

Tentative Outline
Special Issue for CURRENT DRUG TARGETS
Guest Editors: Luciano P. Silva and Graziella A. Joanitti

**BY-PRODUCTS AS SCAFFOLDS FOR DRUG DELIVERY SYSTEMS: DESIGN, TARGETING
APPROACHES, AND SUSTAINABILITY**

Aims and Scope:

Natural resources are widely used as raw materials by several manufacturing industries developing a broad range of products including food, pharmaceuticals, cosmetics, lumber, paper, and clothing. In most cases, abundant by-products with low economic interest are generated from the manufacturing process. Gelatin, animal carcasses, blood, plant fibrous residues, and straw are some examples of by-products usually considered as waste. The concept of sustainability involves, among other definitions, a responsible management of resources use and disposal. In this context, recent research efforts comprising a combination of sustainability, nanobiotechnology, and nanomedicine have emerged. Interestingly, by-products are promising sources of molecules (e.g. collagen, chitosan, keratin) to be used as scaffolds for the development of delivery systems able to carry drugs, proteins, vaccines, DNA/RNA, pesticides, and hormones to a specific site of interest. In addition to the well established advantages of delivery systems (e. g. drug sustained release, systemic toxicity reduction, targeted treatment, and low drug degradability), this innovative approach offers other benefits including abundance of suppliers worldwide; use of low-priced and biodegradable by-products; and development of new platforms for drug carriers targeting the treatment of several pathologies such as cancer, diabetes, and cardiovascular diseases. The aim of this special issue will be to gather current findings on this new perspective in drug targeting describing the challenges and noteworthy applications of by-products as building blocks for modern delivery systems.

Keywords: by-products, drug delivery systems, sustainability, drug targeting, nanotechnology, nanobiotechnology

Sub-topics:

1. The emerging potential of by-products as platforms for sustained-release delivery systems.

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2. The use of keratin in drug delivery systems.

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3. Current issues relating to the use of red blood cell-mimicking vesicles as drug delivery systems.

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4. More good news about polymeric plant-derived biomaterials in drug delivery systems.

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5. Rational use of by-products as topical vehicles of cosmetics.

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6. Albumin: an agro-industrial by-product used as platforms for drug delivery.

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7. Collagen-based nanomedicine platforms for drug delivery.

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8. Recent advances in chitosan and chitosan derivatives as novel drug delivery systems.

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9. Design of novel inorganic drug delivery systems derived from agriculture by-products.

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10. Phospholipids and triacylglycerols: by-products used as essential building blocks for modern drug delivery systems.

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Schedule:

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