From: Lau, Matthew K. matthewklau@fas.harvard.edu

Subject: Fwd: Ant DNA caliper

Date: September 6, 2016 at 3:39 PM

To: Bowlen, Jeannette bowlen@fas.harvard.edu



Begin forwarded message:

From: Jim Bochicchio <jboch@broadinstitute.org>

Date: December 10, 2015 at 3:21:32 PM EST

To: "Lau, Matthew K." < matthewklau@fas.harvard.edu>

Cc: Sarah Young <<u>stowey@broadinstitute.org</u>>, Caroline Cusick

<ccusick@broadinstitute.org>
Subject: Re: Ant DNA caliper

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Date: December 10, 2015 at 9:52 AM

To: Jim Bochicchio jboch@broadinstitute.org

Cc: Lau, Matthew matthewklau@fas.harvard.edu, Caroline Cusick ccusick@broadinstitute.org



Hi Matt.

This is a tough question. Typically here for SNP calling we always want to utilize a near-complete reference genome. This assembly would not get you that. If you wanted a good reference genome, PacBio is the way to go, though I know there are issues with DNA quantity.

That being said, you may have lower standards, as insects are just more difficult to work with in general. I know for Anopheles our reference genome was a much lower quality than our standard organisms, but we still utilized it for SNP calling.

Let me explain what I think you can get from this assembly, and I'll let you judge if its sufficient:

This assembly will likely (no guarantee!) be on average composed of 5-10kb contigs and would capture somewhere between 80-98% of the genome (again thats my educated guess). Not knowing a lot about insect genes, I would imagine that you would be able to do a de novo annotation and call genes effectively in those contigs that are larger than gene size. With this annotated genome you very likely could align data from other organisms and call SNPs and also have information about which genes these SNPs came from. If that seems sufficient for your SNP calling purposes, then you're probably okay even though the reference won't be optimal.

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From: Lau, Matthew matthewklau@fas.harvard.edu

Subject: Re: Ant DNA caliper

Date: December 3, 2015 at 2:33 PM

To: Jim Bochicchio jboch@broadinstitute.org
Cc: Caroline Cusick ccusick@broadinstitute.org



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Date: December 2, 2015 at 12:52 PM

To: Lau, Matthew matthewklau@fas.harvard.edu Cc: Caroline Cusick ccusick@broadinstitute.org



Ok so do you want us to go with 250-284Mb or do you think your genome will be larger?

On Wed, Dec 2, 2015 at 12:43 PM, Lau, Matthew matthewklau@fas.harvard.edu> wrote:

Hi Jim, 250-284Mb is the range for the related genus Pogonomyrmex that has already been sequenced. Looking back at the source pub, the 3.8Mb might refer to the largest scaffold from their sequencing.

Matt

On Dec 2, 2015, at 12:31 PM, Jim Bochicchio <<u>iboch@broadinstitute.org</u>> wrote:

Hi Matt

Can you confirm the estimated genome size for us? I had 3.9Mb written in my notes from when we talked but after doing some web searches it looks like this should be more like 250-285 Mb.

Thanks Jim

On Wed, Dec 2, 2015 at 9:14 AM, Jim Bochicchio jboch@broadinstitute.org> wrote:

Hi Matt

We'll work up some option and send them to you soon.

Thanks Jim On Tue, Dec 1, 2015 at 7:10 PM, Lau, Matthew matthewklau@fas.harvard.edu wrote:

Hi Jim, no worries, thanks for getting that done.

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Cheers, Matt

Sent using <u>CloudMagic Email</u> On Mon, Nov 30, 2015 at 2:16 PM, Jim Bochicchio <<u>jboch@broadinstitute.org</u>> wrote:

Hi Matt

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Thanks Jim

On Mon, Nov 30, 2015 at 11:23 AM, Lau, Matthew matthewklau@fas.harvard.edu wrote:

Hey Jim, what's the scoop with the caliper?

Matt

Sent using CloudMagic Email

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Jim Bochicchio
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75 Ames Street
Cambridge MA 02142, USA

Phone: <u>617-714-8513</u>

Website: http://www.broadinstitute.org/scientific-community/science/platforms/broad-technology-labs

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