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## IR SPECTROSCOPY ANALYSIS OF ETHANOL EXTRACT OF TRIDAX PROCUMBENS.

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### Abstract:

*Plants constitute a vital component of the biodiversity they play a key role in maintaining Earth's environmental equilibrium and ecosystem stability. Tridax Procumbens is one of the most common plants used by rural and tribal communities to cure various health ailments. The plant contains various chemicals which are useful for further studies. In present analysis we detect the chemicals present in Tridax procumbens ethanol extract by the help of TLC.*

### KEY WORDS:

*Tridax Procumbens, plant leaves, analysis, extract and TLC etc.*

### INTRODUCTION

In India, Ayurvedic system of medicine has existed for over four thousand years. From ancient literature it is evidence that the various parts of the plants were used in Siddha, Ayurveda and Unani medicines for the treatment of diseases of human beings. [1] 74% of the plant derived medicines have a modern indication that correlates with their traditional, cultural and sometimes ancient uses. Hence, Traditional medicine is an important source for the development of novel chemotherapeutic agents which are less toxic and more economic. [2]

The demand on plant based therapeutic seems to be increasingly in both developing and developed countries due to the growing recognition that they are natural products, being non-narcotic, having no side effects, easily available at affordable prices and sometimes the only source of health care available to the poor. Medicinal plant sector has traditionally occupied an important position in the socio-cultural, spiritual and medicinal arena of rural and tribal lives of India. The major area of drugs from medicinal plants includes disease conditions for which modern drug are either unavailable or unsatisfactory. [3]

The food industry uses chemical food preservatives as the main way to inhibit microbial growth. As safety concern with chemical preservatives have received extensive attention worldwide, natural preservative derived from natural resources such as herbal plants have high potential as food preservatives for food industry. Extracts from many plants have been known to possess anti microbial effects and are used in food preservation and for medicinal purposes. [4]

The ethno pharmacological and traditional use of plants often results in the discovery of new biologically active molecules. [5] Traditionally medicines using plant extract continue to provide health coverage for over 80% of the world's population, especially in the developing countries. Even today, Tribal are certain local communities in India still practice herbal medicine to cure a variety of skin diseases and disorders. The efficacy of the plants in curing various skin infections has been well established and a large volume of work has been done in this field by researcher in India and abroad. [6]

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## IR SPECTROSCOPY ANALYSIS OF ETHANOL EXTRACT OF TRIDAX PROCUMBENS.

*Tridax Procumbens* is commonly known as 'Common grass' [7] or 'Common button' or 'Coat button' [8] because of appearance of flower, ghamra in hindi [9] ,cadillo chisaca in Spanish [10].

*Tridax Procumbens* is common plant found in Tropical areas of all Countries, growing primarily during rainy season. [11] Infact, the plant is native of tropical America and naturalized in tropical Asia, Africa, Australia and India.



Figure : *Tridax Procumbens* Plant

### MATERIALS AND METHODS:-

#### Plant collection:-

*Tridax Procumbens* Leaves were collected from different area of Indore city like Holkar science college campus, Bhawarkua, Residency area, DAVV campus and Rajendra Nagar District indore (M.P.) India in January 2014.

#### Method :-

The plant leaves of *Tridax Procumbens* was packed in the Soxhlet apparatus and extracted with Ethanol as a solvent. The extraction was carried out for 72 hrs at 79°C temperature. Later on, the extract was kept over the water bath for getting pure plant leaves extract. After the formation of extract TLC (Thin layer chromatography) method was performed for separation of medicinal compounds and by the help of IR Spectroscopy we can interpret the compounds.



Figure : Ethanol extract



Figure : TLC of Ethanol Extract

IR SPECTROSCOPY ANALYSIS OF ETHANOL EXTRACT OF TRIDAX PROCUMBENS.

RESULT AND DISCUSSION:-

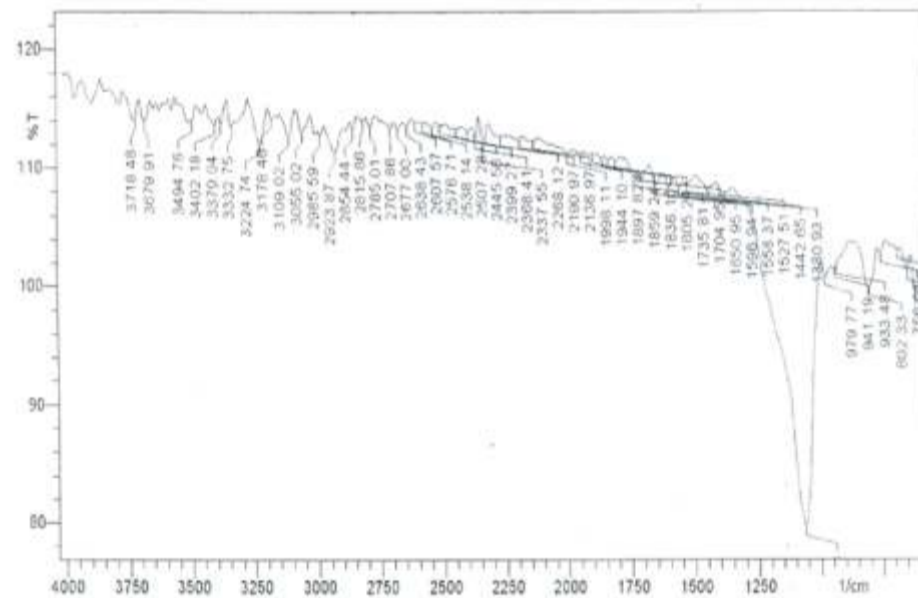
Phytochemical sometimes are non-nutritive chemicals that are present in plants showed protective or diseases preventive properties.

Peak table of Ethanolic extract (Yellow Spot)

Peak Number	Begin [1/cm]	Max [1/cm]	End [1/cm]	Absolute Height [%T]	Peak Area (%)
1	609.46	617.18	632.61	99.22	0.8
2	632.61	648.03	671.18	101.2	0.6
3	671.18	686.61	725.18	103.06	0.1
4	732.9	756.04	763.76	102.71	0.2
5	763.76	802.33	856.33	99.93	3.5
6	925.76	933.48	933.48	101.77	0
7	933.48	941.19	948.91	101.5	0
8	956.62	979.77	987.48	100.87	0.3
9	995.2	1064.63	1342.36	79.64	68.3
10	1342.36	1380.93	1411.79	107.96	0.5
11	1411.79	1442.65	1488.94	108.26	0.7
12	1488.94	1527.51	1535.22	108.65	0.1
13	1542.94	1558.37	1573.8	108.49	0.2
14	1573.8	1596.94	1620.09	108.28	0.5
15	1620.09	1650.95	1674.09	108.56	0.8
16	1674.09	1704.95	1712.66	109.63	0.2
17	1712.66	1735.81	1766.67	109.24	0.6
18	1782.1	1805.24	1820.67	110.68	0.1
19	1820.67	1836.1	1851.53	110.72	0.1
20	1851.53	1859.24	1882.39	110.87	0.1
21	1882.39	1897.82	1928.67	111.17	0.1
22	1928.67	1944.1	1974.96	111.18	0.1
23	1974.96	1998.11	2106.11	111.08	0.8
24	2113.83	2136.97	2175.54	112.32	0.3
25	2175.54	2190.97	2229.55	112.36	0.2
26	2237.26	2268.12	2306.69	112.61	0.5
27	2322.12	2337.55	2345.27	111.31	0.7
28	2352.98	2368.41	2383.84	112.36	0.5
29	2383.84	2399.27	2422.41	113.06	0.2
30	2422.41	2445.56	2484.13	113.3	0.3
31	2484.13	2507.28	2514.99	113.62	0.1
32	2522.71	2538.14	2561.28	113.43	0.2
33	2561.28	2576.71	2592.14	113.74	0
34	2592.14	2607.57	2615.28	113.87	0.1

**IR SPECTROSCOPY ANALYSIS OF ETHANOL EXTRACT OF TRIDAX PROCUMBENS.**

35	2623	2638.43	2653.86	113.52	0.2
36	2653.86	2677	2684.71	113.29	0.2
37	2692.43	2707.86	2761.86	113.44	0.5
38	2761.86	2758.01	2800.44	113.36	0.4
39	2800.44	2815.86	2831.29	114.01	0.1
40	2839.01	2854.44	2862.15	113.18	0.3
41	2869.87	2923.87	2962.44	111.3	2.2
42	2970.16	2985.59	3024.16	112.64	1
43	3024.16	3055.02	3078.16	113.01	1.2
44	3085.88	3109.02	3139.88	112.63	1.4
45	3039.88	3178.46	3186.17	114.15	0.3
46	3193.88	3224.74	3263.32	111.95	2.6
47	3271.03	3332.75	3355.89	113.47	2.8
48	3355.89	3379.04	3386.75	113.62	0.4
49	3386.75	3402.18	3433.04	113.57	0.6
50	3479.33	3494.76	3556.48	113.75	1.6
51	3656.77	3679.91	3703.05	113.89	1
52	3703.05	3718.48	3757.06	114.02	1.3



**Figure : IR of Ethanol Extract (Yellow spot)**

**IR Discussion of Ethanolic Extract :-**

IR of Ethanolic Extract were taken in Choksey laboratory Indore on Instrument FTIR (Fourier transform) infrared spectrometer. A compound at 3224  $\text{cm}^{-1}$  to 3394  $\text{cm}^{-1}$  clearly indicates the presence of alcohol and phenol group. The other peaks at 1704  $\text{cm}^{-1}$  to 1859  $\text{cm}^{-1}$  is due to carboxylic acid, the peak at 2167  $\text{cm}^{-1}$  to 2206  $\text{cm}^{-1}$  is due to alkynes, the peak at 1627  $\text{cm}^{-1}$  to 1628  $\text{cm}^{-1}$  is due to alkenes and the peaks from 2850  $\text{cm}^{-1}$  to 3000  $\text{cm}^{-1}$  is due to Alkanes.

**CONCLUSION :-**

The present analysis revealed the presence of carboxylic acid, alkynes, alkenes, alkanes, phenol and

#### IR SPECTROSCOPY ANALYSIS OF ETHANOL EXTRACT OF TRIDAX PROCUMBENS.

alcohol in the ethanol extract. From IR spectroscopy we confirmed that the extract contains different chemicals when we interpret IR graph.

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