All the required experimental proceedings were planned systematically to achieve the target aims and objectives and the work flow was as mentioned below.

Assessing the suitability of using female rats for episodic memory which is the most commonly encountered cognitive complication in chemobrain affecting the activities of daily living (ADL)

- Preliminary studies for assessing episodic memory retention
- Evaluation of gender difference in the extent of episodic memory
- Assessing experimental validity of female rats by using positive standard, donepezil

Assessment of test flavonoids, NAR and RUT for their intrinsic memory enhancing (nootropic) potential for episodic memory in animal models of dementia using female rats

- Naturally (Time delay)-induced long-term memory deficits model
- Drug (scopolamine)-induced short-term memory deficits model
- Assessment of locomotor activity

Evaluation of DOX for its chemobrain-inducing potential in healthy female rats upon clinically relevant DOX chemotherapy cycles

- Development of animal model for DOX-induced chemobrain
- Dose schedule fixation for DOX chemo cycles
- Assessment of episodic memory using ORT
- Assessment of spatial learning and memory using MWM
- Locomotion assessment

Evaluation of NAR and RUT for their protective potential against DOX-induced chemobrain in healthy female rats

- Evaluation of episodic memory using ORT
- Assessment of spatial memory using MWM task
- Biochemical and histopathological analysis

Validation of N-nitroso, N-methyl urea (NMU)-induced human relevant mammary carcinoma in female rats

- Fixation of dose, route of administration, frequency and strain etc.
- Development of mammary ductal adenocarcinoma in situ
- Histopathological confirmation of mammary tumor
All the above mentioned elements of plan of work are dealt in detail as individual chapters in the later sections.