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A REVIEW ARTICLE ON PLANT PASSIFLORA

Arjun Saini* and Bhupendra Kumar

Dev Bhoomi Institute of Pharmacy and Research Dehradun Uttrakhand Pin: 248007.

Corresponding Author: Arjun Saini
Dev Bhoomi Institute of Pharmacy and Research Dehradun Uttrakhand Pin: 248007.

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ABSTRACT

Nature has been a wellspring of remedial administrators for an enormous number of year and a vital number of present day calm have been isolated from customary sources, numerous reliant on their use in ordinary medicine. Plants from the family Passiflora have been used in standard drug by various social orders. Flavonoids, glycosides, alkaloids, phenolic blends and eccentric constituents have been represented as the major phyto- constituents of the Passiflora spe-cies. This overview delineates the morphology, standard and tales uses, phyto- constituents and pharmacological reports of the prominent kinds of the sort Passiflora. Diverse virgin areas of investigation on the kinds of this sort have been highlighted to examine, detach and recognize the therapeutically huge phyto-constituents which could be utilized to help various diseases impacting the mankind. The objective of the current examination was to concentrate all Passiflora species. The sythesis of each specie presented particularities; this legitimizes the essentialness of studies concentrating on the phenolic bit of different Passiflora species. Flavones C-glycosides were recognized in all concentrates, and are found as the central constituents in P. vitifolia, P. coccinea, P. bahiensis and P. sidifolia.

KEYWORDS: Passiflora Species, Chemical, Phyto-constituents, Pharmacological-Activity, Traditional uses, Dosage.

INTRODUCTION

Passiflora originates from Latin word "Passio" that was first time found by Spanish pioneers in 1529 and was depicted as an image for "Energy of Christ" (Kinghorn, 2001; Dhawan et al., 2004). The variety Pas-siflora, including around 400 species, is the biggest in the family Passifloraceae (Montanher et al., 2007; Be-ninca et al., 2007). An enormous class of herbaceous or woody ring climber (The Wealth of India, 2001), generally appropriated in the warm mild and tropical areas of the World, however they are a lot rarer in Asia, Australia, and tropical Africa (Beninca et al., 2007). A large number of the species are of decorative worth and a couple are developed for their eatable organic products.

The focal point of this audit is to give data on the morphology, dynamic constituents and pharmacolog-ical exercises of the class Passiflora. Plants from this variety known to contain different dynamic principals of helpful worth and has organic movement against number of sicknesses. There is number of phar-macological impacts are accounted for on these plants.

The clinical utility of not very many types of Passiflora has been experimentally considered (Akhondzadeh et al., 2001). Passionflower separates have been grouped into a few classifications of compound exercises like anxiolytic, spasmolytic, sleep inducing, soothing, opiate and anodyne (Ozarko, 2001). These concentrates are a piece of a treatment that has effectively rewarded outpatients with modification issue and on edge state of mind (Broutin et al., 1997). Numerous species have been found to contain beta-carboline harmala alkaloids with stimulant properties. The blossom and organic product has just hints of these synthetic substances, however the leaves and the roots are regularly progressively powerful and have been utilized to improve the impacts of brain changing medications. When dried, the leaves can likewise be smoked. Passiflora quadrangularris is utilized by customary healers for snake nibbles. Snake chomps cause blood thickening and in the long run burst veins around the nibble, this is known as discharging (Worldnet, 2001).

At the point when a concentrate of the leaves and parts of P. quadrangularris was controlled orally either previously or after a venom infusion, draining kills and dipped under 25% in mice (Otero et al., 2000). A few monoterpenoid (mixes with 10 carbons) have been secluded from P. quadrangularris. (Osorio, 2001); some dietary monoterpenes have been demonstrated chemopreventive against rodent mammary malignant

growth (Crowell,1997). Passiflora alata can prompt word related unfavorably susceptible infection in people (Giavina et al., 1997). Shatfocide, which is a glycoside of apigenin, was confined from Passiflora incamata L. (Li et al., 1991). Likewise analyzes finished with wheat grows extricate recommend that shaftocide is liable for the antimutagenic properties of the concentrate (Peyrt et al., 1992). In this survey, phytochemical, pharmacological information, along with the clinical and unfavorable impact of Passiflora and its bioactive parts, will be quickly talked about. The survey will at that point center around modern and clinical employments of Passiflora.

PLANT PROFILE
Organic Name: passifora vitifolia kunth Family: Passifloraceae

Plant scientific classification
Realm : Plantea Subkingdom : Tracheobionta
Superdivision : Spermatophyte Division: Magnoliophyt
Class : Magnoliopsida Subclass : Dilleniidae Request : Violaes Family : Passifloraceae Family : Passiflora l.
Species : Passiflora vitiflolia kunth

Equivalent words (Passiflora vitifolia)
Macrophora sanguinea
Passiflora punicea Passiflora sanguinea Tacsonia buchanani
Tacsonia sanguinea

Regular NAMES
Spanish: Chulupo, granadilla, gulupa, gulupo, granadillo, "Passiflora vitifolia". granadilla silvestre, granadilla de murciélago.

PART USED AS DRUD
Leaves

Figure: 1&2 Passiflora(different spacies).

CULTIVATION
Soil
The dirt ought to be rich, all around depleted, and damp with water prerequisite unreservedly when it is developing and keeps it only clammy in winter. It required topsoil based preparing with rotted natural material utilized as manure. The compost ought to have offset with fluid. More measure of nitrogen advances extreme vegetative development and not many blossoms. Water is required unreservedly when it is developing and keeps it only clammy in winter.

Red Passion Flower, Grape-leaved Passion Fruit, Perfumed Passionflower, Vine-Leaf Passion Flower, Passion Flower.

Conveyance
The blood red energy bloom is local to Costa Rica, Nicaragua, Panama, Venezuela, Colombia, Ecuador, and Peru, in South and Central America. It develops normally in Hawaii, yet isn't found in the wild somewhere else in North America.

MORPHOLOGY (Hawaiian Plants and Tropical Flowers)
Blossom: The exceptional blossoms are up to 6 inches (15 cm) across and comprise of red external fibers, white inward fibers, and 10 red petals, which comprises 5 petals and 5 petal-like sepals.
Natural products: Fruit are egg fit as a fiddle with delicate, succulent, whitish mash. Yellow-dotted to white- spotted, brilliant green in shading.

Leaves: The leaves are like grape leaves and contain 2 saucer-molded nectaries at the base of the petioles. The leaves are dull green in shading. They are substitute, contain fluffy haired underneath, and profoundly 3-lobed with 3 lanceolate, toothed to scalloped flaps.

Stems: In passiflora vitifolia stems are slim with looping rings.

Extraordinary CHRACTER
Butterfly Plant: Gulf Fritillary (Agraulis vanillae) butterfly caterpillars feed on the leaves. Consumable: The natural product mash is sweet and eatable.
Fragrant: The blossoms are fragrant.


Figure: 3&4 Passiflora.

Atmosphere

The plant is evergreen vine type. It is a plant of the swamp tropic. The plant required full light with conceal from sweltering sun.

Proliferation

It is proliferated by seed which is planted at 13 to 18°C in spring or by root with semi heard wood cuttings in summer. It tends to be proliferated by layering which is done in spring or harvest time.

Habitat Parameter

Table 1:

S.NO.	Habitat parameters	Requirements
1.	Light range	Full light with shade from hot sun.
2.	pH	Can tolerate acidic pH
3.	Temperature	
4.	Soil range	**Rich, well drained, moist**
5.	Water range	**Medium drought tolerance**
6.	Altitude	To 20 feet (6 m) long

Phyto-Constituents

Alkaloids, phenols, glycosyl flavonoids and cyanogenic mixes are known in the variety. Writing review has uncovered that various reports are accessible on Passiflora incarnata and Passiflora edulis, while just inconsistent reports are there on different types of Passiflo-ra. In this way, Passiflora incarnata and Passiflora edulis have been managed as discrete heads in the accompanying pas-sages, and the rest of the types of Passiflora have been introduced in a plain structure.

Passiflora edulis

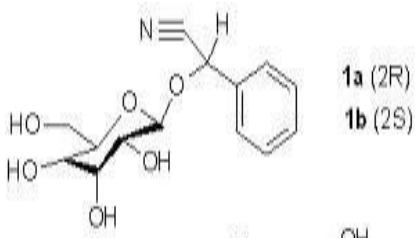
Leaf and stem material of Passiflora edulis contains the new cyanogenic glycosides (2R)– β-D-allopyrano-sy-loxy-2-phenylacetonitrile and (2S)– β-D-allopyranosyloxy-2-phenylacetonitrile, alongside littler measures of (2R)– prunasin , (2S)- sambunigrin (Seigler et al., 2002). From the me-thanol concentrate of air dried leaves, a cyclopropane tri-terpine glycoside, named passiflorine (3) (Bombardelli et al., 1975) was detached, synthetically which was re-ported to be (22R), (24S)- 22, 28-epoxy-24-methyl-1α, 3β, 24, 28-tetrahydroxy-9, 19-cyclo-9β- lanostan-4-oic corrosive β-d-glucosyl ester (Dhawan et al., 2004). Passiflora edulis has been accounted for to be wealthy in glycosides which incorporate flavonoid glycosides, viz., luteolin-6-C-chinovoside, luteolin-6-C- fucoside (Mareck et al., 1991); cyclopentenoid cyanohydrin glycosides passi-capsin and passibiflorin; cyanogenic glycosides passicoriacin, epipassicoriacin and epitetraphyllin B, cyanogenic-β-rutinoside{(R)– mandelonitrile-α- L-rhamnopyranosyl-β-D-glucopyranoside} (Chassagne et al., 1998) and amygdalin (Dhawan et al., 2004). The flavonoids present in Passiflora edulis leaves were distinguished by an elite fluid chromatogra-phy-diode exhibit recognition couple mass spectrometry (HPLC-DAD-MS/MS) strategy, sixteen apigenin or lute-olin subordinates were portrayed, Which included four mono-C-glycosyl, eight O-glycosyl-C-glycosyl, and four O-glycosyl subordinates. With the exemptions of C-hexosyl luteolin and C-hexosyl apigenin, all the com-pounds displayed a deoxyhexose moiety. Also, the extraordinary C-deoxyhexosyl subordinates of luteolin and apigenin have been recognized for first time in Quite a while siflora edulis by HPLC-DAD-MS/MS (Ferreres et al., 2007). 4-Hydroxy-β-ionol, 4-oxo-β-ionol, 4-hydroxy-7,8-dihydro-β-ionol, 4-oxo-7,8-dihydro-β-ionol, 3-oxo-α-ionol, isomeric 3-oxo retro-α-ionols, 3-oxo- 7,8-dihydro-α-ionol, 3-hydroxy-1,1,6 - trimethyl - 1,2,3,4-tetrahy-dronaphthalene vomifoliol and dehydrovomifoliol, ter-pene alcohols linalool and α-terpeneol, terpene diols(E) and (Z)- 2, 6-dimethyl-octa-2,7- diene-1,6-diol, 2,6-dimethyl-octa-3,7-dien-2,6-diol,2,6-dimethyl-1,8-octanediol, 2, 6-dimethyl-octa-1,7-diene- 3,6-diol, ionol subsidiaries oxygenated in position 3, and 2,5-dimethyl-4-hydroxy-3-(2H)- furanone (furaneol) have been iden-tified.

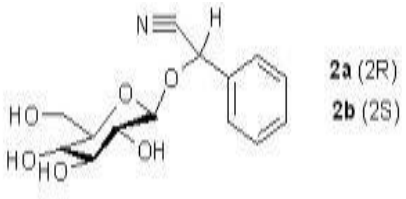
Two new ionones I and II were separated (Dhawan et al., 2004). The alkaloids answered to be available are harman

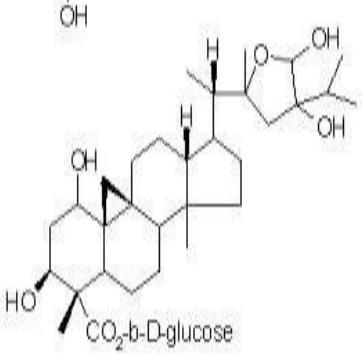
(Dhawan et al., 2004), harmine, har-malol, harmol and harmaline, the most noteworthy focus (0.12 mg %) of harman alkaloids is available in the leaves. Aside from glycosides, phenols and alkaloids, different incidental phyto-constituents announced from Passiflora edulis include: edulans I and II (Dhawan et al., 2004); gelatins (Pinheiro et al., 2008), the gelatin parts contain essentially sugars (83–85%, w/w). In any case, non-sugar parts, for example, nitrogen-containing material (3–8%, w/w) and debris (5–7%, w/w) are likewise present in these divisions (Yapo et al., 2008); dietary fiber (nonstarchy polysaccharides) (Yapo et al., 2008); Furanone, coumarin, myristic corrosive, palmitic corrosive, Kavain, yagonin, dihydromethysticin (Khanh et al., 2006) and rutin (Pereira et al., 2004) and so forth had been disengaged. (+)- Cis-2-methyl-4-propyl-1, 3-oxathiane, the primary segment answerable for thepassion natural product smell has been recognized. The shades present in the purple organic product juice are generally carotenoids, among which β-carotene prevails. There are just hints of flavones. Phytofluene, α-carotene , and β-carotene , have likewise been segregated. The characteris-spasm wonderful smell of the yellow energy organic product is found to live in the unpredictable oil. N-hexyl caproate (Hiu and Scheuer, 2006), which doesn't appear to have been accounted for before in any plant item, is the essential segment of the oil. N-hexyl butyrate, ethyl caproate, and ethyl butyrate are likewise present. The free amino acids announced in the purple natural product juice are leucines, valine, tyrosine, proline, threonin, glycine, aspartic air conditioning id, arginine, and lysine (The Wealth of India, 2001). Cycloartane triterpenes, cyclopassifloic acids A–D, and their saponins, cyclopassiflosides I–VI (Yoshikawa et al., 2000), from the leaves and stems of Passiflora edulis, which on further sanitization by silica-gel chromato-graphy gave cyclopassifloic acids E–G and their sapo-nins, cyclopassiflosides VII–XI , individually (Yoshi-kawa et al., 2000). Minerals: Na, K, Mg, Ca, Zn, Al, Mn, Fe (Nogueira et al., 1998) has been unmistakably recognized.

An antifungal protein from seeds of the enthusiasm natural product (Passiflora edulis) has been confined and contrasted its attributes and other antifungal proteins and bo-vine beta-lactoglobulin taking into account its N-terminal amino corrosive grouping similitude to beta-lactoglobulin. The iso-lation system involved particle trade chromatogra-phy on Q-Sepharose, hydrophobic connection chroma-tography on Phenyl-Sepharose, particle trade chroma-tography, and gel filtration on Superdex 75. The iso-lated 67-kDa protein, assigned as passiflin, displayed a N-terminal amino corrosive arrangement intently looking like that of ox-like beta-lactoglobulin. It is the primary enemy of parasitic protein found to have a beta-lactoglobulin-like N-terminal arrangement (Lam and Ng, 2009). Unsaturated fat organization of the seed oil showed that the oil con-tains two fundamental unsaturated fats (linoleic corrosive and linolen-ic corrosive), yet the substance of linoleic corrosive (19) is by a long shot more prominent than that of linolenic corrosive (Liu et al., 2008). The enantiomeric organizations of the acetic acid derivations, buta-noates, hexanoates, and octanoates of the optional alcohols 2-pentanol, 2-heptanol, and 2- nonanol were resolved in Passiflora edulis.

The mixes were disengaged by methods for simultane-ous refining extraction. Enantiodifferentiation was performed by means of multidimensional gas chromatography utilizing heptakis, that is (2, 3-di-O-methyl- 6-O-tert-butyldimethylsilyl)- beta-cyclodextrin as chiral statio-nary stage. The arrangement of homologous 2-alkyl esters, which are commonplace constituents of energy organic products, were demonstrated to be available as almost optically unadulterated (R)- enantiomers (Strohalm et al., 2007). A full-length cDNA clone of the Myo-inositol-1-phosphate synthase from Passiflora edulis was secluded and portrayed by southern smudge investigation (Abreu and Aragao, 2007).







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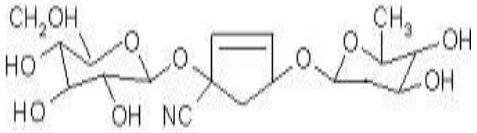

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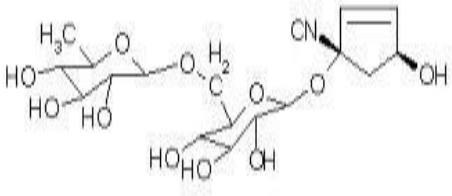

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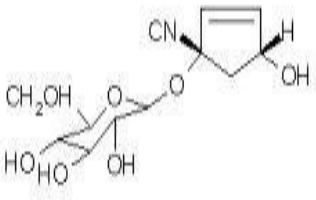

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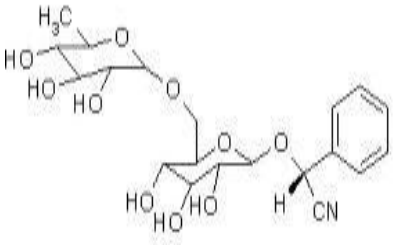

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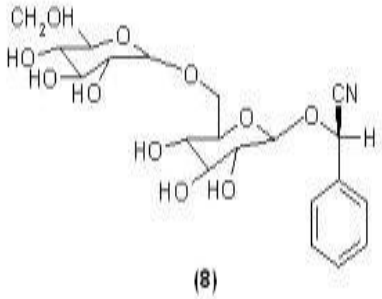

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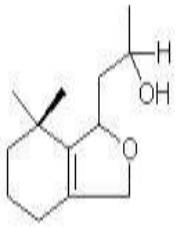

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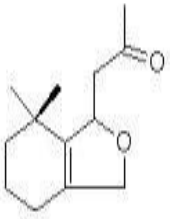

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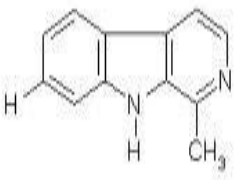

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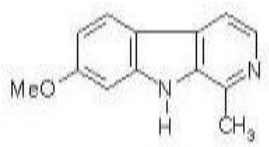

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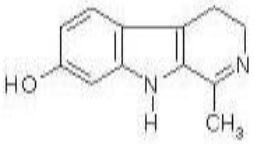

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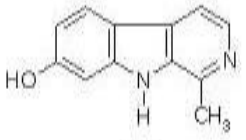

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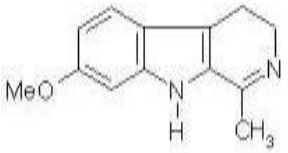

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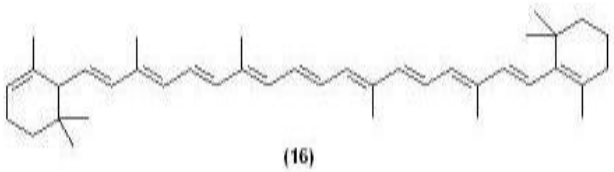

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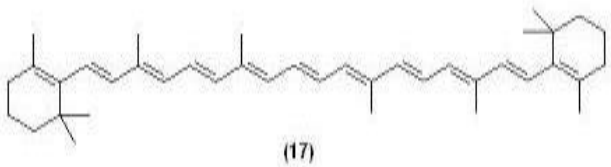

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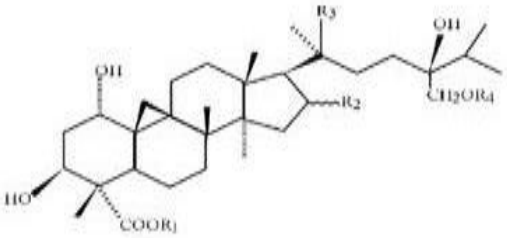


Cyclopassifloic acid E	$R_1=R_4=H, R_2=\beta$-OH, $R_3=OH$
Cyclopassifloic acid F	$R_1=R_3=R_4=H, R_2=\beta$-OH
Cyclopassifloic acid G	$R_1=R_3=R_4=H, R_2=\alpha$-OH
Cyclopassifloside VII	$R_1=Glc, R_2=\beta$-OH, $R_3=OH, R_4=H$
Cyclopassifloside VIII	$R_1=Glc, R_2=\beta$-OH, $R_3=R_4=H$
Cyclopassifloside IX	$R_1=R_4=Glc, R_2=\beta$-OH, $R_3=H$
Cyclopassifloside X	$R_1=Glc, R_2=\beta$-OH, $R_3=R_4=H$
Cyclopassifloside XI	$R_1=R_4=Glc, R_2=\alpha$-OH, $R_3=H$

(18)

Passiflora Incarnate

Flavonoids are substance phenylbenzopyrones, which, normally conjugated with sugars, are available in all vascu- lar plants (Zanoli et al., 2000). Flavonoids are accounted for to be the major phyto-constituents of Passiflora incar- nata. It contains basically C-glycosylflavones dependent on apigenin and luteolin.Flavonoids like querce-tin and kaempferol has additionally been disconnected (Gavasheli et al., 1974).

Concerning the subjective sythesis, the past examinations (Glotzbach and Rimp-ler, 1968; Schilcher and der, 1968; Lohdefink, 1976) thatreported vitexin, isovitexin, orientin, isoorientin , and saponarin as fundamental compo-nents are disproved by late all around reported and reli-capable examinations (Geiger and Markham, 1986; Qimin et al., 1991).

A significant C-glucosylflavone spinosin detached from the dynamic sub-part got from thebutanolic division. The creators discovered schaftoside, isoschaftoside , isovitexin-2"- O-β-glucoside and isoorientin-2"- O-β-glucoside (Qimin et al., 1991), moreover vicenin-2 and lucenin-2 adjacent to outstanding measures of isovitexin and isoorientin (Geiger and Markham, 1986) as significant mixes. Vitex-in-4'- O-rhamnoside has likewise been recognized on Passif-lora incarnata extricate (Pietta, 1986). Saponarin, vitexin and orientin happened in little fixations (Geiger and Markham, 1986; Rehwald et al., 1994).

The nearness of a portion of these flavonoids was

affirmed in different examinations. Substances like 6-β-D- glucopyranosyl-8-β-D-ribopyranosyl apigenin and swertisin (35) additionally in-vestigated (Rahman et al., 1997).

The best accumu-lation of flavonoids has been accounted for to be in leaves and the most noteworthy convergence of isovitexin was seen as between the pre-blooming and blossoming stages (Menghini et al., 1993). A recently detailed benzoflavone moiety chrysin (5, 7-dihydroxyflavone) has additionally been evaluated inside Passiflora incarnata separate (Zanoli et al., 2000; Brown, 2007).

During different quantitative examinations, it was seen that the ethanol free fluid concentrate of Passiflora incarnata contains higher substance of flavonoids when contrasted with the business prepara-tions. Among different types of the variety, Pas-siflora incarnata contains most elevated substance of isovitexin (Menghini et al., 1993, Dhawan et al., 2004).

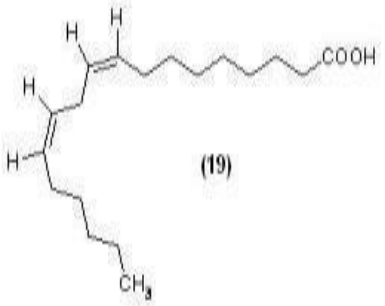
Passiflora incarnata contains straightforward indole alkaloids dependent on β-carboline ring framework to be specific harman, harmol, har-mine, harmalol and harmaline (Poethke et al., 1970). Substance of harman and harmine, controlled by direct spectrofluorimetric techniques on TLC plates, and has been accounted for to be 10– 20 µg/100 ml in the therapeutic liquid concentrate of Passiflora incarnata (Bennati, 1971).

As of late, a wide range of β-carboline alkaloids have been dissected quantitatively by HPLC with particular fluoro-metric discovery (Tsuchiya et al., 1999).

The vegetative pieces of green house developed Passiflora incarnata con-tain 0.012 and 0.007% of harman and harmine, respec-tively, while the substance of these alkaloids in the plant developed in fields has been accounted for as 0.005% and nil, separately (Lohdefink and Kating, 1974; Lutomski and Nourcka, 1968; Rehwald et al., 1995).

Different constituents which have been accounted for from Passiflora incarnata incorporate γ-benzo-pyrone subordinate maltol (Aoyagi et al., 1974), starches, for example, raffi-nose, sucrose, D-glucose and D-fructose (Gavasheli et al., 1975); basic oil containing hexanol (1.4%), ben-zyl liquor (4.1%), linalool (3.2%), 2-phenylethyl alco-hol (1.2%), 2-hydroxy benzoic corrosive methyl ester (1.3%), carvone (8.1%), trans-anethol (2.6%), eugenol (1.8%), isoeugenol (1.6%), β-ionone (2.6%), α-bergamotol (1.7%) and phytol (1.9%); different constituents respon-sible for run of the mill scent of Passiflora incarnata, for example, limonene, cumene, α-pinene, prezizaene, zizaene, and zizanene (Buchbauer and Jirovetz, 1992); twenty one amino acids (Gavasheli et al., 1974), and a cyanogenicglycoside, gynocardin(37)(Spencer) and, Seigler,1984; Dhawan.et,al.,2004).

Figure 5: Passiflora Incarnate.



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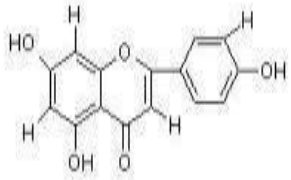

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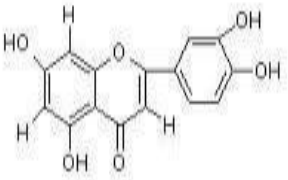

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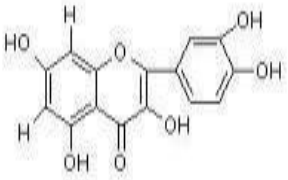

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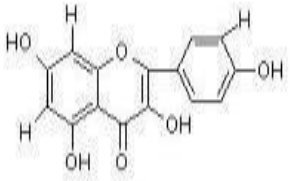

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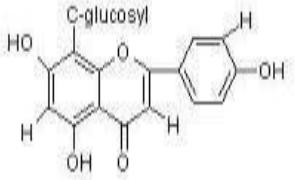

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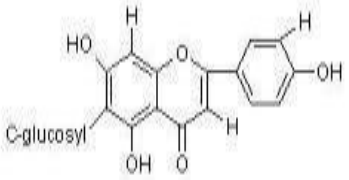

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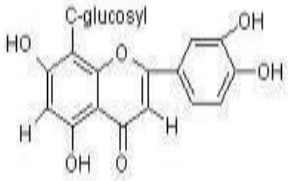

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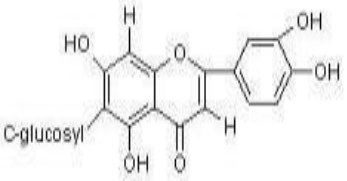

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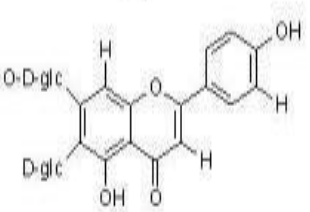

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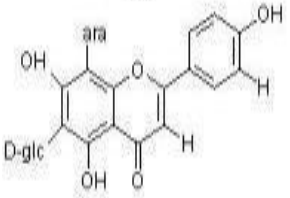

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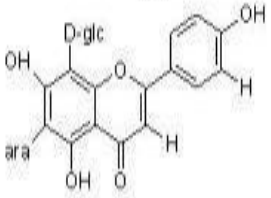

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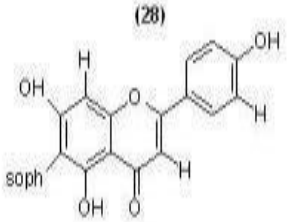

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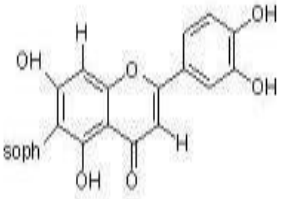

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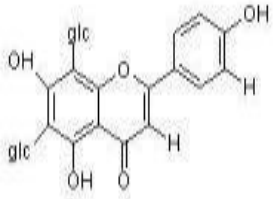

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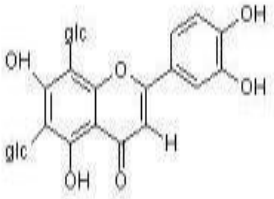

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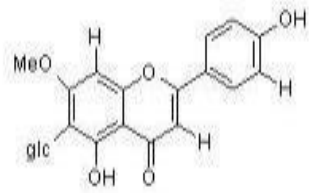

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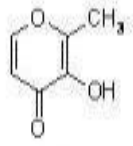

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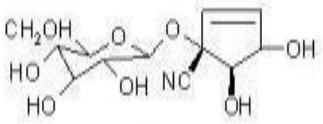

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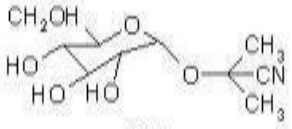

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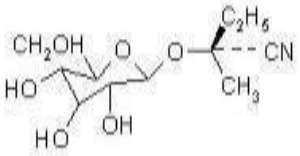

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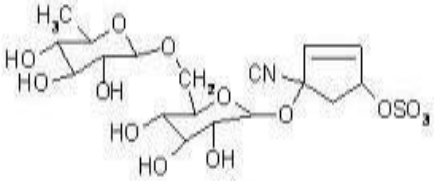

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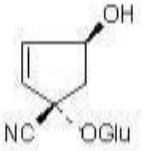

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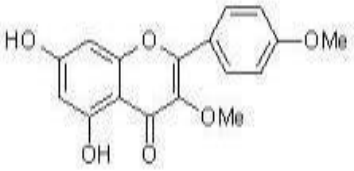

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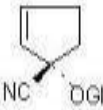

Glu= D-glucopyranosyl

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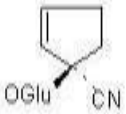

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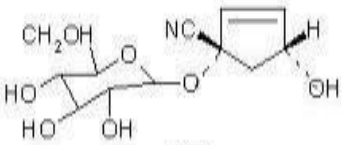

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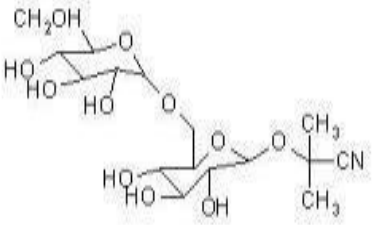

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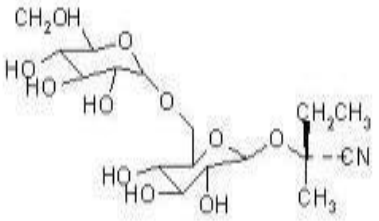

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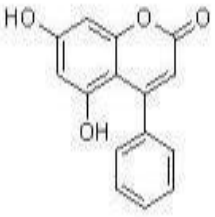

(48)

Other Passiflora species

The phyto-constituents from different types of Passiflora are very much recorded and summed up in the

Table 2:

Species	Phytoconstituents
Passiflora adenopoda Moc. & Sesse	Cyanogenic glycosides linamarin (38), lotaustralian (39) (Spencer et al., 1986)
Passiflora alata Dryand.	C-glycosyl flavonoids 2''-xylosylvitexin and small amount of vitexin, isovitexin and orientin, 3-O-β-D-glucopyranosyl-stigmasterol, 3-O-β-D-glucopyranosyl oleanolic acid, 3-O-β-D-glucopyranosyl-(1->3)-β-D-glucopyranosyl-oleanolic acid, 3-O-β-D-glucopyranosyl-(1->2)-β-D-glucopyranosyl-oleanolic acid; 9, 19- cyclolanost-24Z-en-3β,21,26-trihydroxy-3,26-di-O-gentiobiose (Reginatto et al., 2001; Ulubelen et al., 1982)
Passiflora ambigua Linn.	Flavonoid saponarin (Ulubelen et al., 1982)
Passiflora apetala Linn.	Cyanogenic glycoside passibiflorin (Olafsdottir et al., 1997)
Passiflora biflora Domb.	O- and C-glycosylflavones, 4'-O-rhamnosylswertisin, luteolin-7-O- neohesperidoside together with swertisin, swertiajaponin, 4'-O-rhamnosyl- swertiajaponin, 2''-O-rhamnosylisoorientin and 2''-O-rhamnosylisovitexin (McCormick and Mabry, 1983), cyanogenic glycosides passibiflorin and epipassibiflorin (Dhawan et al., 2004)
Passiflora bryonioides HBK	Flavone derivatives saponaretin, vitexin, apigenin-7-monoglucoside and two kaempferol-3-biosides (Poethke et al., 1970)
Passiflora caerulea Linn.	A flavone chrysin, cyanogenic glycoside sulphate tetraphyllin B-4-sulphate and epitetraphyllin B-4-sulphate (Speroni et al., 1996; Seigler et al., 1982)
Passiflora calcarata Mast.	Passiflorine (Bombardelli et al., 1975)
Passiflora capsularis Lam.	Passicapsin; cyanogenic bisglycoside 4-bi-vinosyltetraphyllin (Fischer et al.,1982)
Passiflora coactilis Linn.	C-glycosyl flavones 4'-O-glucosyl-2''-O-rhamnosyl orientin, 4'-O-glucosyl-2''-O-rhamnosyl-vitexin, vitexin, 4'-O-glucosylvitexin, isovitexin, isoorientin, 4'-O- glucosyl orientin, 2''-O-rhamnosyl orientin, scoparin, 2''-O-rhamnosyl scoparin and 8-C-glucosyl-diosmetin (Escobar et al., 1983)
Passiflora coccinea Aubl.	Cyanogenic glycoside passicoccin (40) (Dhawan et al., 2004)
Passiflora cochinchinensis Sp.	Flavonoids naringin and apigenin-7-O-glucoside; Amino acids; Carbohydrates (Ma et al., 1982)
Passiflora colinvauxii Linn.	Cyanogenic glycoside passibiflorin (Adsersen et al., 1998)
Passiflora coriacea Fuss.	Cyanogenic glycoside barterin (41) (Olafsdottir et al., 1989)
Passiflora cyanea Mast.	C-glycosyl flavonoid 2''-xylosylvitexin and coumarin esculetin (Ulubelen et al., 1981)
Passiflora foetida Linn.	Flavonoids pachypodol, 7,4'-dimethoxyapigenin, ermanin (42), 4',7-O-dimethyl-naringenin, 3,5-dihydroxy-4,7-dimethoxy flavanone, C-glycosyl flavonoids chrysoeriol, apigenin, isovitexin, vitexin, 2''-xylosylvitexin, luteolin-7-d- glucoside, kaempferol; cyanohydrin glycosides tetraphyllin A (43), tetraphyllin B, tetraphyllin B sulphate, deidaclin (44), volkenin (45); Fatty acids linoleic acid and linolenic acid; alpha-pyrones named passifloricins, polyketides alpha-pyrones (Echeverri et al.,2001; Dhawan et al., 2004)
Passiflora hybrida Nees	A sulphate ester of tetraphyllin B (Jaroszewski and Fog, 1989)
Passiflora indecora H.B.K.	Cyanogenic glycoside passibiflorin (Olafsdottir et al., 1997)
Passiflora laurifolia Linn.	Pantothenic acid, ascorbic acid (Dhawan et al., 2004)
Passiflora racemosa Brot.	Sulphate ester of tetraphyllin B (Jaroszewski and Fog, 1989)
Passiflora sanguinolenta M.	Flavonoids isovitexin, luteolin-7-O-glucoside and 7-O-galactoside, xylosyl vitexin, apigenin, apigenin-7-O-glucoside and luteolin (Ulubelen and Mabry, 1983)
Passiflora serratifolia Linn.	C-glycosyl flavonoids vitexin, isovitexin, orientin, 2''-xylosyl vitexin and 2''-xylosyl isovitexin (Ulubelen and Mabry, 1980)
Passiflora serratodigitata L.	Serratin I (48) and its 7-β-glucoside; C-glycosylflavone 2''-xylosylvitexin, 2''-xylosylisovitexin, vitexin, isoorientin, vicenin and orientin (Ulubelen et al., 1982)
Passiflora sexflora Fuss.	Flavonoids 6-di-C-glycosylflavones, 6-mono-C-glycosylflavones, luteolin-7-O-glucoside, luteolin (McCormick and Mabry, 1982)
Passiflora suberosa Linn.	Cyanogenic glycosides passisuberosin, epipassisuberosin; Anthocyanins cyanidin-3-(6''-malonylglucoside), 3-glucoside of cyanidin, delphinidin, petunidin, pelargonidin and anthocyanin acetylated with malonic acid (Kidoey et al., 1997)
Passiflora subpeltata Orteg.	Cyanogenic glycoside barterin (Olafsdottir et al., 1989)

Passiflora talamansis	Cyanogenic glycosides passibiflorin and epipassibiflorin (Spencer and Seigler,1985)
Passiflora tetrandra Banks & Soland.	4-Hydroxy-2-cyclopentenone (Perry et al., 1991)
Passiflora trifasciata Lem.	Cyanogenic glycoside Passitrifasciatin (Olafsdottir et al., 1991; Spencer and Seigler, 1985)
Passiflora trinervia Poir.	Flavonoids vitexin, isovitexin, luteolin-7-O-galactoside, esculetin, isoorientin (Dhawan et al., 2004)
Passiflora vespertilio Ker-Gawl.	Cyanohydrin glycoside passibiflorin (Olafsdottir et al., 1997)
Passiflora violacea Vell.	Cyanohydrin glycoside linamarin (Olafsdottir et al., 1988)
Passiflora warmingii Mast.	Linamarin, linustatin (Fischer et al., 1982), Cyanohydrin (Dhawan et al., 2004)

Passiflora sidifolia

Flavonoid C-glycosides are isolated into mono-C-glycosyl, di-C-glycosyl-and O,C-diglycosyl-flavonoids, in which a hydrolyzable sugar is connected either to a phenolic hydroxyl gathering or a hydroxyl gathering of the C- glycosyl buildup (Abad-Garcia et al., 2008, 2009). In this species were found C,O-diglycosides, di-C-glycosides and mono-C-glycosides flavones, with exemption of compound 1 at 5.1 min, that indicated an UV range normal for caffeoyl subordinates, with most extreme assimilation at 320 nm. The ESI-MS range displayed a deprotonated particle at m/z 682.8. The MS/MS range of deprotonated particle at m/z 682.8 divided to give pieces at m/z 520.8, demonstrating the passing of a glucose moiety, a base top at m/z 340.8 (caffeic acid+hexoside-H) showing the nearness of a caffeoyl hexoside moiety and another section at m/z 178.7, which compares to a deprotonated caffeic corrosive moiety. The MS/MS range on forerunner particle at m/z 340.8 delivered a piece at m/z 178.7 (100%) (deprotonated caffeic corrosive) (Table 3). The hexoside bunch presumably was connected to caffeoyl moiety, since a base pinnacle was seen at m/z 340.8 (Gouveia and Castilho, 2011; Negri et al., 2011). Compound 1 was portrayed as a rosmarinic corrosive diglucoside, which was likewise found in honey bee dust tests (Negri et al., 2011).

Mixes 2 to 9 showed UV phantom information run of the mill of flavones glycosides. The ESI-MS spectra of compound 2 at 17.9 min (Table 3) showed protonated and deprotonated atoms at m/z 595.3 and 593.1 and [M+Na]+ at m/z 617.2, separately. Its MS/MS range in negative particle mode created particles at m/z 575.1 (M-H-18)- , m/z 503.0 (M-H-90)−, and a base top at 473.1 (M-H-120)- , showing a discontinuity example of flavones di-C-glycoside (Table 1). The particles at m/z 353.4 [(M-H-(120+120)]-and 383.2 [(M-H)- (90+120)]-showed the nearness of apigenin (MW 270) as aglycone and two hexose moieties (glucoses). The MS/MS information got in positive particle mode (m/z 595.3) are set in Table 3. Contrasting and MS writing information (Piccinelli et al., 2008), this compound was portrayed as 6,8-di-C-glucosylapigenin, otherwise called vicenin-2. No business standard of vicenin-2 are accessible, thusly, this pinnacle was contrasted and vicenin-2, present in P. incarnata extricate, utilized as a substitute norm (Negri et al., 2012).For compound 3 at 18.7 min, ESI-MS range gave a deprotonated atom at m/z 431.1. The MS/MS range of deprotonated atom yielded a base top at m/z 384.8, by losing of 46 u, which was most likely gotten through a decarboxylation of a glucuronic corrosive moiety at the terminal position. This compound most likely has pinocembrim as aglycone, and was probably portrayed as pinocembrin glucuronide.

The ESI-MS range for compound 4 at 19.5 min displayed a deprotonated particle at m/z 593.0. The carbon-carbon bond is impervious to cleavage, subsequently in flavones C-glycosides the principle cleavage are at the obligations of the sugar (Abad-Garcia et al., 2008, 2009). The MS/MS range of deprotonated particle gave sections at m/z 502.9 [M-H-90]-(40%), showing the nearness of deoxyhexose, a base top at m/z 472.8 [M-H-120]-demonstrating the nearness of hexose, and a piece at m/z 326.7 (aglycone+41) showing luteolin as aglycone (Table 3). Deprotonated atoms separated in impact prompted separation (CID) created pieces, run of the mill of flavones- C,O-glycosides, which are shown by particles Ag+41/Ag+71 (Ferreres et al., 2007). The unpredictable particle at m/z 446.8 (Table 3) can be excused by the loss of an inside rhamnose buildup. Compound 4 was likely portrayed as orientin-2"- O-rhamnoside.

For compound 5 at 20.5 min, the ESI-MS range displayed a deprotonated particle atm/z447.1. The MS/MS range on forerunner particle at m/z447.1 showed pieces particles at m/z 356.9 (M-H-90)- and a base top at m/z 326.9 (M-H-120)- (Table 3). For flavones mono-C-hexosides, the situation of the sugar buildup can be doled out through perception of the wealth of piece particle (M-H-18)- . When all is said in done, the fracture of the 6-C-isomers is increasingly broad, giving a particle comparing to (M-H-18)−, most likely because of the development of an extra hydrogen bond between the 2"- hydroxyl gathering of the sugar and the 5-or 7-hydroxyl gathering of the aglycone, which gives extra unbending nature (Abad-Garcia et al., 2008, 2009; Figueirinha et al., 2008). For this intensify, the wealth of section particle at m/z 428.8 (20) proposed that the mono-C-glycosylation is in position 6, being recognized as luteolin-6-C-glucoside, otherwise called isoorientin. The ESI-MS range for compound 6 at 21.7min additionally showed a deprotonated particle at m/z593.0. The MS/MS range of deprotonated atom at m/z 593.0 gave a base top at m/z

412.8 (M-H-180)- , and a section particle at m/z 293.0 (aglycon+41-18) (Table 3) that compare to apigenin as aglycone. The loss of 180 u (162+18) bringing about a base pinnacle is normal for an O- glycosilation on the hydroxyl bunch on the position 2" of the C-glycosylation sugar in C-glycosyl subsidiaries O- glycosylated (Ferreres et al., 2007). The loss of 120 u demonstrated the nearness of hexose as C-glycosylation sugar.

Compound 6 was likely portrayed as vitexin-2"- O-glucoside.For compound 7 at 22.3 min, the ESI-MS range displayed a deprotonated atom at m/z 563.0, and the MS/MS range of deprotonated particle at m/z 563.0 yielded a base top at m/z 412.7 (M-H-150)−, demonstrating the nearness of pentose as a sugar moiety and furthermore a piece particle at m/z 293.0 (aglycone+41-18)− additionally showing apigenin as aglycone. The loss of sugar notwithstanding water (132+18) is normal for a bond among a pentose and a non-phenolic hydroxyl gathering, presumably at the 2"-O-position, showing that xylose is connected to glucosyl moiety. This flavone was described as vitexin-2"- O-xyloside, a known constituent of Passiflora species (Wohlmut et al., 2010). Compound 8 at 22.8 min, in which the ESI-MS range gave a deprotonated atom at m/z431.2 was portrayed as 8-C-glucosyl apigenin, otherwise called vitexin. Its MS/MS information in negative particle mode are introduced in Table 3. Vitexin is a one of the principle constituent of some Passiflora species (Grundmann et al., 2008; Negri et al., 2012).

The primary constituent found in this hydroethanolic separate, compound 9 at 24.6 min, is presumably a flavone- 6,8-di-C-glycoside. The ESI-MS range displayed a deprotonated particle at m/z 547.0, which was additionally divided giving pieces at m/z 528.5 (M-H-18)−, at m/z 486.8 (M-H-60)−,indicating the nearness of a C-pentose unit, probablyarabinose and a base top at m/z 456.9 (M-H-90)− demonstrating the nearness of deoxyhexose (rhamnose). The sugar substituent connected at C6 position of aglycone gives the most exceptional piece (Figueirinha et al., 2008; Liu et al., 2009, 2011). The (M-H-90)− (Table3) is significantly more serious than the (M-H-60)− particle, subsequently showing that the deoxyhexose is situated at C6, while that the pentose is situated at C8. Contrasting and MS writing information (Liu et al., 2009, 2011), this compound was likely portrayed as apigenin-6-C-rhamnosyl-8-C-arabinoside.

Table 3: Flavones glycosides found in hydroethanolic extract of Passiflora sidifolia.

C.	RT (min)	UVλa (*nm*)	$(ESI)^-$ (*m/z*abundance)	Proposed structure	References
1	5.1	320	MS: 683.0; MS/MS: 520.8 (60),	rosmarinic	Gouveia & Castilho, 2011; Negri et al., 2011
			340.8 (100),	acid	
			179.1 (50)	diglucoside	
2	17.9	270,	MS: 593.1; MS/MS: 574.9 (20),	vicenin-2	Piccinelli et al., 2008; Negri et al., 2012
		340	502.8 (20),		
			472.8 (100), 382.8 (20), 352.7 (20).		
3	18.7	ND	MS: 431.1; MS/MS: 384.8 (100)	pinocembrin glucuronide	
4	19.5	270,	MS: 593.0; MS/MS: 502.9 (40),	orientin-	Ferreres et al.,
		340	472.8 (100),	2”-*O*-	2007
			446.8 (20), 326.7 (50)	rhamnoside	
5	20.5	270,	MS: 447.1; MS/MS: 428.8 (20),	isoorientin	Abad-Garcia et al., 2008; Figueirinha et al., 2008
		350	356.9 (70),		
			326.9 (100)		
6	21.7	270,	MS: 593.0; MS/MS: 412.8 (100),	vitexin-2”-*O*-	Ferreres et al.,
		340	293.0 (30)	glucoside	2007
7	22.3	270,	MS: 563.0; MS/MS: 412.7 (100),	vitexin-2”-*O*-	Wohlmuth et al.,
		340	293.0 (30)	xyloside	2010
8	22.8	270,	MS: 431.2; MS/MS: 340.7 (50),	vitexin	Grundman et al.,
		340	310.7 (100)		2008
9	24.6	270,	MS: 547.0; MS/MS: 528.9 (20),	apigenin-6-*C*-	Liu et al., 2009,
		340	486.8 (70),	rhamnosyl- 8-*C*-	2011; Figueirinha
			456.9 (100)	arabinoside	et al., 2008

Passiflora quadrangularis

In P. quadrangularis were discovered flavones C,O-diglycosides, saponins (cyclopassifloside subordinates) andcyanogenic glycosides. Two of the flavones C,O-diglycosides found in this hydroethanolic separate, mixes 6 and 7, were likewise found in P. sidifolia. Another C-

glycosyl flavone O-glycosilated on the sugar moiety of the C-glycosylation was found at 20.9 min. Compound8 showed a protonated, deprotonated and sodiated atom at m/z 581.1, 578.9 and 603.1 individually. The MS/MS range of deprotonated atom at m/z 578.9 gave parts particles at m/z 458. References 7 (M-H-120)−, at m/z 428.7 (M-H-150)−, at m/z 356.9 (aglycone+71)− and a base top at m/z 326.8 (aglycone+41)− , showing the nearness of a pentose (xylose) and a hexose (glucose) as sugar moieties and luteolin as aglycone (Table 4). In light of correlation with writing information (Ferreres et al., 2007), compound 10 was alloted as orientin-2"- O-xyloside. Despite the fact that isoorientin and isovitexin were found as head constituents in leaves of this species by Antognoni et al. (2007), these flavones were not distinguished in this hidroalcoholic remove. There are scarcely any reports about the flavonoids creation of P. quadrangularis. Vitexin-2¨-O-rhamnoside was described as minor constituent by Zucolotto et al. (2012).

ycloartane triterpenes, for example, cyclopassifloic acids and their saponins subsidiaries cyclopassiflosides, has been disconnected from Passiflora variety (Yoshikawa et al., 2000a,b). Saponins, cyclopassifloside having a cyclopassifloic corrosive B or D as aglycone, were found in high substance in this specie. Identification of saponins utilizing UV is troublesome, because of their show poor ingestion. Cyclopassiflosides were recognized distinctly in the chromatogram acquired utilizing ESI-MS. The froth arrangement during extraction and dissolvable vanishing was a proof for the nearness of saponins.

Ciclopassifloic corrosive B shows sub-atomic equation C31O6H52 and molar mass 520 u. The ESI-MS range of cyclopassifloside 15 at Rt 37.2 min gave a deprotonated atom at m/z 843.3. A transcendent particle at m/z 797.0 was yielded by the passing of an impartial buildup with 46 u from deprotonated atom at m/z 843.3, which presumably was gotten through a decarboxilation, loss of (COOH2) from cyclopassifloic corrosive B. Cyclopassifloside 15 was likely portrayed as cyclopassifloside III [1-O-(1α,3β,9β,24S)- 24-(β-D-glucopyranosyloxy)methyl-1,3,24-trihydroxy-28-oxo-9,19-cyclolanosten-28-yl)- β-D-glucopyranose], being presumably framed by a cyclopassifloic corrosive B (aglycone) and two hexoses (glucoses) as sugar moieties, a β glucose gathering and an ester connected β glucosyl gathering. Cyclopassifloside III was likewise revealed in P. edulis by Yoshikawa et al. (2000a). The ESI-MS of compound 14 at 36.9 min gave a deprotonated atom at m/z989.4, which compare to 146 mass units more prominent than cyclopassifloside III (15). A prevalent particle at m/z 943.3, which was likewise yielded by the loss of 46 u from deprotonated atom at m/z 989.4 (Table 4), proposed that cyclopassifloside 14 is additionally framed by cyclopassifloic corrosive B with progressively three hexoses (two glucoses and one rhamnose), being probably portrayed as cyclopassifloside III rhamnoside.

Ciclopassifloic corrosive D has C30O6H48 as sub-atomic recipe and molar mass of 504 u. For compound 13 at
36.3 min, ESI-MS spectra displayed a deprotonated, protonated and sodiated particle at m/z 959.2, m/z 961.0 and m/z 983.0, individually. The MS/MS range indicated a base top at m/z 797.0, which compared to the loss of glucose moiety (162 u) from deprotonated particle at m/z 959.2 (Table 4), proposing the presence of a glucose gathering. Cyclopassifloside 13 likely was shaped by ciclopassifloic corrosive D as aglycone with progressively two glucoses and a pentose, most likely, arabinose as sugar moieties, being probably portrayed as cyclopassifloic corrosive D arabinosyl diglucoside.

The ESI-MS spectra for compound 16 at 37.8 min (Table 4) showed a deprotonated, protonated and sodiated particle at m/z 943.3, m/z 945.0 and at m/z 967.0, separately. Cyclopassifloside 16 experienced comparative fracture as cyclopassifloside 13, dispensing with a hexose buildup from deprotonated particle at m/z 943.3 to deliver a base top at m/z781.0. Cyclopassifloside 16 was likewise most likely shaped by cyclopassifloic corrosive D as aglycone, having glucose, rhamnose and arabinose as sugar moieties, and was probably described as cyclopassifloic corrosive D glucosyl rhamnosyl arabinoside. For compound18 at 39.4 min the ESI-MS range additionally indicated a deprotonated atom at m/z 843.3 and the MS/MS range demonstrated a similar fracture design than compound 15, the likeness in structure results from their comparative discontinuity pathways, being probably portrayed as a cyclopassifloside III isomer.

For cyclopassifloside 19 at Rt 40.8 min, the ESI-MS range showed a deprotonated atom at m/z 827.0 proposing 828.0 as molar mass (Table 4). Cyclopassifloside 19 is most likely shaped by cyclopassifloic corrosive B as aglycone esterified with a glucosyl and rhamnosyl gatherings, being probably recognized as cyclopassifloic corrosive B rhamnosyl glucoside. Up until now, quite a bit of this cyclopassifloside is being accounted for just because. In the MS/MS discontinuity in negative particle mode, lost glucose was seen in cyclopassiflosides containing a cyclopassifloic corrosive D as aglycone, while that the loss of 46 u, a carboxylic gathering, was seen in cyclopassifloside that contain cyclopassifloic corrosive B as aglycone. Quadranguloside was accounted for in P. alataby Reginatto et al. (2004) and in P. quadrangularis by Orsini et al. (1986, 1987). Quadranguloside have sub-atomic recipe C54O23H90 and molar mass 1106 u. For quadranguloside, the aglycone moiety (9,19- cyclolanost-24Z-en-3β,21,26-triol) has sub-atomic equation C30O3H50 and molar mass 458 u, and the sugar moieties are two gentiobiosides. The ESI-MS range of cyclopassifloside 17 at 38.2 min showed a deprotonated atom at m/z 1105.1 (Table 4) and was likely portrayed as quadranguloside.

Cyanogenesis is across the board in plants, however moderately scarcely any cyanogenic mixes have been confined and described. In the hydroethanolic concentrate of P. quadrangularis two cyanogenic glycosides were likewise found. Particles bearing a positive charge, for example, cyanogenic glycosides, ionize best with positive particle ESI (Sendker and Nahrstedt, 2010). Compound 11 at 32.4 min displayed a protonated particle at m/z 304.1 and the molar mass was reasoned as 303.1u. Passiguatemalin [1-(β-D-glucopyranosyloxy)- 2,3-dihydroxycyclopentene-1-carbonitrile] that have atomic recipe C12O8H19N and molar mass 305 u was disengaged from P. guatemalensis (Jaroszewski et al., 2002). Compound 11 showing a protonated atom at m/z 304.1 presumably is a passiguatemalin subsidiary with one unsaturation in cyclopentene ring, for example, happen in gynocardin, a cyclopentene detailed from P. incarnata (Jaroszewski et al., 2002). Consequently, this cyanogenic glycoside was likely described as gynocardin.

For some cyanogenic plants, essential amide glucosides have been distinguished, whose structures compare to the individual cyanogenic glycoside, in that the nitrile moiety has been changed over into an essential carboxamide gathering. These amides were only found in air-dried leaves though new material of similar plants don't yield distinguishable measures of amides, just a cyanogenic glycoside (Jaroszewski et al., 2002; Sendker and Nahrstedt, 2010). The cyanogenic amide glycoside 12 at Rt 34.9 min displayed protonated atom at m/z 332.3. Dhurrin (4-hydroxymandelamide glucoside) is a prunasin subordinate with an additional hydroxyl bunch on benzoyl gathering (Seigler et al., 2005). As per Sendker and Nahrstedt (2010), dhurrinamide displayed a protonated particle in HR-ESI-MS at m/z 330.1180, having the sub-atomic equation C14H19NO8. Prunasinamide displayed a protonated atom in HR-ESI-MS at m/z 314.1232, having the sub-atomic recipe C14H19NO7.For compound 12, the MS/MS range of protonated particle at m/z 332.3 demonstrated a base top at m/z 314.2 (M+H-18)+, and a section particle at m/z 270.2 that relate to the loss of (CONH2) gathering (44 u) from piece at m/z 314.2 and at m/z 252.2 that compare to the loss of water from piece at m/z 270.0 (Table 4). Compound 12 was probably portrayed as dhurrinamide subsidiary.

Table 4: Constituents found in hydroethanolic extract of *Passiflora quadrangularis*.

Compound	RT (min)	UVλmax (*nm*)	$(ESI)^+$ (*m/z* abundance	$(ESI)^-$ (*m/z*abundance)	Proposed structure	References
10	20.9	270, 350	MS: $(M+H)^+$ 581.1 $(M+Na)^+$ 603.1	MS: 578.9; MS/MS: 458.7 (60), 428.7 (70),	orientin-2¨-*O*-xyloside	Ferreres et al., 2007
				356.7 (50), 326.8 (100)		
6	21.7	270, 340	MS: $(M+H)^+$ 595.1 $(M+Na)^+$ 617.0	MS: 593.0; MS/MS: 412.8 (100), 293.0 (30)	vitexin-2”-*O*-glucoside	Ferreres et al., 2007
7	22.3	270, 340	MS: $(M+H)^+$ 565.1	MS: 563.0; MS/MS: 412.7 (100), 293.0 (30)	vitexin-2”-*O*-xyloside	Ferreres et al., 2007
11	32.4		MS: $(M+H)^+$ 304.1		gynocardin	Jaroszewski et al., 2002
12	34.9		MS: $(M+H)^+$ 332.2; MS/MS: 314.2 (100), 270.2 (50), 252.2 (30)		dhurrinamide derivative	Sendker & Nahrstedt, 2010
13	36.3		MS: $(M+H)^+$ 961.0 $(M+Na)^+$ 983.0	MS: 959.2; MS/MS: 797.0 (100)	cyclopassifloic acid D arabinosyl-diglucoside	Yoshikawa et al., 2000a, b
14	36.9			MS: 989.4; MS/MS: 943.3 (100)	cyclopassifloside III rhamnoside	Yoshikawa et al., 2000a, b
15	37.2			MS: 843.3; MS/MS: 797.0 (100)	cyclopassifloside III	Yoshikawa et al., 2000a, b
16	37.8		MS: $(M+H)^+$ 945.0; $(M+Na)^+$ 967.0	MS: 943.3; MS/MS: 781.0 (100)	cyclopassifloic acid D-arabinosyl-rhamnosyl-glucoside	Yoshikawa et al., 2000a, b
17	38.2			MS: 1105.1	quadranguloside	Orsini et al., 1987, 1986; Reginatto et al., 2004
18	39.4			MS: 843.3; MS/MS:	cyclopassifloside III	Yoshikawa et al.,

				797.0 (100)	isomer	2000a, b
19	40.8			MS: 827.0	cyclopassifloic acid B rhamnosyl glucoside	Yoshikawa et al., 2000a, b

Pharmacological Activity

Antimicrobial activity

In Passiflora species, a significant number of the compound parts of energy bloom (passicol) have antimicrobial action (Nicolls, 1970; Birner and Nicolls, 1973; Nicolls et al., 1973).The ethanol leaf extricates displayed variable degrees of antibacterial movement against P. putida, V. choleraeand moderate action was noted in S. flexneri and S. pyogenes individually. The CH3)2CO separates showed solid to direct movement against V. cholerae followed by P. putida, S. flexneri and S. pyogenes. The ethanol natural product extricates indicated moderate movement against the bacterial pathogens in particular V. cholerae, P. putida, S. pyogenes and S. flexneri. Among the two sections tried, the leaf separates showed preferable antibacterial action over the organic products (Afolayan and Meyer, 1997). The prior reports concentrated on the antibacterial properties of Passiflora species by various techniques. Perry et al. (1991) detailed the antibacterial movement of Passiflora which has got action against Pseudomonas tetrandra, Escherichia coli, Bacillus subtilis and Pseudomonas aeruginosa.

The antibacterial properties of leaf and natural product (ethanol and CH3)2CO) concentrates of Passiflora foetida (smelling enthusiasm blossom) were screened against four human pathogenic microscopic organisms that is Pseudomonas putida, Vibrio cholerae, Shigella flexneri and Streptococcus pyogenes utilizing great in agar strategy. The outcomes indicated the leaf extricate having momentous movement against every single bacterial pathogen contrasted with organic products (Mohanasundari et al., 2007). Perry et al. (1991) likewise found that 4-hydroxy-2-cyclopentenone was cytotoxic to leukemia cells. The 4-Hydroxy-2-cyclopentenone is answerable for the counter bacterial movement of a concentrate of leaves from Passiflora tetrandra against the microscopic organisms: E. coli, B. subtilis and P. aeruginosa, throughout this analysis. Apigenin and luteolin were seen as poisonous against the methicillin-safe microorganisms, S. aureus (Sato et al., 2000). Nicolls (1970) portrayed the nearness of antifungal action in plants of the Passifloraceae, especially in the Passiflora types of P. caerulean (energy bloom), P. edulis (purple enthusiasm organic product), and P. mollissima (banana enthusiasm natural product). In parasitic molds and yeasts, an actinomycete, gram-positive and gram negative microscopic organisms were tried subjectively with an antimicrobial substance, here called "Passicol," acquired from Passiflora species.

A wide scope of living beings were discovered defenseless to Passicol (Nicolls et al., 1973). The rough Passicol removes in phosphate cradle (pH 7) arrangements were tried against Trichophyton mentagrophytes (ringworm) and Candida albicans developing at 28°C. The organisms Microsporum and Trichophyton required extra measures of concentrate on each for 2 or 3 days as a result of their moderate development. There is nearness of Acetylenic mixes which hinder germination or mycelial development of certain parasites (Allen and Thomus, 1971; Lechner et al., 1970).

Cell reinforcement action

P. nitida leaf and P. palmeri stem separates were portrayed by a high cancer prevention agent power that relates with high catechin and o-diphenol substance and shows antimicrobial action. In any case, P. foetida leaf removes, which likewise show high antimicrobial action, have a low cell reinforcement force and low measures of o- diphenol and catechin. P. tenuifila leaves show exceptionally high measures of flavones and complete phenols, however middle degrees of cancer prevention agent action, presumably because of the lower commitment of o- diphenols and gallocatechins comparative with the phenol content (Bendini et al., 2006). The cancer prevention agent movement of leaf and stem concentrates of P. edulis was resolved utilizing the 1, 1-diphenyl-2- picrylhydrazyl (DPPH) free radical rummaging examine (Blois, 1958). DPPH offers an advantageous and precise strategy for titrating the oxidizable gatherings of common or manufactured enemies of oxidants (Cao et al., 1997). The unrefined concentrates (leaf and stem) of P. edulis were blended in with 95% methanol to set up the stock arrangement (10 mg/100 mL).

All the four concentrate displayed potential cell reinforcement movement (Table 1). The chloroform concentrate of stem rummaged half DPPH free radical at the most reduced inhibitory focus (IC50: 51.28 µg/ml). The oil ether concentrate of stem additionally uncovered solid cancer prevention agent action (IC50: 54.01 µg/ml). Then again, oil ether and chloroform concentrates of leaf demonstrated cancer prevention agent movement with IC50 of 58.88 and 56.85 µg/ml, individually. These outcomes signify the nearness of cell reinforcement standards in the extractives. P. nitida and P. palmeri likewise indicated high cell reinforcement movement. P. tenuifila and P. coriacea exhibited cancer prevention agent power yet not antimicrobial action. Regular cancer prevention agents got from plant separates have been professed to have different natural exercises including vasodilatatory, calming, anticancerogenic, antiviral, and antibacterial impacts (Halliwell et al., 1995; Halliwell, 1997).

Maltol, a sweet-smelling compound, shows cell reinforcement properties while hindering the oxidation of hexanal by 84% (Lee and Shibamoto, 2000b). Maltol

was likewise demonstrated to be liable for the advancement of dialysis-related sicknesses in patients with renal brokenness and may assume a job in the improvement of certain neurodegenerative issue. Maltol was demonstrated to be a solid enhancer of aluminum collection in rodent cerebrum and blood (Van-Ginkel et al., 1993).

Cytotoxic movement

Brackish water shrimp lethality bioassay is generally utilized in bioassay for bioactive mixes (Meyer et al., 1982; Zhao et al., 1992). Basic zoological living being (Artemia salina) was utilized as a helpful screen for the screening. The eggs of the saline solution shrimp werecollected and incubated in counterfeit seawater (3.8% NaCl answer) for 48 h to develop shrimp called nauplii. The cytotoxicity examine was performed on saline solution shrimp nauplii utilizing Meyer strategy (Meyer et al., 1982).

The lethality of the unrefined oil ether and chloroform concentrates of P. edulis leaf and stem to salt water shrimp was resolved on A. salina after 24 h of presentation of the examples with the positive control, vincristine sulfate. This method was applied for the assurance of general poisonous property of the plant extractive. The LC50 esteems for standard vincristine sulfate and concentrates of P. edulis were introduced in Table 2. The chloroform concentrate of stem indicated the most reduced LC50 esteem and the oil ether concentrate of leaf demonstrated most noteworthy worth which was 6.63 and 11.17 µg/ml, individually.

Calming movement

The watery leaves concentrate of Passiflora species showed intense mitigating activity in the exploratory model in vivo (Beninca et al., 2007). The fluid leaves concentrate of P. edulis have a huge calming movement on mice (Vargas et al., 2007). The fundamental organization of P. edulis showed articulated calming activities, portrayed by hindrance of leukocyte inundation to the pleural cavity and related with stamped bar of myeloperoxidase, nitric oxide, TNFa and IL-1a levels in the intense model of aggravation brought about by intra pleural infusion of mice. In one trial, P. edulis was progressively viable in stifling the TNFa and IL-1a levels than dexamethasone (Montanher et al., 2007). P. edulis in this manner, might be a wellspring of new restorative competitors with a range of movement like the current calming steroids, for example, dexamethasone.

Hostile to tumor movement

Organic product's decoction of various passiflora species has been assessed for the restraint of action of gelatinase lattice metalloproteinases (MMP-2 and MMP-9). Two metallo-proteases were engaged with the tumor attack, metastasis and angiogenesis. Water concentrate of P. edulis, at various fixations was hindered by the catalysts (Puricelli et al., 2003).

Hemolytic movement

Plants utilized in customary medication are rich wellsprings of hemolysins and cytolysins, which are likely bactericidal and anticancer medications (Dhawan et al., 2001). The current investigation shows just because the nearness of a hemolysin in the leaves of Passiflora quadrangularis L. This hemolysin is heat steady, impervious to trypsin treatment, has the ability to foam, and acts quickly. The hemolysin movement is portion subordinate, with an incline more noteworthy than 1 out of a twofold logarithmic plot (Petry et al., 2001). Polyethylene glycols of high atomic weight had the option to lessen the pace of hemolysis, while liposomes containing cholesterol totally repressed it. Conversely, liposomes containing phosphatidylcholine were incapable. The Passiflora hemolysin extraordinarily expanded the conductance of planar lipid bilayers containing cholesterol however was inadequate in without cholesterol bilayers. Progressive extraction of the unrefined hemolysin with n-hexane, chloroform, ethyl acetic acid derivation, and n-butanol brought about a 10-overlay decontamination, with the hemolytic movement being recuperated in the n-butanol portion (Shao et al., 1996).

The information recommend that layer cholesterol is the essential objective for this hemolysin and that few hemolysin atoms structure a huge transmembrane water pore (Nippon, 1993). The properties of the Passiflora hemolysin, for example, its foaming capacity, positive shading response with vanillin, specific extraction with n- butanol, HPLC profile, cholesterol-subordinate film powerlessness, development of a steady mind boggling with cholesterol, and fast erythrocyte lysis energy demonstrate that it is presumably a saponin (Lutomski and Malek, 1975). A wide range of types of passiflora contain the saponins. Saponins are normal constituents of plants that display a wide range of natural exercises (Birner and Nicolls, 1973; Perry et al., 1991) and as often as possible have hemolytic, cytolytic and bactericidal exercises (Rao and Song, 1995; Li et al., 2005).

Moreover, saponins additionally have plasma cholesterol-bringing down action (Chandel and Rastogi, 1980) and are broadly used as a part of powerful adjuvants to help the safe reaction, primarily when complexed mind

USES

Traditional uses

The utilizations here depend on convention or logical hypotheses of Passiflora species. A portion of these conditions are conceivably genuine, and ought to be assessed by a certified medicinal services supplier. These conventional uses incorporates liquor withdrawal, antibacterial, against seizure, hostile to fit, Spanish fly, asthma, consideration shortfall hyperactivity issue (ADHD), copies (skin), disease, interminable agony, hack, chronic drug use, Epstein-Barr infection, contagious contaminations, gastrointestinal uneasiness

(anxious stomach), Helicobacter pylori disease, hemorrhoids, hypertension, menopausal manifestations (hot flashes), nerve torment, torment (general), skin aggravation, strain and wrinkle avoidance (Dhawan et al., 2002).

Modern uses

Various types of Passiflora are developed outside their regular range in light of their excellent blossoms. P. incarnatea L. usually utilized in numerous home grown cures is notable for its calming properties, while a few different animal varieties are developed for the creation of natural product juice (P. edulis, P. quadrangularis, P. ligularis) (Bendini et al., 2006). Passicol can likewise be delivered from natural product skins of the purple enthusiasm organic product, which are squander items from the assembling of energy organic product juice. The subsequent rich juice, which has been known as a characteristic concentrate, can be improved and weakened with water or different juices (particularly orange or pineapple), to make cold beverages.

In South Africa, energy natural product juice is mixed with milk and an alginate; in Australia the mash is added to yogurt.

In Brazil, the organic products are ordinarily known as "maracuja" and the natural product mash yields a tasty juice which is traded to the few nations (Machado et al., 2008; Dhawan et al., 2004). Passiflora is accessible available in a scope of various arrangements, chiefly in tablet structure (500 mg) of the dried herb for oral use or by mixture, as fluid concentrate or as color (Fisher et al., 2000). Notwithstanding variety in planning, a few unique makers produce definitions of passi-verdure, making it considerably progressively hard to analyze the adequacy of the particular arrangements. Maypop (P. incarnata) departs and roots have a long history of utilization among Native Americans in North America and were adjusted by the settlers. The new or dried leaves of Maypop are utilized to make an implantation, a tea that is utilized to treat a sleeping disorder, insanity, and epilepsy. It is likewise esteemed for its painkilling properties. Maracujá (P. edulis) and a couple of different animal varieties are utilized in Central and South America for comparable purposes. P. Incarnata has aromatase properties because of the nearness of two flavonoid mixes: chrysin and benzoflavone moiety, the last being increasingly powerful (Dhawan et al., 2002). Numerous species have been found to contain betacar-boline, harmala and alkaloids which are MAOIs with energizer properties. The blossom and natural product has hints of aromatase inhibitor properties as it were. Passiflora quadrangularis has an antihelminthic activity and is additionally as often as possible used to treat bronchitis, asthma, and challenging hack (Mowrey, 1993). It has even been licensed for treatment of diabetic inconveniences and hypertension (Nippon, 1993). Plants utilized in customary people medication have a huge wellspring of pharmacologically dynamic compo-nents, including hemolysins and cytolysins, likely bactericidal and anticancer medications (Chandel and Rastogi, 1980; Rao and Sung, 1995; Shao et al., 1996).

Clinical Applications

Hypersensitivities barely any reports of the utilization of energy bloom items on unfavorably susceptible responses, asthma, aggravated sinuses, skin rashes, and skin vein irritation (vasculitis) have been accounted for in the accessible writing. It is accepted that a few responses may have been brought about by pollutions in mix items, not by energy bloom itself (Giavina et al., 1997).

CONCLUSION

The restorative viability of the variety Passiflora exten-sively utilized in Indian System of Medicine has been es-tablished through current testing and assessment (pre-clinical and clinical preliminaries) in various illness condi-tions. These examinations place this indigenous medication a novel possibility for bioprospection and medication improvement for the treatment of such illnesses as tension, insom-nia, spasm, sexual brokenness, hack, malignant growth, postmenopausal disorder, hypertension and so on. The me-dicinal uses of these plants, innumerable possibili-ties for examination despite everything stay in generally fresher regions of its capacity. Thus, phytochemicals and min-erals of these plants will empower to abuse its therapeu-spasm use. In this manner further examinations might be done to demonstrate the capability of these plants. This species is be-coming the jeopardized species now so more work should be possible on horticultural and climatic conditions to develop this plant.

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