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A new sulphated flavone and other phytoconstituents from the leaves of Tetracera indica Merr. and their alpha-glucosidase inhibitory activity (Article)

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Abstract

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The bioactivity guided fractionation of Tetracera indica leaves crude ethanolic extract has afforded the isolation and characterization of six compounds including a new natural product viz., 5,7-dihydroxyflavone-O-8-sulphate (1) and five known flavonoids (2–6). The structures of the compounds were elucidated using 1D and 2D NMR and HRESIMS spectroscopic analyses. All the isolated compounds were evaluated for their in vitro inhibitory activity against alpha-glucosidase. Compound 1, 5 and 6 showed strong alpha-glucosidase inhibitory activity, 3 and 4 displayed weak activity while compound 2 was inactive. The interactions of the active compounds with alpha-glucosidase were further investigated using molecular docking to confirm their antidiabetic potential. © 2018, © 2018 Informa UK Limited, trading as Taylor & Francis Group.

SciVal Topic Prominence ⓘ

Topic: Erythrina | Fabaceae | stem bark

Prominence percentile: 72.803   ⓘ

Reaxys Database Information

ⓒ View Compounds

Author keywords

(alpha-glucosidase inhibitory activity) (dilleniaceae) (docking) (sulphated flavonoid) (Tetracera indica)

Indexed keywords

EMTREE drug terms: (5,7 dihydroxyflavone o 8 sulphate) (alpha glucosidase) (flavone derivative) (kaempferol) (norwogonin) (quercetin) (tectochrysin) (unclassified drug) (wogonin) (flavone derivative) (flavonoid) (glycosidase inhibitor) (plant extract) (sulfate)

EMTREE medical terms: (antidiabetic activity) (Article) (biological activity) (Dilleniaceae) (drug isolation) (drug structure) (enzyme inhibition) (IC50) (in vitro study) (molecular docking) (nonhuman) (nuclear magnetic resonance spectroscopy) (phytochemistry) (plant leaf) (Tetracera indica) (chemistry) (Dilleniaceae) (isolation and purification) (plant leaf) (structure activity relation)

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MeSH:

Dilleniaceae · Flavones · Flavonoids · Glycoside Hydrolase Inhibitors · Molecular Docking Simulation · Plant Extracts · Plant Leaves · Structure-Activity Relationship · Sulfates

Chemicals and CAS Registry Numbers:

alpha glucosidase, 9001-42-7; kaempferol, 520-18-3; quercetin, 117-39-5; tectochrysin, 520-28-5; wogonin, 632-85-9; sulfate, 14808-79-8;

Flavones; Flavonoids; Glycoside Hydrolase Inhibitors; Plant Extracts; Sulfates

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