

## **iCollect: A Highly Customizable Management Tool for Biological Resource Centers (BRCs)**

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### Abstract:

Biological Resource Centers (BRCs) have played crucial roles for the research and development in the life sciences and biotechnology. BRCs are both service providers and repositories of various biological materials such as culturable organisms, and parts of organisms, as well as database and information relevant to these biomaterials. As service providers, BRCs need to provide (a) the assurance for the high-quality material and accurate information to users and (b) the continuity of preservation and access to a large number of diverse materials and information. As a result, BRCs must deal with the complexity of managing the increasing numbers of biomaterials and associated information. A software system is needed to help achieve the effective management of BRC. Here, we present a software called iCollect to support the BRC's main functional management including (a) collection management, (b) storage management, (c) quality management, (d) service management, (e) data exchange, access and sharing. iCollect has been designed with highly customizable, configurable and user-friendly interface to allow users to create any type of sample containers and storage devices, store any type of samples and collections, graphically view the content of all levels of storages, assign the barcode for locating and tracking samples, easily aliquot/derive/extract any number of samples and search any information in a collection. Using the barcode assigned by iCollect, users can easily find a sample's position in the storage, and add a sample to a selected storage position. The in and out movement of samples in the storage are recorded and tracked for audit trail. Moreover, the graphical tree view of the samples can be used to trace the aliquot/sample back to its original parent. To enhance the functionalities and the diversity of materials, most of BRCs exchange their expertise as well as materials and information through integrated networks. Using iCollect, users are able to customarily select the data for exchange with other BRCs and sharing in the BRC data network through following two options: Web services and file transfer in the specified standard format. In addition, iCollect offers a catalog builder and a flexible service management for managing the operations of BRC services' related data such as service profiles, pricing plans, and required documents.

**Key words:** Biological Resource Centers, biological materials, biomaterials, quality management, data exchange