Tanata University
Faculty of pharmacy
Dept. Pharm. Anal. Chem.

Areas of Research

The broad research theme of our department in based on the development and validation of new analytical and bioanalytical methodologies for determination of different therapeutic agents. This will help for solving the arising chemical problems and fulfilling the need of pharmaceutical industry for simple, rapid, selective, sensitive, and cheap methods for the evaluation of different drugs and biologically derived products. The developed methods will be adapted to carry out bioequivalence and bioavailability studies needed for registration of new drug products. Our goals are extended also for environmental control and analysis of pollutants in food, water & air. Also, the forensic area constitutes a part of our research activities.

Different analytical research projects include:

1- **Assay of multicomponent dosage forms:**
Different analytical methods are to be developed for the determination of mixtures of drugs in presence of their degradents and excipients in multicomponent dosage forms. Such methods involve the use spectrophotometric & spectrofluorometric methods; statistical treatment of spectrochemical data by chemometrric methods, will be carried out. Also, chromatographic methods including HPTLC, GC & HPLC, will be used.

2- **The use of chemical derivatization techniques for determination of pharmaceutical compounds lacking suitable chromophores.** The product of derivatization reaction can be measured either directly by spectrophotometric & spectrofluorometric methods, or as precolumn derivatization for HPLC analysis.

3- **Enantioseparation and quantitation of chiral therapeutic agents:**
Separation of enantiomers of chiral drugs can be achieved either by the use of chiral stationary phases, chiral mobile phase additives, or after derivatization with chiral derivatizing reagents.

Academic year / Research areas	2011 outcomes	2012 outcomes	2013 outcomes	2014 outcomes	2015 outcomes	Needed equipments	Estimated needed funds(L.E)
Assay of multicomponent dosage forms	3 publications	2 publication	3 publications	2 publication	2 Masters	* LC-MS/MS * UPLC	1.000.000 500.000
Chemical Derivatization techniques for pharmaceutical compounds lacking suitable chromophores	2 publications	1 publication	1 PhD + 2 publications	2 publications	2 publications	*HPTLC *Derivatizing Agents: dansyl chloride, dansyl hydrazine, aminoanthracene, dinitrophenylhydrazine.	400.000 20.000
Enantioseparation and quantitation of chiral therapeutic agents		2 publications	1 Master 1 PhD	2 publications	2 publications	*Capillary Electrophoresis *chiral columns *Mobile phase additives: ex. B-cyclodextrin, hydroxypropyl B-cyclodextrin, L-leucine. * Chiral derivatizing regents: ex. L-leucinamide. *digital polarimeter	400.000 40.000 5.000 5.000