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AAPS PharmSciTech has made a significant impact in scientific electronic publishing over the course of its first three issues. Authors, researchers, and scientists have given high marks to the journal as it unlocks the limitations posed by print publications. Unlimited color, tables, animated graphics, detailed schematics, and high-resolution figures all hold high value for the pharmaceutical scientist, especially in the field of pharmaceutical technology. The following are some excellent examples of the enormous potential of electronic publishing.

Structural Analysis of Microparticles by Confocal Laser Scanning Microscopy

Alf Lamprecht, Ulrich Schäfer, and Claus-Michael Lehr (Vol. 1 Iss. 3)

This study demonstrates the potential of confocal laser scanning microscopy (CLSM) as a characterization tool for the polmeric composition of different types of microparticles. CLSM allows visualization of the polymeric particle wall composition and detection of heterogeneous polymer distribution or changes in polymer matrix composition under the influence of the drug. Furthermore, CLSM provides a method for three-dimensional reconstruction of the microparticles by imaging several coplanar sections throughout the object. It can be used to localize encapsulated proteins and to detect special structural details of the particle wall composition. This study includes a figure featuring an animated graphic of a three-dimensional cross-sectioning through a microparticle prepared by complex coacervation after covalent labeling of gelatin with RBITC.

Composite Method to Quantify Powder Flow as a Screening Method in Early Tablet or Capsule Formulation Development

Michael K. Taylor, Jeri Ginsburg, Anthony Hickey, and Ferdous Gheyas (Vol. 1 Iss. 3)

A novel statistical approach is described which enables formulation scientists to quantify pharmaceutical powder flows. The method uses simple, widely available bench tests to generate a flow index which can be used as a screening method in early tablet and capsule formulation development.

Evaluation Of Quick Disintegrating Calcium Carbonate Tablets

Hector Fausett, Charles Gayser Jr., and Alekha K. Dash. (Vol. 1 Iss. 3)

The purpose of this investigation was to develop a rapidly disintegrating calcium carbonate (CC) tablet by direct compression and compare it with commercially available calcium tablets. CC tablets were formulated on a Carver press using 3 different forms of CC direct compressed granules (Cal-Carb 4450®, Cal-Carb 4457®, and Cal-Carb 4462®). In summary, this study clearly demonstrated that quick disintegrating CC tablets can be formulated without expensive effervescence technology.

Scale-Up Effects on Dissolution and Bioavailability of Propranolol Hydrochloride and Metoprolol Tartrate Tablet Formulations

Natalie D. Eddington, Guvinder Singh Rekhi, Larry J. Lesko and Larry L. Augsburger (Vol. 1 Iss. 2)

This study evaluated the effects of batch size on the in vitro dissolution and the in vivo bioavailability of immediate release formulations of propranolol hydrochloride and metoprolol tartrate. The results suggest that the scale-up process does not significantly affect the bioavailability of highly soluble, highly permeable drugs and in vitro dissolution tests may be useful in predicting in vivo behavior.

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AAPS PharmSci – Theme Issues

AAPS PharmSci will continue to accept submissions for publication in Theme Issues. One very successful theme issue is continuing to accept submissions on the topic of:

Epithelial Cell Permeability and Drug Absorption

AAPS invites authors to submit papers to a Theme Issue of its new electronic journal, ***AAPS PharmSci***, on the general topic of epithelial cell permeability and drug absorption. Manuscripts are invited from the broad range of topics including:

1) molecular membrane transporters e.g. P-gp, hPepT1,etc.
2) membrane structure and biophysics
3) permeability determination including HTS
4) epithelial cell permeability in mucosal tissues
5) epithelial cell permeability in pharmacokinetics
6) individual variability in drug penetration of epithelial membranes.
7) prediction of permeability and drug absorption
8) drug regulatory standards based on permeability including BA and BE standards

Theme Issue will be separately advertised to target audiences, to enhance the impact of papers submitted under a common umbrella.

Papers will be accepted by e-mail attachment to or by disk to the AAPS Editorial office (see Instructions to Authors) Manuscripts will undergo an expedited review by two experts to determine suitability for publication. Manuscripts will be published immediately following acceptance in this theme issue volume of ***AAPS PharmSci***; the paper will also appear in the regular monthly issue of ***AAPS PharmSci*** as an alternative entry point for our readers.

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Human Proton/Oligopeptide Transporter (POT) Genes: Identification of Putative Human Genes Using Bioinformatics

Christopher W. Botka, Thomas W. Wittig, Richard C. Graul, Carsten Uhd Nielsen, Kazutaka Higaki, Gordon L. Amidon, and Wolfgang Sadée

Antibiotics have proven highly effective in treating infectious diseases. Whereas most antibiotics need to be injected, some can be taken orally. To be absorbed into the body, the main oral antibiotics with peptide-like structure need to be absorbed from the intestines through transporter proteins. The intestinal peptide transporter is encoded by a known gene, termed hPepT1, but it is currently unknown whether there are more human genes with similar functions, assisting in drug absorption and distribution to infected sites in the body. With the sequencing of the human genome nearing completion, we now can find all related probable peptide transporter genes from sequence data publicly available on the Internet. Such data mining is the key of recent advances publicized by genomics companies. The paper by Botka et al. describes how one can find novel human genes on the Internet - taking the peptide transporters as an example- and what type of information can be gleaned from public data before the first laboratory experiment is done. The paper contains interactive figures that illustrate how the sequences are found and spliced together – a hallmark of the on-line capabilities of AAPS PharmSci, the new electronic-only journal of the American Association of Pharmaceutical Scientists.'