

EXHIBIT 27

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UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF LOUISIANA

KATHLEEN MOLLER

vs.

NO: 24-0228-WBV-DPC

MARTIAN SALES, INC.;
JOPEN, LLC, a Texas
limited Liability company;
JOHNSON FOODS, LLC, a Wyoming
limited liability company;
CAG Holdings, LLC, a Wyoming
limited liability company;
RMH HOLDINGS, INC., a Wyoming
corporation, et al.

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The remote video deposition of
CHRISTOPHER McCURDY, Ph.D.,
taken via Zoom web conference on
January 28, 2026, commencing at
approximately 9:56 a.m. EST

Job No. MDLG7836268

1 Q And then you see the "presence of
2 gastrointestinal, hepatic, renal, cardiovascular,
3 respiratory, autoimmune, endocrine, neurological,
4 or active psychiatric diseases" are part of the
5 exclusion criteria?

6 A Correct.

7 Q And we already reviewed Harmony Moller
8 had actual underlying cardiovascular conditions;
9 right?

10 A Yes. We've reviewed that on the
11 autopsy, yes.

12 Q So she would have been excluded from
13 the study; right?

14 MS. PAYTON:

15 Object to the form.

16 A I'm not sure that any of those were
17 known prior to that time.

18 MR. COWGILL:

19 Q Nonetheless, if they were known and
20 they were disclosed, she would not be part of
21 this study. Correct?

22 A Hypothetically, yes.

23 Q In short, this study is on healthy
24 individuals; right? No -- no underlying
25 conditions.

1 A Correct. That's normal for first
2 studies with new substances that are being
3 tested, because you want to know how those behave
4 in healthy volunteers. That's the FDA's rule as
5 well.

6 Q But do you agree that that limits the
7 applicability or generalizability of the results
8 to an individual that has underlying cardiac
9 conditions?

10 A Absolutely.

11 Q And the same is true for an individual
12 that has polypharmacy.

13 A Yes.

14 Q Were you aware that there were adverse
15 events reported during the course of
16 Dr. Huestis's study?

17 A Yes.

18 Q And that includes at least one report
19 of seizure-like activity?

20 A That's correct. And I believe when
21 they went back to review that, the paper states
22 that it was not actually seizure activity but was
23 determined to be some other effect. I'm not -- I
24 don't remember what the effect was.

25 Q And are you aware about the findings of

1 Q And when you refer to that 2- to 5-gram
2 range, are you referring to survey data from
3 users?

4 A Correct.

5 Q And, so, given those studies haven't
6 occurred, I just want to understand your opinion.
7 So do you believe kratom is ready to be safely
8 used as a pharmaceutical for those specific
9 medical purposes for humans?

10 A I believe it's safe to start
11 investigating those, yes. It's not ready to be
12 approved as a pharmaceutical for specific
13 indications because it has to go through the
14 process.

15 Q Do you think kratom is safe to be sold
16 over the counter for those purposes?

17 A No. Because you can't make a drug
18 claim without the FDA approval for making a drug
19 claim.

20 Q Can you identify any medical purpose
21 that over-the-kro- -- over-the-counter kratom can
22 be safely used for?

23 A I think the only thing that it can be
24 sold as, as much dietary supplements are sold
25 and -- or, you know, herbal products, if you

1 will, is sort of for promoting well-being. It's
2 not making a claim other than promoting
3 well-being. I believe that's -- that's what is
4 there.

5 There have been products labeled with
6 drug claims, and the FDA has gone after those
7 particular products.

8 Q Now, let's look back at Exhibit 2. And
9 we were talking about the FDA study. You stated
10 the ultimate goal of the study here was to obtain
11 pilot data on behavioral effects and safety
12 profile to inform future studies on human abuse
13 potential.

14 So the actual goal of the FDA study was
15 to just have that pilot data for further study?

16 MS. PAYTON:

17 Object to the form.

18 A That's -- that's pretty much what I
19 answered before, yes, and what I wrote in my
20 report.

21 The -- the FDA had to determine whether
22 or not kratom was safe and tolerable and at what
23 doses was it safe and tolerable so that they
24 could do further studies.

25 Case in point, the human abuse

1 potential trial that has been approved and is
2 currently underway.

3 MR. COWGILL:

4 Q And, so, the goal of the study was not
5 to establish safety of kratom for the entire
6 kratom-using populace in the US.

7 A We've -- we've answered that already.
8 Correct.

9 Q I was correct? Is that what you said?

10 A Yes.

11 Q All right. It looks like you actually
12 state here "it should be noted that none of the
13 above clinical studies were of sufficient power
14 to thoroughly characterize the safety profile of
15 kratom, nor were they sufficient to capture rare
16 or infrequent adverse events."

17 Is that correct?

18 A Correct.

19 Q So we need much -- we need much more
20 study to be able to thoroughly characterize the
21 safety profile of kratom?

22 MS. PAYTON:

23 Object to the form.

24 A We need more study. We need much more
25 study on -- on kratom all -- overall, yes.

1 Q But then --

2 A There's certain- -- there's certainly
3 the risk that, because we don't know, that all of
4 the substances could have contributed. But I
5 don't think one substance can be identified as
6 the -- the single substance.

7 Q That -- that wasn't my question. My
8 question was that diphenhydramine, promethazine,
9 and kratom all combined could cause and
10 contribute to QT prolongation.

11 MS. PAYTON:

12 Object to the form.

13 MR. COWGILL:

14 Q Is that not -- is that not right?

15 MS. PAYTON:

16 Asked and answered.

17 A Potentially.

18 MR. COWGILL:

19 Q In fact, you state, your -- your
20 closing sentence here states "all the substances
21 in the decedent's system could have
22 contributed" --

23 A Yes.

24 Q -- "a sudden cardiac death, and none
25 can be ruled out, as the combination has not been

1 evaluated in preclinical or clinical studies."

2 Right? That's your ultimate opinion in this
3 case.

4 A That's what I just said. Yes.

5 Q Okay. And, so, that includes kratom;
6 right? The kratom could have contributed to a
7 sudden cardiac death, and it cannot be ruled out.

8 MS. PAYTON:

9 Object to the form.

10 MR. COWGILL:

11 Q Is that correct?

12 A I said none of them can be ruled out.
13 Yes.

14 MR. COWGILL:

15 Q Which includes kratom; right?

16 A That would be amongst the three. Yes.

17 Q Amongst the three. So are we excluding
18 THC?

19 A No. I thought you were urn
20 specifically speaking of diphenhydramine,
21 promethazine. I apologize.

22 Q I'm just trying to make sure I
23 understand your opinion.

24 A If we put all of them, yeah, they could
25 have all contributed, everything that's there.

1 ray could hit it versus not, there's a lot of
2 factors that can influence powder once you take
3 it out of, you know, that sealed package. And,
4 over time, there will be a difference.

5 So we, as part of our studies, we do
6 stability, so controlled stability studies that
7 we see over time. Yes. Those products are going
8 to change. The same batch of powder that we put
9 into a stability chamber, in 30 days it still
10 meets specifications to -- to continue.

11 If we're using it in a study, in 60
12 days it still meets -- in almost a full year's
13 time, which is the longest we've done, they still
14 meet specification, but they fall -- there's a
15 constant decline in that material.

16 And, then, in terms of batch-to-batch
17 differences, that would be normal, because these
18 are natural products. You're gonna see different
19 batches having different -- different
20 concentrations.

21 Q And so you're -- you're talking about
22 the plant material used in studies for the
23 stability study. Do we see anything, any
24 content, go the opposite direction? So you talk
25 about a steady decline, still within specs for

1 the studies, but was there any increase in a
2 given alkaloid?

3 A So there are some increases in -- in
4 decomposition by products that we don't know what
5 the pharmacologies of those are associated, but
6 they're in very, very minor amount. Like I'm
7 saying, it's -- it's -- it's sort of decomposing
8 over time, but it's not decomposing at a rate
9 that would be concerning that we're gonna lose
10 the -- the pharmacology that we're -- we're
11 looking for or that would change the pharmacology
12 that we're looking for, if that makes sense.

13 Q It does.

14 Essentially, there -- the
15 decomposition --

16 Correct me if I'm wrong. This is how
17 I'm understanding it, so I just want to make
18 sure.

19 The decomposition results in slight
20 increase in certain alkaloids or even a new
21 alkaloid that has formed in decomposition, but
22 those only arise or increase at a small amount.

23 MS. PAYTON:

24 Object to the form.

25 A Well, that's correct. But, I mean, you

1 will see oxidative byproducts increasing. So --
2 but not with a significance.

3 So, for example, 7-hydroxy can increase
4 because it's an oxidative decompensation product
5 of mitragynine. But you're not gonna see it
6 increase to a level that would deem it not to
7 be --

8 It's not gonna be looking ever like
9 7-hydroxy becomes the major alkaloid present. Do
10 you know what I mean? It's always gonna be
11 increasing ever so slightly but not in what we
12 would consider a pharmacologically relevant
13 increase.

14 Q Is there a --

15 Well, let me unpack that. Because
16 talking about 7-hydroxymitragynine's potency
17 affinity as a pure opioid, stronger than
18 morphine, isn't even a slight increase
19 concerning?

20 A We were concerned in the initial
21 studies that it could be, but what we've -- what
22 we have never seen in the animal studies that
23 we've done is an increase in analgesic potency of
24 material.

25 So you would think, if you're getting

1 preclinical and human studies."

2 Did I read all that correctly?

3 A Yes. And three of those -- well, two
4 of those references, the Chang reference from
5 2025, is the same. And where it appears twice,
6 that's the same reference. And the Obeng
7 reference, those are from our work.

8 Q Right.

9 So I think this is in accordance with
10 what you were describing earlier; right? That
11 once the fresh leaf begins being processed, you
12 begin to see that oxidation occur where
13 mitragynine is shifting to 7-OH?

14 A Correct.

15 (DEPOSITION EXHIBIT NUMBER 14
16 WAS MARKED FOR IDENTIFICATION.)

17 MR. COWGILL:

18 Q And then Exhibit 14, this is a NIH
19 abstract. It's "Kratom consumed in Southeast
20 Asia versus products consumed in the US."

21 Have you ever seen this before?

22 A There is a paper that followed up, I
23 think, this abstract, where they indicated that
24 they saw no 7-hydroxy in freshly collected
25 leaves.

1 if you were to detail it out, but you've
2 basically got a left-handed and a right-handed
3 version.

4 Q Gotcha. Okay.

5 I'm gonna jump to the conclusion. It
6 says "the absence of 7-hydroxymitragynine in the
7 ethanolic liquid extract indicates that
8 mitragynine oxidative process has not occurred
9 during ethanol maceration, supporting a
10 hypothesis that 7-hydroxymitragynine is a
11 post-harvest oxidative derivative that is not
12 present in freshly collected leaves."

13 And, so, if I understand, that's in
14 accordance, what we saw a moment ago here;
15 essentially, that the 7-OH is forming in the
16 oxidative process after the plant is picked and
17 processed?

18 A Correct. And we were the first ones to
19 sort of report that and indicate that. And for a
20 long time, a lot of people criticized that. And,
21 so, actually, we were very pleased when Marek and
22 Vickna published that paper, because it provided
23 an independent laboratory that concurred with the
24 findings that we had.

25 Q And, so, there is ultimately a

1 fresh leaf, and we wanted to stop all the
2 metabolic processes in the leaf. So we took
3 leaf, we put it into liquid nitrogen, and we cut
4 the leaf off inside liquid nitrogen, so at minus
5 78 degrees centigrade, and then we evaporated
6 that liquid nitrogen off. All of the enzymatic
7 process was done. That leaf material was then
8 tested for 7-OH, and we detected --

9 We didn't quantify. There's a big
10 difference between quantification and detection.
11 Right?

12 -- we detected the presence of 7-OH
13 even in those leaves that we cut off in liquid
14 nitrogen.

15 So, again, it's not coming to the limit
16 of quantification. So it can't be quantified.
17 But it's present.

18 Q And, so --

19 All right. Now, I want to talk about a
20 couple of other differences; right? So we've got
21 this whole leaf. It's picked, and then it's made
22 into the decoction with water, which 7-OH could
23 be present in that, or it's chewed. Right?

24 A Right.

25 Q Then we have this other process of

1 drying and grinding. And we've also talked about
2 the oxidation occurs as the product sits; right?
3 So this product is dried, ground, and then
4 shipped across an ocean and processed in the US.
5 So there's -- there's a time lag between the
6 beginning of the oxidative process to it actually
7 going to an end consumer. Right?

8 A Correct.

9 Q And throughout that process, the
10 literature would indicate that that oxidative
11 process may be increasing the presence of 7-OH in
12 that product. Right?

13 A Yes. But is it to any appreciable
14 extent? I think that's the question that needs
15 to be answered.

16 So when you're talking about what we
17 have analyzed in the marketplace within the last
18 couple of years, leaf material in the
19 United States, the amount of 7-hydroxy that's
20 present in that leaf material is not different
21 from the amount that's present in a decoction
22 that's made in Malaysia.

23 So, yes, they are different materials
24 that are being placed, one being the fresh leaf
25 with, you know, all the moisture content in it,