

Validated analytical RP-HPLC method for quantitation of Punicalagin from Fruit rind of *Punica granatum* and marketed Ayurvedic formulations.

Sunita Shailajan^{1*}, Sasikumar Menon², Ashish singh³, Mandar mhatre³

¹Herbal Research Laboratory, Ramnarain Ruia College, Matunga (East), Mumbai-400019

²Therapeutic Drug Monitoring Laboratory, Sion (East), Mumbai- 400 022

³Ramnarain Ruia College, Matunga (East), Mumbai-400019

*Corresponding author: sunitashailajan@gmail.com

Punica granatum Linn. (Fam. – Punicaceae) is as an important ingredient of several Ayurvedic formulations. The monograph on different parts of plant like fruit, rind, seed, leaf are listed in Ayurvedic pharmacopeia of India. The plant is reported to be effective for broad range maladies like acidity, burning sensation, throat problems, reproductive problems of females etc. It is also used as a blood purifier, astringent, haemostatic and antidiabetic agent. Punicalagin in the form of two isomers i.e. Punicalagin- α and Punicalagin- β is one of the major phytoconstituents found in rind of *Punica granatum* fruit and can be used as a bioactive marker to establish the quality of the crude drug and its formulations. In the present study, Punicalagin-based standardization of *Punica granatum* and its quantitation from marketed Ayurvedic formulations has been documented using RP-HPLC. In the current work an Isocratic method has been developed and reported for the first time to quantitate total Punicalagin from fruit rind of *Punica granatum*. This method was validated as per ICH guidelines and is used to quantitate the content of Punicalagin in polyherbal formulations like *Dadimadya Ghritam* and *Marichyadi Bati*. The LOD is found to be 100.00ng/mL and the LLOQ is 500.00ng/mL. The linearity range of response is from 1000.00ng/mL to 60000.00ng/mL. As compared to method reported earlier the validated method is found to be simple, sensitive, accurate, rugged, reproducible and can be recommended for quality assurance and marker-based standardization, of polyherbal formulations containing rind of *Punica granatum* fruit.

Keywords:- *Punica granatum*, Fruit rind, Punicalagin, RP-HPLC, *Dadimadya Ghritam* and *Marichyadi Bati*.