorless oil
CAS Method Number	3-180-CAS-357629

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Guaijaverin 

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- ☐ Guaijaverin (161)
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- ☐ Quercetin 3-glucoside (76)
- ☐ Hyperoside (72)
- ☐ Avicularin (68)

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- ☐ Leaf (135)
- ☐ *Psidium guajava* (46)
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- ☐ Natural Product Isolation Analysis (173)
- ☐ Antioxidant Assay (61)
- ☐ Bioassay (46)
- ☐ Active Pharmaceutical Ingredient and Metabolite Analysis (21)
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- ☐ Solvent extraction (94)
- ☐ UV-visible spectroscopy (50)
- ☐ Adsorption liquid



Analysis of 3-[(2-O- α -L-Arabinopyranosyl-6-deoxy- α -L-mannopyranosyl)oxy]-2-[(3,4-dihydroxyphenyl)-5,7-dihydroxy-4H-1-benzopyran-4-one in *Kalanchoe pinnata* by UV-visible spectroscopy

CAS MN: 1-131-CAS-168528

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Analyte **Guaijaverin**; Kapinnatoside; 3-[(2-O- α -L-Arabinopyranosyl-6-deoxy- α -L-mannopyranosyl)oxy]-2-(3,4-dihydroxyphenyl)-5,7-dihydroxy-4H-1-benzopyran-4-one

Matrix *Kalanchoe pinnata*; Leaf

Other Materials Reagent: Water; Ethanol; Polyoxyethylene sorbitan monooleate; Sodium hypochlorite; Nicotinic acid; Sucrose; Vitamin B₁; Pyridoxine

Material: RP-18 reverse-phase column (5 μ m, 250 mm, 4.60 mm)
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Method Category	Natural Product Isolation Analysis
Extraction Techniques	- Macroporous Resin Adsorption - Supercritical Fluid Extraction - Ultrasound-Assisted Extraction - Enzyme-Assisted Extraction - Membrane Separation
Purification Methods	- Column Chromatography - Thin-Layer Chromatography - Preparative HPLC - Recrystallization - Distillation
Identification Techniques	- Mass Spectrometry - NMR Spectroscopy - IR Spectroscopy - UV-Vis Spectroscopy - Elemental Analysis
Structural Elucidation	- Chemical Synthesis - Biogenetic Amelioration - Chemical Modification - Fragmentation Analysis - Isomer Separation

Technique UV-visible spectroscopy; Reversed-phase HPLC; Solvent extraction

Equipment Used	HPLC instrument; Diode array detector
----------------	---------------------------------------

Source Influence of cultivation conditions, season of collection and extraction method on the content of antileishmanial flavonoids from *Kalanchoe pinnata*

Muzitano, Michelle F.; Bergonzi, Maria Camilla; De Melo, Gianly O.; Lage, Celso L. S.; Bilia, Anna Rita; Vincieri, Franco F.; Rossi-Bergmann, Bartira; Costa, Sonia S.

Journal of Ethnopharmacology (2011), 133 (1), 132-137. Elsevier Ireland Ltd.

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Abstract 

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☐ Gallic acid (20)

☐ Quercetin (20)

☐ Quercetin 3-glucoside (20)

☐ Avicularin (16)

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^ **Matrix**

☒ Leaf (25)

☐ Psidium guajava (15)

☐ Mangifera indica (5)

☐ Kalanchoe pinnata (2)

☐ Acer tegmentosum (1)

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^ **Method Category**

☒ Natural Product Isolation Analysis (25)

☐ Antioxidant Assay (2)

☐ Suboptimal Analysis (2)

^ **Technique**

☒ Reversed-phase HPLC (25)

☐ Solvent extraction (17)

☐ Enzymic hydrolysis (12)

Results (25) Sort Relevance ▾

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☐ **Analysis of 3-[(2-O- α -L-Arabinopyranosyl-6-deoxy- α -L-mannopyranosyl)oxy]-2-(3,4-dihydroxyphenyl)-5,7-dihydroxy-4H-1-benzopyran-4-one in *Kalanchoe pinnata* by UV-visible spectroscopy**

CAS MN: 1-131-CAS-168528

Analyte	Guaijaverin ; Kapinnatoside; 3-[(2-O- α -L-Arabinopyranosyl-6-deoxy- α -L-mannopyranosyl)oxy]-2-(3,4-dihydroxyphenyl)-5,7-dihydroxy-4H-1-benzopyran-4-one
Matrix	Kalanchoe pinnata; Leaf
Other Materials	Reagent: Water; Ethanol; Polyoxyethylene sorbitan monooleate; Sodium hypochlorite; Nicotinic acid; Sucrose; Vitamin B ₁ ; Pyridoxine Material: RP-18 reverse-phase column (5 μ m, 250 mm, 4.60 mm) View All ▾
Method Category	Natural Product Isolation Analysis
Technique	UV-visible spectroscopy; Reversed-phase HPLC; Solvent extraction
Equipment Used	HPLC instrument; Diode array detector
Source	Influence of cultivation conditions, season of collection and extraction method on the content of antileishmanial flavonoids from <i>Kalanchoe pinnata</i> Muzitano, Michelle F.; Bergonzi, Maria Camilla; De Melo, Gianly O.; Lage, Celso L. S.; Bilia, Anna Rita; Vincieri, Franco F.; Rossi-Bergmann, Bartira; Costa, Sonia S.





Analysis of 3-[(2-*O*- α -L-Arabinopyranosyl-6-deoxy- α -L-mannopyranosyl)oxy]-2-(3,4-dihydroxyphenyl)-5,7-dihydroxy-4*H*-1-benzopyran-4-one in *Kalanchoe pinnata* by UV-visible spectroscopy

CAS MN: 1-131-CAS-168528

Method Category: Natural Product Isolation Analysis

Technique: UV-visible spectroscopy; Reversed-phase HPLC; Solvent extraction

Materials	Role	Image	CAS RN
Guajaverin	analyte	View Structure	22255-13-6
Kapinnatocide	analyte	View Structure	912850-90-9
3-[(2- <i>O</i> - α -L-Arabinopyranosyl-6-deoxy- α -L-mannopyranosyl)oxy]-2-(3,4-dihydroxyphenyl)-5,7-dihydroxy-4 <i>H</i> -1-benzopyran-4-one	analyte	View Structure	104683-55-8
<i>Kalanchoe pinnata</i>	matrix		
Leaf	matrix		
RP-18 reverse-phase column (5 μ m, 250 mm, 4.60 mm)	material		
Water	reagent	View Structure	7732-18-5
Ethanol	reagent	View Structure	64-17-5
Polyoxyethylene sorbitan monooleate	reagent		9005-65-6
Sodium hypochlorite	reagent	View Structure	7681-52-9
Nicotinic acid	reagent	View Structure	59-67-6
Sucrose	reagent	View Structure	57-50-1
Vitamin B ₁	reagent	View Structure	59-43-8
Pyridoxine	reagent	View Structure	65-23-6

Source

Influence of cultivation conditions, season of collection and extraction method on the content of antileishmanial flavonoids from *Kalanchoe pinnata*

Muzitano, Michelle F.; Bergonzi, Maria Camilla; De Melo, Glany O.; Lage, Celso L. S.; Bilia, Anna Rita; Vincieri, Franco F.; Rossi-Bergmann, Birtira; Costa, Sonia S.

Journal of Ethnopharmacology (2011), 133 (1), 132 - 137. Elsevier Ireland Ltd.

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方法分类、技术、所用材料/物质、
角色、文献来源.....

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Abstract ^

Leaves from *Kalanchoe pinnata* (Lamarck) Persoon (Crassulaceae) are popularly used for healing wounds. Its antileishmanial properties are established in exptl. animals, and its active flavonoid components have been identified. In this study, we attempted to standardize the extract from *K. pinnata* leaves by evaluating the influence of season of harvest, sunlight exposure and method of extraction on antileishmanial flavonoids content. HPLC-DAD-MS was used to identify and quantify the active antileishmanial flavonoids in different extracts ANOVA test for analyses of variance followed by the Tukey test of multiple comparisons were used in the statistical anal. The antileishmanial potential was assessed by the activation of nitric oxide production by murine macrophage using the Griess method. We demonstrated that active flavonoids were significantly more abundant when the leaves were collected in the summer, and that aqueous extraction at 50° allowed the highest flavonoid extraction The benefit of sunlight exposure was confirmed in plants cultivated under direct sunlight when compared with those that grown under shade. Under sunny conditions the yield of the most active antileishmanial flavonoid quercitrin was increased by 7-fold. All aqueous extracts tested were capable to enhance the macrophage nitric oxide production However, hot aqueous extract from leaves collected in summer exhibited the higher activity, in agreement with HPLC-DAD-MS anal. tendency. In addition, with the aim of reducing the individual chem. variations of the plant constituents and optimizing the production of the active extract, it was obtained in vitro monoclonal KP specimens that were easily adapted to field conditions and were able to produce antileishmanial flavonoids. Our study reports the better conditions of cultivation, harvest and extraction protocol for obtaining a *K. pinnata* extract exhibiting the highest antileishmanial activity. Addnl., we propose the flavonoids quercetin 3-O- α -L-arabinopyranosyl (1 $\rightarrow$ 2)- α -L-rhamnopyranoside and quercitrin, as satisfactory chem. markers for standardization purposes.

Equipment Used

HPLC instrument, HP 1100L, Hewlett Packard, Palo Alto, CA, USA

Diode array detector, Hewlett Packard

Conditions

Instrument

Column: RP-18 reverse-phase column (5 μ m, 250 mm, 4.60 mm, Luna); mobile phase: (A): H₂O adjusted to pH 3.2 by HCOOH and (B): CH₃CN; gradient elution: from H₂O (pH 3.2) - CH₃CN (10:0) to H₂O (pH 3.2) - CH₃CN (8:2) within 10 min; from H₂O (pH 3.2) - CH₃CN (8:2) to H₂O (pH 3.2) - CH₃CN (7.8:2.2) within 10 min; from H₂O (pH 3.2) - CH₃CN (7.8:2.2) to H₂O (pH 3.2) - CH₃CN (7.5:2.5) within 15 min; from H₂O (pH 3.2) - CH₃CN (7.5:2.5) to H₂O (pH 3.2) - CH₃CN (7:3) within 5 min; total time: 40 min; flow rate: 1 mL/min; injection volume: 10 μ L.

Wavelength: 254 nm

Instructions

Micropropagation

1. Wash the leaves under agitation in 0.4% tween 80 for 20 min, followed by 3 rinses with distilled water before surface sterilization in 70% ethanol for 5 min under agitation, followed by 3 rinses in sterile distilled water.
2. Under aseptic conditions, treat the leaves with 1% NaOCl for 4 min, followed by 3 rinses in sterile distilled water in a laminar flow chamber.
3. After the treatment, introduce the leaf explant in 500 mL vessel containing 80 mL of sterile medium with basic MS salts (Murashige and Skoog) supplemented with 87.3 mM sucrose, 4.1 M nicotinic acid, 1.5 M thiamine HCl, 0.6 M myo inositol, 2.4 M pyridoxine HCl and 0.8% agar (MSØ).
4. Adjust the pH to 5.8 before autoclave sterilization in autoclave at 121 °C for 15 min.
5. Maintain the cultures at 25 $\pm$ 2 °C with a 16 h photo period 23.4 μ molm⁻² s⁻¹ from a fluorescent lamp of 20 watts.
6. After 30 days, excise leaves from the shoots developed by the explant and reintroduce into flasks with fresh medium.
7. Repeat this process of sub culturing at 30 days time intervals during 6 months.

Acclimatization

1. After the micropropagation procedure, transfer plantlets to pots containing soil substrate and keep in a greenhouse.
2. Maintain the pots initially in a high humidity environment during about one month and expose gradually to lower levels of humidity.
3. Transfer the plantlets to soil only after this procedure.

Extraction

1. Collect *K. pinnata* (KP) leaves from several 1-year-old KP individuals in summer season grown in shade.
2. Triturate fresh leaves in a blender with distilled water at 20% (w/v), then heat for 30 min at 50 °C and filter to obtain the preparation called hot aqueous extract.

Analysis by HPLC

1. Perform analysis using a HP 1100L instrument with a diode array detector and managed by a HP 9000 workstation (Hewlett Packard, Palo Alto, CA, USA).
2. Use a RP-18 reverse-phase column (5 μ m, 250 mm, 4.60 mm, Luna, Phenomenex, USA) maintain at 26 °C for separation.
3. Use mobile phase consisting of (A): H₂O adjusted to pH 3.2 by HCOOH and (B): CH₃CN.
4. Set a gradient elution as: from H₂O (pH 3.2) - CH₃CN (10:0) to H₂O (pH 3.2) - CH₃CN (8:2) within 10 min; from H₂O (pH 3.2) - CH₃CN (8:2) to H₂O (pH 3.2) - CH₃CN (7.8:2.2) within 10 min; from H₂O (pH 3.2) - CH₃CN (7.8:2.2) to H₂O (pH 3.2) - CH₃CN (7.5:2.5) within 15 min; from H₂O (pH 3.2) - CH₃CN (7.5:2.5) to H₂O (pH 3.2) - CH₃CN (7:3) within 5 min.
5. Set the total time of analysis as 40 min.
6. Set the flow rate to 1 mL/min.
7. Dilute 10 mg of extract in 1 mL of purified water.
8. Inject 10 μ L of the sample solution.
9. Set the detector at 254 nm.

Validation

Concentration	2.092 $\pm$ 0.035%, Quercetin 3-O- α -L-arabinopyranosyl (1-2)- α -L-rhamnopyranoside
	0.241 $\pm$ 0.008%, Quercetin 3-O- α -L-arabinopyranoside
	0.068 $\pm$ 0.004%, Kaempferol 3-O- α -L-arabinopyranosyl(1-2)- α -L-rhamnopyranoside

摘要、所用仪器、实验条件、
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Title	Analysis of 3-[(2-O- α -L-Arabinopyranosyl-6-deoxy- α -L-mannopyranosyl)oxy]-2-(3,4-dihydroxyphenyl)-5,7-dihydroxy-4H-1- View All	Analysis of Hyperoside in <i>Prunus serotina</i> by Reversed-phase HPLC	Analysis of <i>rel</i> -(1 α ,3R,4 α ,5R)-1,3,4,5-Tetrahydroxycyclohexanecarboxylic acid mono(3,4,5-trihydroxybenzoate) in View All
CAS Method Number	1-131-CAS-168528	1-131-CAS-66641	1-131-CAS-239804
Method Category	Natural Product Isolation Analysis	Natural Product Isolation Analysis	Natural Product Isolation Analysis
Technique	UV-visible spectroscopy; Reversed-phase HPLC; Solvent extraction	Liquid chromatographic UV detectors; Reversed-phase HPLC	Reversed-phase HPLC; Electrospray ionization tandem mass spectrometry
Analyte	Guaijaverin ; Kapinnatioside; 3-[(2-O- α -L-Arabinopyranosyl-6-deoxy- α -L-mannopyranosyl)oxy]-2-(3,4- View All	Chlorogenic acid; Hyperoside; Juglanin; Reynoutrin; Avicularin; Guaijaverin ; Organic acids; Flavonoids	2''-O-Galloylhyperin; <i>rel</i> -1',1'',1'''-[(1R,2 α ,3R,5 α)-5-Carboxy-1,2,3,5-cyclohexanetetrayl] tetrakis(3,4,5- View All
Matrix	Kalanchoe pinnata; Leaf	Leaf; <i>Prunus serotina</i>	Leaf; <i>Byrsonima</i>
Other Materials	Water; Ethanol; Polyoxyethylene sorbitan monooleate; Sodium hypochlorite; Nicotinic acid; Sucrose; Vitamin B ₁₂ ; Pyridoxine; RP-18 View All	Chloroform; Hydrochloric acid; Acetonitrile; Methanol; Phosphoric acid; 250 mm x 4 mm, 5- μ m particle, UChrospher 100 View All	Millex filter (0.45 μ m); C ₁₈ reversed-phase (RP) column (5 μ m, 2.1 mm x 150 mm)
Equipment Used	HPLC instrument, HP 1100L, Hewlett Packard, Palo Alto, CA, USA; Diode array detector, Hewlett Packard	HPLC system, 1100 Series, Perlan Technologies, USA; UV-visible detector, HP 1314 A	HPLC system, Thermo spectra system; LCQ Deca ion trap instrument, Thermo Finnigan, San Jose, CA, USA
Conditions	Instrument: Column: RP-18 reverse-phase column (5 μ m, 250 mm, 4.60 mm, Luna); mobile phase: (A): H ₂ O adjusted to pH 3.2 View All	Chromatographic: Mobile phase: 0.5% aqueous solution of orthophosphoric acid (component A) and Acetonitrile View All	Instrument: C ₁₈ reversed-phase (RP) column (5 μ m, 2.1 mm x 150 mm); mobile phase A: 0.1% trifluoroacetic acid (TCA); View All
Source	Influence of cultivation conditions, season of collection and extraction method on the content of antileishmanial flavonoids from View All	Quantitative HPLC analysis of flavonoids and chlorogenic acid in the leaves and inflorescences of <i>Prunus serotina</i> Ehrh. View All	Application of liquid chromatography/electrospray ionization tandem mass spectrometry to the analysis View All

Preparation	Micropropagation 1. Wash the leaves under agitation in 0.4% Tween 80 for 20 min, followed View All	Sample Preparation 1. Collect the samples of flowers (racemes only or complete) View All	Preparation of leaves of <i>Byrsonima crassa</i> 1. Collect the leaves of <i>Byrsonima crassa</i> air-dry and powder 10 s of View All
Method	Extraction 1. Collect <i>K. pinnata</i> (KP) leaves from several 1-year-old KP individuals in View All	Extraction 1. Defat the plant material (100 mg) by <i>in vacuo</i> extraction with chloroform View All	Reversed phase-high performance liquid chromatography - electrospray ionization tandem mass spectrometry View All
Concentration	2.092 $\pm$ 0.035%, Quercetin 3-O- α -L-arabinopyranosyl (1-2)- α -L-rhamnopyranoside, 0.241 $\pm$ 0.008%, View All	27.15 μ g/mL, Chlorogenic acid, 6.89 μ g/mL, Rutin, 23.27 μ g/mL, Hyperoside, 8.53 μ g/mL, Reynoutrin, 7.10 μ g/mL, Guaijaverin, View All	
Linearity Range		4.72 - 39.35 μ g/mL, Chlorogenic acid, 0.83 - 8.35 μ g/mL, Rutin, 4.86 - 25.30 μ g/mL, Hyperoside, 1.33 - 9.96 μ g/mL, Reynoutrin, View All	
Limit of Detection		0.378 μ g/mL, Chlorogenic acid, 0.167 μ g/mL, Rutin, 0.243 μ g/mL, Hyperoside, 0.266 μ g/mL, Reynoutrin, 0.265 μ g/mL, View All	
Limit of Quantitation		1.259 μ g/mL, Chlorogenic acid, 0.557 μ g/mL, Rutin, 0.810 μ g/mL, Hyperoside, 0.885 μ g/mL, Reynoutrin, 0.883 μ g/mL, View All	
Recovery		93.5% (RSD 0.8%), Chlorogenic acid, 95.3% (RSD 1.6%), Rutin, 94% (RSD 1.3%), Hyperoside, 95.6% (RSD 2.8%), Reynoutrin, View All	
Retention Time			10.14 min, Monogalloylquinic acid, 10.99 min, Digalloylquinic acid, 11.31 min, Trigalloylquinic acid, 12.54 min, View All

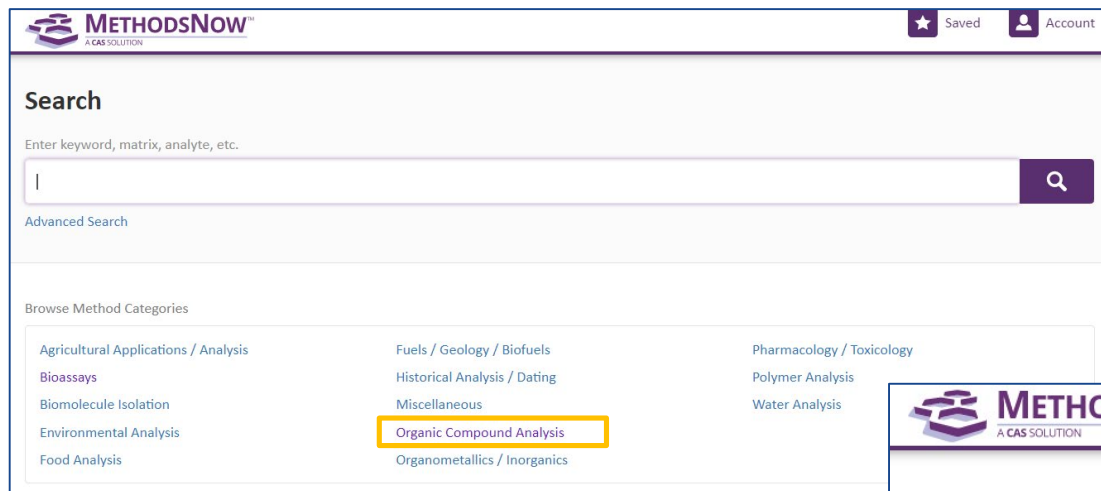
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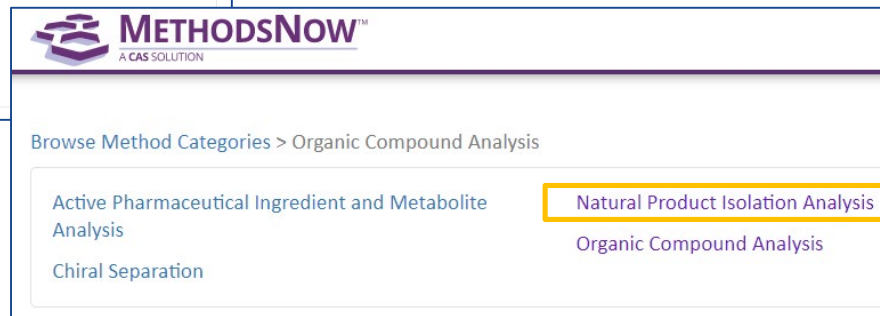
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Bioassays	Historical Analysis / Dating	Polymer Analysis
Biomolecule Isolation	Miscellaneous	Water Analysis
Environmental Analysis	Organic Compound Analysis	
Food Analysis	Organometallics / Inorganics	



The screenshot shows the 'Organic Compound Analysis' category page. The header is the same as the homepage. Below the header, the breadcrumb 'Browse Method Categories > Organic Compound Analysis' is displayed. A list of sub-categories is shown, with 'Natural Product Isolation Analysis' highlighted by a yellow box.

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Chiral Separation	Organic Compound Analysis



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☐ **Analysis of Flavonoids in Pistacia lentiscus by Solvent extraction**
CAS MN: 1-131-CAS-434307

Analyte	Flavonoids
Matrix	Flower; Fruits; Leaf; Pistacia lentiscus; Stem
Other Materials	Reagent: Acetone; Aluminum chloride; Methanol Material: Whatman No. 4 filter paper
Method Category	Natural Product Isolation Analysis
Technique	Colorimetry; Solvent extraction
Equipment Used	Spectrophotometer
Source	Sex-related differences in essential oil composition, phenol contents and antioxidant activity of aerial parts in Pistacia lentiscus L. during seasons Yosr, Zaouali; Imen, Bel Hadj Yahya; Rym, Jaouadi; Chokri, Messaoud; Mohamed, Boussaid Industrial Crops and Products (2018), 121, 151-159. Elsevier B.V. Full Text Abstract ▾

☐ **Analysis of Flavonoids in Excoecaria agallocha by Solvent extraction**
CAS MN: 1-131-CAS-433714

Analyte

- ☒ Flavonoids (4452)
- ☐ Phenols (2217)
- ☐ Tannins (927)
- ☐ Rutin (562)
- ☐ Quercetin (549)
- [View All](#)

Matrix

- ☒ Leaf (4452)
- ☐ Stem (753)
- ☐ Root (487)
- ☐ Flower (485)
- ☐ Bark (351)
- [View All](#)

Method Category

- ☒ Natural Product Isolation Analysis (4452)
- ☐ Antioxidant Assay (2065)
- ☐ Bioassay (1178)
- ☐ Active Pharmaceutical Ingredient and Metabolite Analysis (335)
- ☐ Food Analysis (297)
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Technique

- ☒ Solvent extraction (4452)
- ☐ Spectrophotometry (3987)

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