

Conference abstract PO-66

## Line of Breakage in the Testa of Seeds of Various Species of the Genus *Senna*

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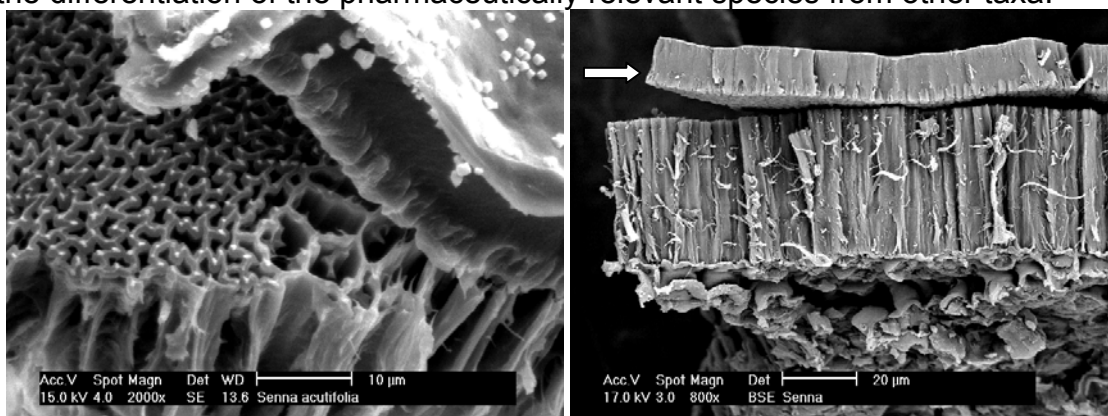
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Sci Pharm. 2009; 77: 265

doi:10.3797/sciopharm.oephg.21.PO-66

*Senna alexandrina* – better known as the two species *S. angustifolia* and *S. acutifolia* which lately have been united under the species *Senna alexandrina* due to their morphological similarity – has a long tradition in medicine mainly because of its use as a laxative. Although the anatomy of the seed coat can be of much significance for taxonomic matters, surprisingly there does not exist a consistent interpretation of the structure of the outer layer of the testa. Contradictory statements on the structure beneath the cuticle can be found also in recent literature [1]. First exploratory studies [2] suggested the existence of a predetermined line of breakage running through the palisade-like epidermis cells beneath the cuticle in *S. alexandrina* (see arrow in figure below). The present investigation clarifies the exact anatomy of the outer part of the testa and its behaviour when soaking in water by means of scanning electron microscopy and fluorescence microscopy. For comparison, seeds from *S. tora*, *S. sophera* and *S. occidentalis* have also been investigated. Although this special anatomical structure was found in all examined species, the position of the line of breakage in the palisade layer seems to provide a characteristic feature for the differentiation of the pharmaceutically relevant species from other taxa.



*S. acutifolia*, line of breakage, SEM, 2000x (left), *S. acutifolia*, transverse section, SEM, 800x (right)

- [1] Srivastava M, Srivastava S, Khaton S, Rawat AKS, Mehrotra S, Pushpangadan P. Pharmacognostical Evaluation of *Cassia angustifolia* seeds. Pharm Biol. 2006; 44, 202–207. doi:10.1080/13880200600686442
- [2] Länger R, Demir H, Ölzant S. Ultrastructure of the Testa of the Seeds of *Cassia angustifolia* and *C. senna*. Abstract. Deutsche Pharmazeutische Gesellschaft, Univ. Regensburg. Jahrestagung 2004.