



Grant Agreement no. 317916

LiPhos

Living Photonics: Monitoring light propagation through cells

INSTRUMENT: Collaborative Project (Small or Medium Scale Focused Research Project)

OBJECTIVE: ICT-2011.3.5

D1.3 (PIN Library) and D1.4 (PIN Library – Lite version)

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PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including Commission Services)	
CO	Confidential, only for members of the consortium (including Commission Services)	

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2 nd December 2015	v1.0	Final version

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1. Executive Summary

This PIN Library has been created with the purpose of collecting and structuring data obtained in the LiPhos project, which could be later applied by end-users of developed BDT systems. The database of PINs is designed to be expanded after the LiPhos project and serves as a reference for results obtained with LiPhos devices (referred to as BDTs). Cellix have prepared a template file (Microsoft Access), which forms the basis of the database and in which initial entries from DCU and RUG were introduced in a uniform format. The database will be supplemented with the newest results periodically after the end of LiPhos project to help in further improvement of BDTs.

We have chosen to combine D1.3 and D1.4 in this one document, as the database does not contain confidential data at this time.

2. Introduction

Within the LiPhos project, large amounts of data have been acquired and it has become increasingly apparent that we need a system for simple management of, and fast access to, this data. Addressing this issue, a user-friendly PIN Library has been established, where validated data are sorted and presented in a clear manner.

Cellix prepared the Access Database (in Microsoft Access) where validated PINs obtained in the LiPhos project can be stored in a structured manner. The presented PINs are supplemented with applied protocols and explanations of the results to help researchers in repeating experiments and transferring LiPhos knowledge to their own experiments. LiPhos partners introduced the possibility of attaching comments to the data entries with purpose of facilitating communication between LiPhos partners and end-users of BDTs.

In this deliverable, an example entry is presented and a short manual how to implement new data to the PIN Library is given. The integral part of this deliverable is an Access File, where the initial entries are implemented.

Currently, the PIN Library is available for the LiPhos partners, however it can be made more accessible to selected end-users via the internet in future, if necessary.

3. PIN Library – User Manual

Cellix has designed and implemented a database and the template form for the database entry including the following fields:

1. **PIN Library Entry Name**, which is unique identifier of an experiment validated;
2. **BDT configuration**, which refers to the BDT used in this experiment;
3. **Cell culture protocol**, which details which cells have been used;
4. **Developmental level**, which describes the validation maturity of an assay;
5. **LiPhos Location**, which indicates the partner where experiment has been carried out; Created by displays the contact details of the person who has made the entry (this can be created in a separate Contacts form);
6. **Entry Date** – date of creating the entry;
7. **Last Modification Date**, which indicates when the entry was modified last.

Figure 1 shows an interface of the created form. Contacts can be created by a separate Contacts form shown in Figure 2.

PIN Library Entry

Print Save and New Close

PIN Library Entry Comments Attachments

PIN Library Entry Name: Single Cell Analysis HUVEC Profile

BDT Configuration: V-SCA-EC

Cell Culture Protocol: HUVECS from Promocell

Developmental Level: Intermediate

Liphos Location: DCU, Dublin

Created by: Dmitry Kashanin

Entry Date: 22/07/2015

Last Modification Date:

Record: 1 of 3 No Filter Search

Figure 1: PIN Library Entry Form.

Contact Details

Maciej Grajewski

Go to E-mail Create Outlook Contact Save and New Close

General

First Name: Maciej

Last Name: Grajewski

Company: RUG

Job Title: PhD Student

Phone Numbers

Business Phone: +31647288866

Home Phone:

Mobile Phone: +31647288866

Fax Number:

Address

Street: Antonius Deusinglaan 1

City: Groningen

State/Province: Groningen

Zip/Postal Code: 9731 AV

Country/Region: The Netherlands

E-mail: m.grajewski@rug.nl

Web Page:

Notes

Record: 1 of 2 Unfiltered Search

Figure 2: PIN Library Contacts Form.

The toolbar at the bottom of the PIN library entry form displays the current entry number out of the total entries. The template consists of three tabs: PIN Library Entry, Comments and Attachments.

Comments can be entered by writing in the New Comment Field of the Comments Tab as shown in Figure 3. Comment History is kept below to allow changes to be tracked and updates of the currently edited entry. Monitoring the history of entries, users can follow the newest advances in displayed configurations and related experiments.

The Attachments Tab of the PIN Library Entry Form allows viewing of the entry files. Under this tab the PINs are presented in details as separate files, where photos of setups, cell cultures, raw and processed data are delivered to a database user. This approach is convenient for both users and database managers, because it does not require constant modification of a whole entry, but only the most recent attachments.

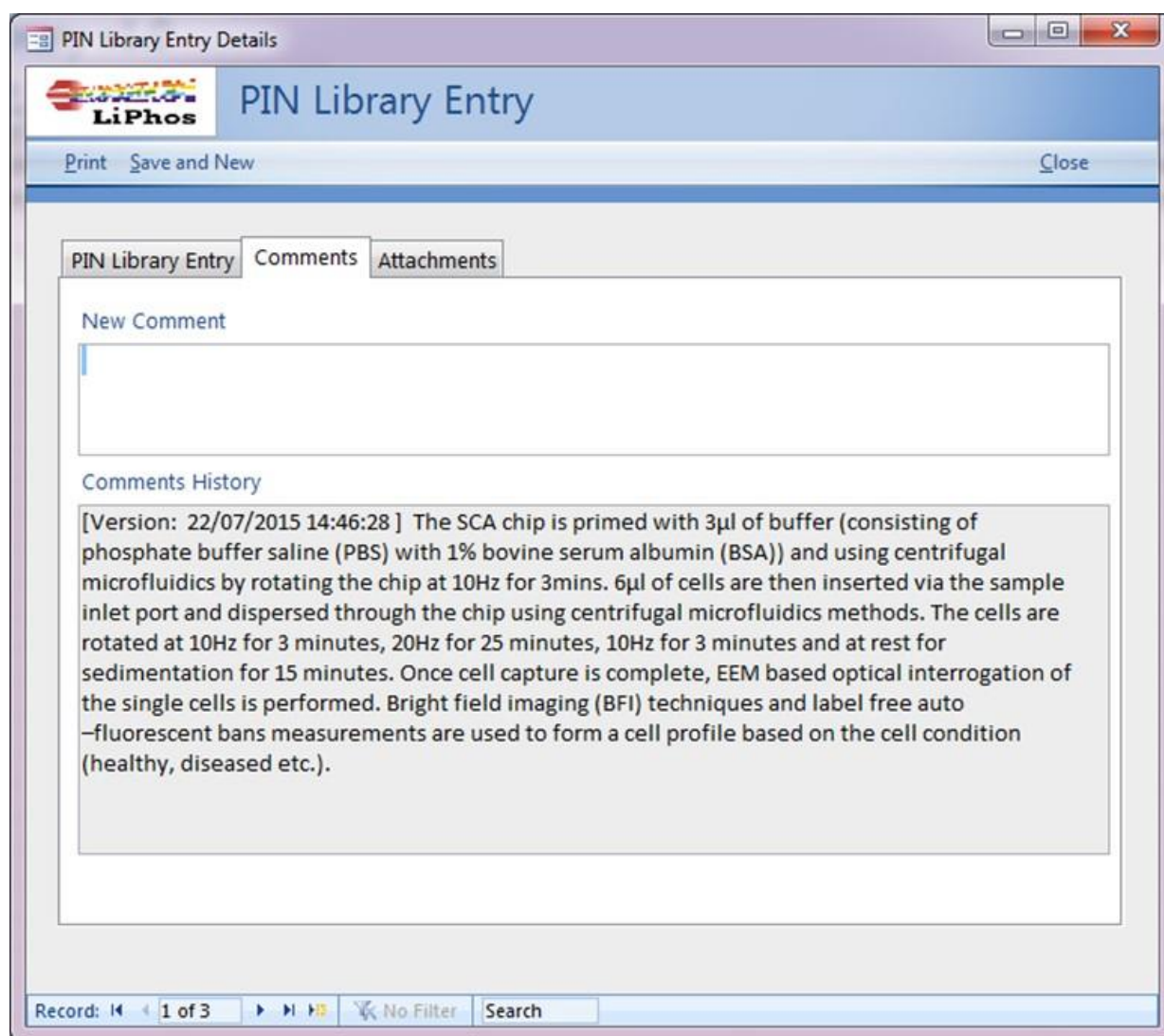


Figure 3: PIN Library Entry Form – Comments.

Various PINs have been measured for different types of cells/tissue and typical PIN profiles have been obtained for both healthy and diseased cells, including for differential levels of induced inflammation (details are provided in WP3 and WP5 deliverables). These have been added to the PIN library after experimental validation. Data are available in the PIN Library (complementary part of this deliverable).

4. List of entries

The PIN library includes contributions from work performed at RUG, DCU, CNIC and AU. A partial listing of entries can be found below.

Entry Name	BDT Configuration	Partner
Single Cell Analysis HUVEC Profile	V-SCA-EC	DCU
Single Cell Analysis EA.hy926 Profile	V-SCA-EC	DCU
HUVEC +Latrunculin A	TF-SLLP	RUG
HUVEC + Jasplakinolide	TF-SLLP	RUG
HUVEC at 4 °C	TF-SLLP	RUG
HUVEC (Control)	TF-SLLP	RUG
apoE-KO Mouse Model SCA Cell Profile	V-SCA-EC	DCU, CNIC
Single Cell Analysis Stem Cell Derived Smooth Muscle Cell Profile	V-SCA-EC	DCU
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5. Conclusions

LiPhos partners have prepared a PIN Library, where validated results are presented in a clear manner for prospective users. By application of a commonly used programme for data management like Microsoft Access in establishing of the PIN database, we have created a user-friendly tool for an expertise exchange between end-users and LiPhos partners. This will contribute to future experiments related to the LiPhos concept.