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Novel herbal formulation with combination of chloroform extract of lagerstroemia speciosa and hydro alcoholic extract coccinia grandis for treatment of mouth ulcer

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Abstract
The chloroform extract of L. speciosa and hydro alcoholic extract of coccinia grandis we made available these extracts in tablet formulation aim beyond that many formulation used for treatment of mouth ulcer but none of herbal tablet formulation available such combination, as chloroform extract of L. speciosa shows excellent antioxidant activity and alcoholic extract of coccinia grandis contain lupeol & taraxerone these ingredients gives potent wound healing & anti-inflammatory activity. So we are formulated herbal tablet formulation which is mainly used for mouth ulcer also we evaluated tablet formulation parameter successfully.

Keywords: mouth ulcer, herbal tablet, coccinia grandis, lagerstroemia speciosa etc

Introduction
Lagerstroemia speciosa is an herbal plant broadly marketable for decorative purposes and as kerb trees. This class is much esteemed in the horticulture marketplace for its great, impressive, bright pink to lavender flowers [1]. Lagerstroemia speciosa all parts of this tree discovered that it enclosed steroids, terpenoids, glycosides,α-amino acids, saponins, starch, alkaloids, carbohydrates, phenolic compounds, organic acids, flavonoids, reducing sugars, tannins and various other active metabolites. Lagerstroemia speciosa showing many Pharmacological activities for example antimicrobial, antioxidant, anticancer, antidiabetic [2].
Hydro alcoholic extract of coccinia grandis contain lupeol & taraxerone as active ingredients for mainly wound healing with anti-inflammatory activity [3]. Ixora coccinea and alcoholic extract of coccinia grandis combined formulation showed major activities antibacterial & antioxidant [4]. So we decided prepare tablet formulation that can stable in any climatic condition for treatment of mouth ulcer.

Material and Method
Combined tablet formulation of chloroform extract of L. *Speciosa and Hydro-alcoholic extract of Coccinia grandis*

Table 1: Combined Formulation Ingredient details

Sr. No.	Ingredient	Weight/Tablet
1.	Spray dried powder of *L.Speciosa*	25
2.	Coccinia grandis	75
3.	Microcrystalline cellulose	100
4.	Pre gelatinized starch	25
5.	Magnesium stearate	15
6.	Talc	10

Table 2: List of Ingredient with Manufactured formulation

Sr. No	Ingredient	Manufactured By
1.	Hydro-alcoholic extract of *Coccinia grandis* fruit	Green Chwem Herbal Bangalore
2.	Microcrystalline cellulose	SDFCL
3.	Pre gelatinized starch	SDFCL
4.	Magnesium stearate	SDFCL
5.	Talc	SDFCL

Organoleptic Characterization
The spray-dried powders of the drug was properly characterized for their appearance, color, taste and odor.

Table 3: Organoleptic characterization of L.Speciosa and coccinia grandis

Sr. No.	Parameter	*L.Speciosa*	*coccinia grandis*
1.	Appearance	Powder	Powder
2.	Colour	Dark grey	Grey
3.	Taste	Sour	Sweetish
4.	Odour	Sweetish	Fruity

Ash Values

Table 4: Ash values of hydro alcoholic extract of coccinia grandis and L.Speciosa

Sr. No.	Parameter	Total ash % w/w	Acid insoluble ash % w/w	Water soluble ash % w/w
1.	*coccinia grandis*	6.3±0.3	0.016 ± 0.003	1.79 ± 0.04
2.	*L.Speciosa*	6.8±0.3	0.014 ± 0.003	1.80 ± 0.04

Experimental Work

Extraction

Coccinia grandis alcoholic extract and L. Speciosa choloro form extract extracted as per literature [2, 4]

Direct compression

Direct compression technique used for small-scale preparations of above combined formulation. Tablets were punched using Pharma N Pack Eight station punching machine. Microcrystalline cellulose (PH 101), MCC is non-hygroscopic as a diluent Magnesium stearate was used as a diluent and lubricants and pregelatinized starch (PGS) was also added.The materials were mixed with the binder resolution, that was little by little. Then Talc and Magnesium stearate were mixed in it. Tablets were punched with Pharma N Pack Eight station punching machine. The punching machine was cleansed properly. The punching machine was adjusted for the desired weight (per tablet) and hardness employing a tiny amount of the mix. Talc as lubricant and magnesium stearate quantity was decided after various combinations of these ingredients, which gave the good flow at hopper and not causing the problem of capping, lamination or sticking.The tablets of fraction of L. Speciosa and Coccinia grandis were combined. Each prepared tablets wt. 250 mg of dose individually.

Results and Discussion

Evaluation of Prepared Tablets

Weight variation and drug content

Table 5: Weight variations of prepared antdiabetic tablets

S. No.	*Drug*	Weight variation
1.	coccinia grandis and L.Speciosa Tab	3.40%

Dissolution testing

Table 6: Tablet Formulation UV results

Sr. No	Concentration (ug/ml)	Absorbance
1	10	0.445
2	20	0.509
3	30	0.626
4	40	0.712
5	50	0.824

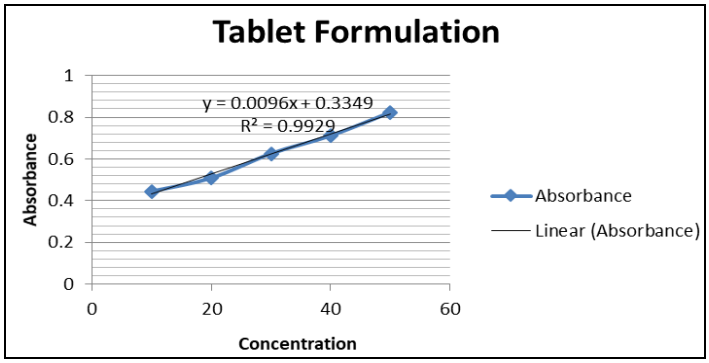

Fig 1: Tablet formulations Calibration Curve of UV

Hardness Study

Table 7: Hardness test study details

Formulation Code	Hardness (kg/cm^2)					
	T1	T2	T3	T4	T5	Mean
Coccinia grandis and L.Speciosa Tab	5.3	5.4	5.3	4.9	4.6	4.1

Friability Study

Table 8: Friability of test report

S. No.	*Drug*	*Friability (%)*
1.	Coccinia grandis and L.Speciosa Tab	0.14%

Disintegration Time Study

Table 9: Disintegration time details of prepared tablets

Formulation code	Disintegration time (min.)					
	T1	T2	T3	T4	T5	Mean
coccinia grandis and L.Speciosa Tab	32.0	31.0	25.8	28.9	31.0	29.74

Conclusion

The chloroform extract of L. speciosa and hydro alcoholic extract of coccinia grandis these extracts in combination used in tablet formulation and above formulation was formulated successfully for treatment of mouth ulcer. Formulated product passes all the evaluation parameter such as Weight variation and drug content is 3.40%, formulations Calibration Curve equation is $Y=0.0096x+0.3349$ and $R^2= 0.99$, Hardness, Friability and Disintegration time all these parameters are within limit.

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