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Rheological characterization and controlled release properties of novel *Abelmoschus moschatus* mucilage based system

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In present scenario of pharmaceutical development, researchers are focusing on the herbal product as pharmaceutical excipients in drug delivery system. In the same context, present work describes rheological characterization of novel *Abelmoschus moschatus* stems mucilage, as a function of concentration and particle size. Further, mucilage was investigated for their potential as release restarting material in matrix tablets. As a result, power law model described that aqueous solution of dry mucilage, exhibited non-Newtonian pseudoplastic flow property since the flow behaviour index (n) was found less than 1 in all solutions prepared by changing the concentration and particle size. The consistency coefficient (k) was found to increase with increase in concentration and particle size. The Arrhenius model well described temperature dependency of viscosity, since activation energy (Ea) was found to decrease from 7858.86 to 4548.86 J/mole-1 with increase in concentration. Viscosity found to be increased by increasing the pH of the media. Release kinetics study revealed that drug release mechanism was anomalous transport, therefore extracted mucilage may be considered as release retarding material in tablet formulation.

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Unravelling the mysteries of depressive illness

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Clinical depression is a serious disorder that interferes more with social and physical functioning than do other chronic illnesses such as hypertension, diabetes and arthritis. Stress is considered to be responsible for producing motivational, cognitive and emotional deficits synonymous with depression, and supports the stress-depression connection underscoring the need for an animal model of endogenous depression. Biogenic amine neurotransmitters are considered to be important players in depression as they are involved in regulating mood, alertness, sleep, memory and emotional behaviour. Even though a large number of antidepressant drugs are available for clinical use, the mechanism by which these drugs alter biogenic amine modulation in the brain to alleviate depressive symptoms is not clearly understood. Our research has revealed the importance of using an appropriate animal model to study the role of stress on the induction of depressive illness and related disorders, offering a translational application to human psychiatric disorders. Using the Wistar-Kyoto rat strain as an appropriate animal model, we have uncovered several behavioural and neurochemical differences that appear to be linked to altered neurotransmission in discrete regions of the brain.

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