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ABBREVIATIONS

5-HT	:	5-hydroxytryptamine
AARE	:	<i>Aplotaxis auriculata</i> rhizome extract
AchE	:	Acetylcholine esterase
ACTH	:	Adrenocorticotropic hormone
AHA	:	American Heart Association
ADMET	:	Absorption, Distribution, Metabolism, Excretion and Toxicity
AS	:	Acute Stress
ATP	:	Adenosine Tri phosphate
BDNF	:	Brain-Derived Neurotrophic Factor
CAT	:	Catalase
CCB	:	Calcium Channel Blocker
CDC	:	Centres for Disease Control and Prevention
CHD	:	Coronary Heart Disease
CMS	:	Chronic Mild Stress
CNS	:	Central Nervous System
CPCSEA	:	Committee for the Purpose of Control and Supervision of Experiments on Animals
CRF	:	Corticotrophin-releasing factor
CRH-R1	:	Corticotrophin Releasing Hormone Receptor-1
CS	:	Chronic Stress
DA	:	Dopamine
DPPH	:	2, 2, diphenyl 1- picryl hydrazyl

EAS	:	Episodic Acute Stress
EGCG	:	Epigallocatechin-3-gallate
FTIR	:	Fourier Transform Infrared Spectroscopy
GABA	:	Gamma-Aminobutyric acid
GAD	:	Generalized Anxiety Disorder
GAS	:	General Adaptation Syndrome
GC-MS	:	Gas Chromatography- Mass Spectroscopy
GIT	:	Gastro Intestinal Tract
GPx	:	Glutathione peroxidase
GRx	:	Glutathionereductase
GSH	:	Glutathione
HPA	:	Hypothalamic-pituitary-adrenal
HPLC	:	High Performance Liquid Chromatography
IDL	:	Intermediate-Density Lipoprotein
IL	:	Interleukin
LPO	:	Lipid perOxidation
LHPA	:	Limbic Hypothalamic-pituitary-adrenal axis
MAOIs	:	Monoamine oxidase inhibitors
MDD	:	Major Depressive Disorders
NA	:	Nor Adrenaline
NIMHANS	:	National Institute of Mental Health and Neurosciences
OCD	:	Obsessive-Compulsive Disorder
PMS	:	Phenazine methosulfate
PUFA	:	Poly Unsaturated Fatty Acid

RNS	:	Reactive Nitrogen Species
ROS	:	Reactive Oxygen species
RS	:	Restraint Stress
SAM	:	Sympatho Adreno Medullary
SNP	:	Single Nucleotide Polymorphism
SNS	:	Sympathetic Nervous System
SOD	:	Superoxide dismutase
SRRS	:	Social Readjustment Rating Scale
SSRI	:	Selective Serotonin (5 HT) Reuptake Inhibitors
TBARS	:	Thiobarbituric acid Reactive Substances
TC	:	<i>Terminalia catappa</i>
TNF	:	Tumour Necrotic Factor
TSH	:	Thyroid-Stimulating Hormone
VLDL	:	Very Low Density Lipoprotein
VTA	:	Ventral Tegmental Area
WHO	:	World Health Organization

ABSTRACT

Stress and stress-related disorders are a significant cause of disease in modern man, contributing to perhaps 75% of illnesses. Western medicine has developed multiple approaches to coping with stress, including pharmaceutical drugs, exercise, and relaxation techniques like meditation. While these methods can provide some benefits, results are mixed and often unsatisfactory. In the East, researchers have also struggled to find solutions to stress-related problems. In Russia, after years of scientific investigation, scientists developed a unique approach to stress reduction and the prevention of stress-related symptoms.

In this modern era, stress has become an integral part of human life. It is vital that stress is kept under control and normal functioning is not hampered due to excessive stress. Stress is considered to be any condition which results in perturbation of the body's homeostasis. If the level of stress is extreme, the homeostatic mechanisms of the organism become deficit and the survival of the organism is threatened. Stress has been postulated to be involved in the etiopathogenesis of a variety of disease states, viz; hypertension, peptic ulcer, diabetes, immunosuppression, reproductive dysfunction and behavioural disorders like anxiety due to involvement of the central nervous system (CNS), endocrine system and metabolic system.

The human body has several mechanisms to counteract oxidative stress by producing antioxidants which are either naturally produced in body or externally supplied through foods and or supplements. Endogenous and exogenous antioxidants act as free radical scavengers and therefore can enhance the immune defense and lower the risk of cancer & degenerative diseases. Recently it has been claimed that the imbalances in the levels of free radicals and antioxidants in saliva may play an important role in the onset of periodontal diseases, therefore measurement of oxidative stress in saliva represents major intraoral condition and this would provide a more accurate account of the oral environment. Free radicals and its adverse effects were discovered in the last decade. These are dangerous substances produced in the body along with toxins and wastes. The body obtained energy by the oxidation of carbohydrate, fats and proteins through both aerobic

and anaerobic process leads the generation of free radicals. Overproduction of the free radicals can responsible for tissue injury. Cell membranes are made of unsaturated lipids and these unsaturated lipid molecules of cell membranes are particularly susceptible to free radicals. Oxidative damage can direct to a breakdown or even hardening of lipids, which composition of all cell walls. Breakdown or hardening is due to lipid peroxidation leads to death of cell or it becomes unfeasible for the cell to properly get its nutrients or get signals to achieve another. The enhanced production of free radicals and oxidative stress can also be induced by a variety of factors such as radiation or heavy metals and xenobiotics (e.g. Carbon tetrachloride).

Antioxidants are the compounds of exogenous or endogenous in nature which either prevent the generate on of toxic oxidants or intercept any that are generated and inactivate them and thereby block the propagation of chain reaction produced by these oxidants. Therefore the uses of antioxidants, both natural and synthetic are gaining wide importance in the prevention of oxidative stress. Plants produces large amount of antioxidants which are pharmacologically potent and have low or no side effects for therapeutic use. Many plants are known stress relievers and many such more plants to be investigated for these actions. Therefore, the present study aimed to investigat the anti-stress activity of medicinal plants against various stress models.