

## Collagen Alignment and Recurrence of DCIS—Letter

Louis Libbrecht<sup>1</sup>, Kathleen Lambein<sup>2</sup>, Mieke Van Bockstal<sup>3</sup>, and Hannelore Denys<sup>4</sup>

In a recent publication, Conklin and colleagues reported that an orientation of collagen fibers perpendicular to the duct in the periductal stroma of ductal carcinoma *in situ* (DCIS) was correlated with features reported to be associated with poor prognosis, including comedo-necrosis and HER2 positivity (1).

We previously reported that the stroma surrounding DCIS can show either a sclerotic or a myxoid aspect, the latter being defined as an amorphous appearing stroma containing loosely arranged collagen fibers (2). In our studies, myxoid stroma was associated with loss of stromal decorin expression, with recurrence and with comedo-necrosis and HER2 positivity (2, 3).

The fact that both collagen fiber architecture and myxoid stroma are correlated with comedo-necrosis and HER2 positivity leads us to the obvious question whether there also exists a

relation between collagen fiber architecture and myxoid stroma. The finding that targeted disruption of decorin leads to profound changes in collagen fiber architecture in mice skin (4) further justifies our question.

Therefore, it might be relevant that Conklin and colleagues evaluate whether perpendicular orientation of collagen fibers in the cases they studied is associated with a myxoid aspect of the periductal stroma. Myxoid stroma can easily be assessed on hematoxylin/eosin-stained slides (2).

The presence of such an association would mean that there exists a periductal interplay between the protein decorin, the myxoid substance in the stroma, and the architecture of collagen fibrils and that this interplay likely has a role in the behavior and recurrence risk of DCIS. Clearly, such an interplay would merit further investigation, and it would also imply that our definition of myxoid stroma should be refined by changing it from "an amorphous appearing stroma containing loosely arranged collagen fibers" to "an amorphous appearing stroma containing collagen fibers in a preferential perpendicular orientation relative to the duct."

<sup>1</sup>Department of Pathology, Saint-Luc University Hospital, Brussels, Belgium.

<sup>2</sup>Department of Pathology, AZ Sint-Lucas Hospital Ghent, Ghent, Belgium.

<sup>3</sup>Department of Pathology, University Hospital Ghent, Ghent, Belgium.

<sup>4</sup>Department of Oncology, University Hospital Ghent, Ghent, Belgium.

**Corresponding Author:** Louis Libbrecht, Department of Pathology, University Hospital Saint-Luc, Avenue Hippocrate 10, Brussels 1200, Belgium. Phone: 320-2764-6735; Fax: 320-2764-6934; E-mail: louis.libbrecht@uclouvain.be

doi: 10.1158/1055-9965.EPI-17-1071

©2018 American Association for Cancer Research.

## Disclosure of Potential Conflicts of Interest

No potential conflicts of interest were disclosed.

Received November 20, 2017; revised January 19, 2018; accepted January 29, 2018; published first May 1, 2018.

## References

- Conklin MW, Gangnon RE, Sprague BL, van Germert L, Hampton JM, Eliceiri KW, et al. Collagen alignment as a predictor of recurrence after ductal carcinoma *in situ*. *Cancer Epidemiol Biomarkers Prev* 2018;27:138–45.
- Van Bockstal M, Lambein K, Gevaert O, De Wever O, Praet M, Cocquyt V, et al. Stromal architecture and periductal decorin are potential prognostic markers for ipsilateral locoregional recurrence in ductal carcinoma *in situ* of the breast. *Histopathology* 2013;63:520–33.
- Van Bockstal M, Lambein K, Denys H, Braems G, Nuyts A, Van den Broecke R, et al. Histopathological characterization of ductal carcinoma *in situ* (DCIS) of the breast according to HER2 amplification status and molecular subtype. *Virchows Arch* 2014;465:275–89.
- Danielson KG, Baribault H, Holmes DF, Graham H, Kadler KE, Iozzo RV. Targeted disruption of decorin leads to abnormal collagen fibril morphology and skin fragility. *J Cell Biol* 1997;136:729–43.

# BLOOD CANCER DISCOVERY

## Collagen Alignment and Recurrence of DCIS—Letter

Louis Libbrecht, Kathleen Lambein, Mieke Van Bockstal, et al.

*Cancer Epidemiol Biomarkers Prev* 2018;27:613.

**Updated version** Access the most recent version of this article at:  
<http://cebp.aacrjournals.org/content/27/5/613>

**Cited articles** This article cites 4 articles, 2 of which you can access for free at:  
<http://cebp.aacrjournals.org/content/27/5/613.full#ref-list-1>

**E-mail alerts** [Sign up to receive free email-alerts](#) related to this article or journal.

**Reprints and Subscriptions** To order reprints of this article or to subscribe to the journal, contact the AACR Publications Department at [pubs@aacr.org](mailto:pubs@aacr.org).

**Permissions** To request permission to re-use all or part of this article, use this link  
<http://cebp.aacrjournals.org/content/27/5/613>.  
Click on "Request Permissions" which will take you to the Copyright Clearance Center's (CCC) Rightslink site.