PENNSTATE

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November 13, 2018

Submitter: PA Dept of Agriculture, Bureau of Food Safety and Laboratory Services

Submitter Provided Sample ID: ATRS-HHT, ATRS-HHU, ATRS-HHV, ATRS-HHY

Histologic Evaluation Summary Report

History:

The submitter has requested histologic evaluation of four samples. Samples are composed of four different commercial dog chews, two of which are reported to be natural animal hide chews, and two of which are reported to be no-hide chews. The submitter has requested this analysis to determine whether or not animal hide (skin and related structures) is present in the no-hide products, using the natural animal hide chews as positive controls.

Samples examined are labelled as follows:

1) No-hide chicken chews
2) No-hide salmon stix
3) Rawhide dog chews
4) Beef hide chip rolls

The samples were delivered to ADL-PSU on October 26, 2018 at 10:19 by UPS. Subsamples for fixation/histology were collected at 11:25 on that same date. The subsamples were submitted for processing and staining by hematoxylin and eosin at 09:50 on October 29. Masson trichrome histochemical staining was requested on one control and one no-hide slide on November 2. The evaluation was completed on November 5, 2018. Communication with the submitter confirmed on November 8 that no additional analysis was requested by this laboratory.

Histology Findings:

Hematoxylin and Eosin

Two slides each of the four samples were examined. All slides examined were composed of intersecting bundles of eosinophilic fibrillar material (suggestive of collagen or muscle) with abundant clear space separation artifact widely separating the bundles. No other anatomic structure is visible within the sections. No cellular detail is apparent and no nuclear, cytoplasmic, or other differential staining is discernable.

Masson Trichrome

For experimentation, one section each of the no-hide salmon stix and beef hide chip rolls were stained by the Masson trichrome method. This method stains muscle and keratin red, and stains collagen blue; therefore, this method was chosen to aid in the distinction between collagen and muscle. The no-hide salmon stix slide retained more red than blue staining, however the pattern of stain uptake was irregular and apparently affected by artifact as individual tissue bundles stained heterogeneously. This is not a natural pattern of tissue staining and, thus, is interpreted as an artifact of the animal tissue processing. This same heterogeneous effect was observed in the beef hide chip rolls, which retained more blue than red stain, however the pattern of stain uptake was irregular and apparently affected by artifact as previously described. Both sections stained equivocally, thus no further slides were stained by this method.

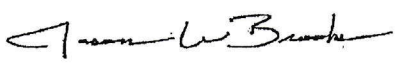
Conclusions and Summary:

The analysis performed was not able to determine whether or not animal hide (skin and related structures) is present in the samples examined. It appears that the commercial processing of the animal products has so badly damaged the integrity of the original tissues that they are no longer identifiable by this method.

Disposition of Evidence:

Remaining tissue samples are stored in a locked evidence cabinet at the Penn State Animal Diagnostic Laboratory. Samples will be preserved for 60 days (until December 26, 2018) unless otherwise requested by the submitter. Following that date, samples will be destroyed unless otherwise requested in writing.

The facts stated herein are true and correct to the best of my knowledge and belief.



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