Latex tapping has a well-known negative effect on the long term radial growth of rubber trees (*Hevea Brasiliensis*). The additional carbon sink induced by latex yield is considered as the main cause. However the potential contribution of a tapping induced water stress has received little attention. In Northeast Thailand, we applied an exploring approach comparing the diel cycle of girth change between days of rest and days with tapping in conditions of relatively stable evaporative demand and soil water availability. Trees were tapped at dark in the early morning for two consecutive days and rested for one day. Five standard trees were equipped with high accuracy girth bands above the tapping panel. The sampling included one tree with additional measurements, one below the tapping cut and the other at the trunk bottom. Data were recorded at 30 min interval over 14 days at the onset of the dry season in November. Results demonstrated a significant short-term shrinkage within two hours after tapping. However, the nighttime expansion maximum diurnal shrinkage and midnight recovery were not significantly influenced by the tapping cycle. As a result the daily growth was not negatively impacted on tapping days. Finally, in conditions of low average growth, our results refute the hypothesis of a negative impact of tapping on radial growth at a daily scale through a simple dehydration. A substantial loss of turgor was confirmed but trees seem to quickly react and smooth the consequences on nighttime recovery and diurnal shrinkage [Junya Junjittakarn, Viriya Limpinuntana*, Krick Pannengpetch, Supat Isarangkool Na Ayutthaya, Alain Rocheteau, Herve Cochard and Frederic C. Do (1Department of Plant Science and Agricultural Resources, Faculty of Agriculture, Khon Kaen University, Khon Kaen, 40002, Thailand), *AJCS*, 2012, 6(1), 65-72].

The rubber tree (*Hevea brasiliensis*) extracts are becoming increasingly visible in pharmaceutical and therapeutical research. The present study is aimed at examining the specific anti-proliferation property of *H. brasiliensis* latex B-serum sub-fractions against human breast cancer epithelial cell lines MCF-7 and MDA-MB231. The results showed that the latex whole B-serum and DBP sub-fraction exerted a specific anti-proliferation activity against cancer-origin cells MDA-MB231 but had little effect on non-cancer-origin cells. On the other hand, the anti-proliferative activity was diminished in the pre-heated B-serum fractions. With the low toxicity that the B-serum demonstrated previously in Brine Shrimp Lethality Test (BSLT), the present results suggest the potential use of the B-serum subfractions in cancer treatment [Yang Kok Lee, Lam Kit Lay, Mansor Sharif Mahsufi, Teoh Siang Guan, Sunderasan Elumalai and Ong Ming Thong2*(Institute for Research in Molecular Medicine (INFORMM), Universiti Sains Malaysia, 11800 Minden, Pulau Pinang, Malaysia), *Pakistan Journal of Pharmaceutical Sciences*, 2012, 25(3), 645-650].

Natural rubber latex (NRL) from *Hevea brasiliensis* consists of poly-cis-1,4-isoprene polymer displaying excellent physical properties such as high elasticity, high tensile strength, and ease of film-forming. However, the film casted from NRL is soft and sticky. The aim of this research was to apply the NRL as polymeric
material for tablet coating. NRL, triethyl citrate (TEC) and titanium dioxide (TiO2) were used as polymer, plasticizer and antiadherant, respectively. Mechanical properties of the casted films were characterized. It was found that TEC and TiO2 affected the properties of the films. The results showed good compatibility which confirmed by Fourier transforms infrared (FTIR) spectroscopy. These results confirmed that NRL was possible to use as film former for pharmaceutical coating applications [K. Panrat\textsuperscript{a}, P. Boonme\textsuperscript{a}, W. Taweepreda\textsuperscript{b}, and W. Pichayakorn* (Department of Pharmaceutical Technology, Faculty of Pharmaceutical Sciences, Prince of Songkla University, Songkhla 90112, Thailand), Procedia Chemistry, 2012, 4, 322-327].

\textit{NPARR} 3(3), 2012-0278, \textbf{Isolation, characterization and study of disintegration properties of mucilage from Urginea indica, Liliaceae} Indian squill (\textit{Urgenia indica}) is used as a cardiotonic, hair tonic and as a remedy for cancer. It has high content of mucilage which may be of pharmaceutical significance. There are many plant sourced drugs which also act as pharmaceutical adjuvants. This study was undertaken to isolate the mucilage as well as to characterize and to investigate the properties of mucilage of \textit{Urginea indica} in various concentrations as disintegrand for tablet formulation containing tramadol hydrochloride as active ingredient. The mucilage from bulbs of \textit{Urginea indica} was separated by an acetone precipitation method. The separated mucilage was evaluated for physicochemical characteristics such as color, solubility, swelling index, compressibility index etc. Tablets of tramadol hydrochloride were prepared by direct compression using directly compressible Avicel 102 as diluents along with different proportions of mucilage of plant \textit{Urginea indica} as a disintegrant. These tablets were compared with the standard disintegrant, starch. The percentage yield of the mucilage of Urginea indica was 4%.

The physicochemical parameters showed the results indicating the suitability of mucilage to be used as tablet excipient. The dissolution profile was significantly affected by the choice of the disintegrant. All formulations containing \textit{Urginea indica} mucilage as disintegrant showed more than 90% drug release at 10 min whilst formulations containing starch as disintegrant showed significantly less release in this time period. Thus, this mucilage could be used as a very good natural disintegrant in comparison to costly synthetic disintegrant. A concentration of 7.5% mucilage gave the least disintegration time (20 second) compared to the starch [Sunetra Patwardhan*, Dhairya Maheshwari, Neelam Upadhyay, Kaumudee Bodas, Arati Ranade and Shilpa Shrotriya, Inventi Impact: Novel Excipients, 2012, 2(2), 61-69].

\textit{NPARR} 3(3), 2012-0279, \textbf{Isolation and characterization of jackfruit mucilage and its comparative evaluation as a mucoadhesive and controlled release component in buccal tablets}

The purpose of the present research work was to extract jackfruit mucilage, use it as a mucoadhesive agent, and to develop extended release buccoadhesive tablets with an intention to avoid hepatic first-pass metabolism, by enhancing residence time in the buccal cavity. The mucilage was isolated from the jackfruit pulp by the aqueous extraction method and characterized for various physiochemical parameters as well as for its adhesive properties. Three batches of tablets were prepared (wet granulation method) and evaluated containing three mucoadhesive components: Methocel K4M, Carbopol 974P, and isolated jackfruit mucilage using chlorpheniramine maleate (CPM) as a model drug and changing the proportion of the mucoadhesive component (1:2:3), resulting in nine different formulations. The results of the study indicate that the isolated mucilage had good physicochemical and morphological
characteristics, granules and tablets conformed to the Pharmacopoeial specifications, and in vitro release studies showed the sustained action of drug with increasing concentration of the isolated natural mucoadhesive agent in the formulations. Permeability studies indicated that changing the mucoadhesive component, permeability behavior was not statistically different (P> 0.05). FTIR and UV spectroscopy studies between mucilage and CPM suggested the absence of a chemical interaction between CPM and jackfruit mucilage. The developed mucoadhesive tablets for buccal administration containing natural mucilage (MF3) have a potential for the sustained action of drug release. Thus, mucoadhesive tablets for controlled release were successfully developed using natural jackfruit mucilage [Vidya Sabale*, Vandana Patel and Archana Paranjape (Baroda College of Pharmacy, At and P. O. Limda, Ta. Waghodia, Dist Vadodara-391 760, Gujarat India), International J Pharma Investig, 2012, 2, 61-69].