SUMMARY

1. There were 10 codes isolated or derived from the aerial parts of Ocimum basilicum Linn. which were subjected to various pharmacological, biochemical and toxicological studies. The following are the details of the codes,

- **TAE** = Total alcoholic extract
- **TAQ** = Total aqueous extract
- **PET** = Petroleum ether extract
- **CHL** = Chloroform extract
- **DEE** = Diethyl ether extract
- **ACE** = Acetone extract
- **ETH** = Ethanolic extract
- **MET** = Methanolic extract
- **SAQ** = Aqueous extract
- **TGL** = Total glycosidal extract

2. Three phytochemicals that were reported to be present by earlier workers were also simultaneously subjected to the various experiments mentioned above along with 10 codes. The codes for these phytochemicals are LIN = Linalool, MCN = Methyl cinnamate and MCL = Methyl chavicol.

3. All the codes except codes TAQ, PET, MET, ETH and TGL all other codes produced significant cardiotonic activity, which was confirmed by their relative imperviousness against blockade caused by
propranolol and nifedipine. Their cardiotonic activity and associated changes in the various cardiac enzymes parameters such as \( \text{Na}^+/\text{K}^+ \) ATPase, \( \text{Ca}^{2+} \) ATPase and \( \text{Mg}^{2+} \) ATPase were found to be similar to those produced by cardiac glycosides such as digoxin.

4. The codes TAQ and PET produced \( \beta \)-adrenergic stimulant effects.

5. The codes ETH and TGL produced cholinomimetic effects.

6. The phytochemicals LIN and MCL were found to possess cardiotonic activity.

7. The codes derived from the aerial parts of \( Ocimum basilicum \) Linn. elicited vasodilator effect that was manifested due to combination of cholinomimetic effect, \( \beta \)-adrenergic stimulant effect and a direct vasodilator effect.

8. Codes TAQ, ETH and TGL showed a stimulant action of smooth muscle in isolated rat colon, rat uterus, guinea pig vas deferens, tracheal chain and ileum preparations, which were contributed mainly by the stimulation of cholinceptive receptors.

9. The codes PET, LIN and MCN significantly inhibited the histamine-induced contraction suggesting the presence of anti-histaminic principles in the \( Ocimum basilicum \) Linn.

10. Nearly all codes possess significant anti-inflammatory effects of acute as well as sub acute.
11. Significant mast cell stabilising effects were elicited by all the codes except ACE and TGL.

12. Analgesic activity was exhibited by the codes PET, ACE, ETH, SAQ and TGL derived from Ocimum basilicum Linn.

13. Except the codes ACE, ETH, MCL and SAQ all the other codes elicited antipyretic activity.

14. CNS depressant effects were produced by the codes TAQ, CHL, DEE, ACE, ETH, SAQ, LIN and MCL, whereas the codes TAE and MCN produced CNS stimulant effect. No change was observed in the muscular co-ordination.

15. In vitro antioxidant studies (FTC and TBA) suggest that most of the codes possess antioxidant activity among which the codes TAE, PET, CHL and DEE produced maximum antioxidant activity.

16. Anti oxidant and associated cardio and other tissue protective activity was elicited by all the codes except the codes CHL, TGL and MCL.

17. The codes CHL, TGL and MCL was shown to possess toxic potential which was evident from the toxicity studies and elevated serum marker enzymes.

(Vide Table: Summary of the Predominent Pharmacological Effects elicited by the codes derived from the aerial parts of Ocimum basilicum Linn.)
### Table: Summary of the Predominant Pharmacological Effects

| Toxic Effects | Anti-oxidant | CNS depressant | CNS stimulant | Mast cell protection | Antipyretic | Analgesic | Anti-inflammatory | Anti-histaminergic | Histaminergic | Cholinergic | Vasodilator | β-adrenergic | Ionic | Cardio |
|---------------|--------------|----------------|---------------|----------------------|-------------|-----------|------------------|-------------------|---------------|------------|------------|------------|-----------|-------|--------|
|               | d            | d              | d             | d                    | d           | d         | d                | d                 | d             | d          | d          | d          | d        |        |        |
|               |              | d              | d             | d                    | d           | d         | d                | d                 | d             | d          | d          | d          | d        |        |        |
|               | d            | d              | d             | d                    | d           | d         | d                | d                 | d             | d          | d          | d          | d        |        |        |
|               |              | d              | d             | d                    | d           | d         | d                | d                 | d             | d          | d          | d          | d        |        |        |
|               | d            | d              | d             | d                    | d           | d         | d                | d                 | d             | d          | d          | d          | d        |        |        |

### Notes:
- **d**: Present
- **MCL**: Methylcysteine
- **MCN**: Methionine
- **LIN**: Lysine
- **TDL**: Tryptophan
- **SAO**: Serine
- **MET**: Methionine
- **ETH**: Ethanol
- **ACE**: Angiotensin-Converting Enzyme
- **DEE**: Dehydroepiandrosterone
- **CHL**: Chlorophyll
- **FET**: Fetal Bovine Serum
- **TAO**: Tyrosine
- **TAE**: Threonine
- **CNS**: Central Nervous System
- **α-adrenergic**: Alpha-adrenergic
- **β-adrenergic**: Beta-adrenergic
- **Cardio**: Cardiovascular
- **Ionic**: Ions