Subject: Re: Q140229/S001
Date: Wednesday, April 1, 2015 at 10:45:42 AM Pacific Daylight Time
From: Nussbaum, Robert
To: Shukla, Sunita
CC: Chen, Flavia, Koenig, Barbara

Correct, to see if we can do it and for for internal use/comparison's sake . The actual Pgx result will be based on the GEneLex result.

We are also looking for evidence of a primary immune deficiency in the NGS sequencing result but that result is NOT going back to the patient.

From: <Shukla>, Sunita Shukla <Sunita.Shukla@fda.hhs.gov>
Date: Wednesday, April 1, 2015 at 10:43 AM
To: Robert Nussbaum <robert.nussbaum@ucsf.edu>
Cc: "Chen, Flavia" <Flavia.Chen@ucsf.edu>, "Q140229-S001@docs.fda.gov" <Q140229-S001@docs.fda.gov>
Subject: RE: Q140229/S001

Thank you. Just to confirm, you are collecting NGS data from dried blood spots, correct?

Sunita Shukla, MPH, Ph.D.
Scientific Reviewer
Division of Chemistry and Toxicology Devices
Office of In Vitro Diagnostics and Radiological Health (OIR)
Food and Drug Administration
10903 New Hampshire Avenue
WO66, Room 5647
Silver Spring, MD 20993-0002
Tel. (301) 796-6406

From: Nussbaum, Robert [mailto:Robert.Nussbaum@ucsf.edu]
Sent: Wednesday, April 01, 2015 12:44 PM
To: Shukla, Sunita
Cc: Chen, Flavia
Subject: Re: Q140229/S001

This set of subjects are affected with primary immunodeficiency and will Receive pre-test counseling and be consented to

1. Allow us to go back and get their NBS
2. Give a buccal swab for confirmation of what we see in the NGS of their newborn blood spots

From: <Shukla>, Sunita Shukla <Sunita.Shukla@fda.hhs.gov>
Date: Wednesday, April 1, 2015 at 8:07 AM
To: "Chen, Flavia" <Flavia.Chen@ucsf.edu>
Cc: Robert Nussbaum <robert.nussbaum@ucsf.edu>, "Q140229-S001@docs.fda.gov" <Q140229-S001@docs.fda.gov>
Subject: RE: Q140229/S001

Thank you. Just to confirm, you will collect the buccal swabs from the same subjects as you collect the DBS samples from and then send to Genelex?

Sunita Shukla, MPH, Ph.D.
Scientific Reviewer
Division of Chemistry and Toxicology Devices
Office of In Vitro Diagnostics and Radiological Health (OIR)
Food and Drug Administration
10903 New Hampshire Avenue
WO66, Room 5647
Silver Spring, MD 20993-0002
Tel. (301) 796-6406

From: Chen, Flavia [mailto:Flavia.Chen@ucsf.edu]
Sent: Wednesday, April 01, 2015 9:25 AM
To: Shukla, Sunita
Cc: Nussbaum, Robert; Q140229-S001@docs.fda.gov
Subject: Re: Q140229/S001

Dear Dr. Shukla,

We understand that Genelex will use buccal swabs for their DNA collection.

With best regards,
Flavia

On Mar 31, 2015, at 7:04 PM, "Shukla, Sunita" <Sunita.Shukla@fda.hhs.gov> wrote:

> Dear Ms. Chen,
>
> Could you please verify which sample type(s) Genelex will use to confirm your results (which you will obtain using dried blood spot samples)? Please let me know as soon as the information is available. Thank you, Sunita
>
> Sunita Shukla, MPH, Ph.D.
> Scientific Reviewer
> Division of Chemistry and Toxicology Devices
> Office of In Vitro Diagnostics and Radiological Health (OIR)

Food and Drug Administration
10903 New Hampshire Avenue
WO66, Room 5647
Silver Spring, MD 20993-0002
Tel. (301) 796-6406
Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: https://www.research.net/s/cdrhcustomerservice?O=500&D=530&B=535&E=&S=E

From: Shukla, Sunita
Sent: Tuesday, March 31, 2015 2:25 PM
To: 'Chen, Flavia'
Cc: Nussbaum, Robert; 'Q140229-S001@docs.fda.gov'
Subject: RE: Q140229/S001

Thank you for the attached validation data. I will let you know if we have any questions.

Sunita Shukla, MPH, Ph.D.
Scientific Reviewer
Division of Chemistry and Toxicology Devices
Office of In Vitro Diagnostics and Radiological Health (OIR)
Food and Drug Administration
10903 New Hampshire Avenue
WO66, Room 5647
Silver Spring, MD 20993-0002
Tel. (301) 796-6406
Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: https://www.research.net/s/cdrhcustomerservice?O=500&D=530&B=535&E=&S=E

THIS MESSAGE IS INTENDED ONLY FOR THE USE OF THE PARTY TO WHOM IT IS ADDRESSED. IT MAY CONTAIN INFORMATION THAT IS PRIVILEGED, CONFIDENTIAL, AND PROTECTED FROM DISCLOSURE BY LAW. If you are not the addressee, or a person authorized to deliver the document to the addressee, you are hereby notified that any review, disclosure, dissemination, copying, or other action based on the content of this communication is not authorized. If you have received this document in error, immediately notify the sender by e-mail or phone.

From: Chen, Flavia [mailto:Flavia.Chen@ucsf.edu]
Sent: Tuesday, March 31, 2015 1:23 PM
To: Shukla, Sunita
Cc: Nussbaum, Robert; 'Q140229-S001@docs.fda.gov'
Subject: Re: Q140229/S001

Dear Dr. Shukla,

Please find attached two confidential attachments:

1. Validation summary of pharmacogenetic testing of CYP2D6 CYP2C19 CYP2C9 CYP3A4 CYP3A5 and VKORC1
2. Validation summary of pharmacogenetic testing of Panel 3 (which includes CYP2B6 and CYP1A2)

These documents and the information they contain are being submitted by UCSF PI Dr. Robert Nussbaum under the terms of a Confidential Disclosure Agreement with Genelex Corporation to add

to the record file of Q140229/S001 for FDA review.

With best regards,
Flavia

From: <Shukla>, "Shukla, Sunita" <Sunita.Shukla@fda.hhs.gov>
Date: Tuesday, March 31, 2015 at 8:12 AM
To: Flavia Chen <flavia.chen@ucsf.edu>
Cc: Robert Nussbaum <Robert.Nussbaum@ucsf.edu>, "'Q140229-S001@docs.fda.gov'" <Q140229-S001@docs.fda.gov>
Subject: RE: Q140229/S001

Dear Ms. Chen,

Unfortunately, we will not be able to provide a signed letter. However, the validation information from Genelex you are providing to FDA will be added to the record file of this pre-submission. As such, and as with all submissions reviewed by the FDA, the contents are considered confidential.

Please note that when you e-mail the validation data, you should clearly state the contents of the e-mail, state that the contents are confidential, and that the information is being submitted in collaboration with UCSF to add to the record file of Q140229/S001 for FDA review.

We look forward to receiving your data today. Thank you, Sunita

Sunita Shukla, MPH, Ph.D.
Scientific Reviewer
Division of Chemistry and Toxicology Devices
Office of In Vitro Diagnostics and Radiological Health (OIR)
Food and Drug Administration
10903 New Hampshire Avenue
WO66, Room 5647
Silver Spring, MD 20993-0002
Tel. (301) 796-6406

From: Chen, Flavia [mailto:Flavia.Chen@ucsf.edu]
Sent: Monday, March 30, 2015 5:23 PM
To: Shukla, Sunita
Cc: Nussbaum, Robert; 'Q140229-S001@docs.fda.gov'
Subject: Re: Q140229/S001

Dear Dr. Shukla,

This afternoon I spoke with Dan Doherty and Howard Coleman at Genelex regarding sharing their

validation data with the FDA. They have asked that you kindly provide an email and, at a later date, a signed letter, stating that any Genelex documentation shared with the FDA pertaining to the evaluation of Q140229/S001 will be treated as confidential and distributed on a need-to-know basis solely for work related to this project. Once Genelex has received your email statement of confidentiality, I will be permitted to forward their validation data for your review. Kindly either email me this statement, which I will then forward to Dan, or cc me on your communication to him.

Dan Doherty
Genelex Corporation
3101 Western Ave., Suite 100
Seattle, WA 98121
Dan@genelex.com

With best regards,
Flavia

From: <Shukla>, "Shukla, Sunita" <Sunita.Shukla@fda.hhs.gov>
Date: Monday, March 30, 2015 at 9:37 AM
To: Flavia Chen <flavia.chen@ucsf.edu>
Cc: Robert Nussbaum <Robert.Nussbaum@ucsf.edu>, "'Q140229-S001@docs.fda.gov'" <Q140229-S001@docs.fda.gov>
Subject: RE: Q140229/S001

Dear Ms. Chen,

I'm following up with you regarding the Genelex validation data for your chosen confirmation method. Please have this information to us by noon tomorrow (3/31/15) since our feedback to you is due 3-4 days prior to our upcoming teleconference on 4/10/15. Please let me know if you have any questions. Thank you, Sunita

Sunita Shukla, MPH, Ph.D.
Scientific Reviewer
Division of Chemistry and Toxicology Devices
Office of In Vitro Diagnostics and Radiological Health (OIR)
Food and Drug Administration
10903 New Hampshire Avenue
WO66, Room 5647
Silver Spring, MD 20993-0002
Tel. (301) 796-6406
Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: https://www.research.net/s/cdrhcustomerservice?O=500&D=530&B=535&E=&S=E

From: Shukla, Sunita
Sent: Friday, March 27, 2015 3:48 PM
To: 'Chen, Flavia'
Cc: Nussbaum, Robert; Q140229-S001@docs.fda.gov
Subject: RE: Q140229/S001

Dear Ms. Chen,

Thank you for your email. Please email me the validation data (such as accuracy data) from Genelex for their orthogonal test method (Sequenom Mass Array 4) you plan to use for the genetic variants included in your panel. Please provide this information to me as soon as you can. Thank you, Sunita

Sunita Shukla, MPH, Ph.D.
Scientific Reviewer
Division of Chemistry and Toxicology Devices
Office of In Vitro Diagnostics and Radiological Health (OIR)
Food and Drug Administration
10903 New Hampshire Avenue
WO66, Room 5647
Silver Spring, MD 20993-0002
Tel. (301) 796-6406
Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: https://www.research.net/s/cdrhcustomerservice?O=500&D=530&B=535&E=&S=E

From: Chen, Flavia [mailto:Flavia.Chen@ucsf.edu]
Sent: Wednesday, March 25, 2015 8:32 PM
To: Shukla, Sunita
Cc: Nussbaum, Robert
Subject: Q140229/S001

Dear Dr. Shukla,

In February you received our IDE pre-submission supplement to Q140229 which addressed FDA's questions regarding Genelex, the company that will orthogonally confirm our pharmacogenetic test results. We have been in contact with Genelex and have requested and received validation data under the terms of a Confidential Disclosure Agreement (CDA) which covers their confidential trade secrets.

In preparation for our upcoming teleconference with the FDA on April 10th, 2015, are there any additional documents or agreements we should prepare, or that FDA will require, in order to discuss our IDE pre-submission?

With best regards,

Flavia Chen, MPH
Project Manager, UCSF U19