

博士論文（要約）

**Role of stemness-related molecules in the endometrium and
endometriosis in the pathophysiology of endometriosis**

（子宮内膜症の病態生理における子宮内膜および子宮内膜
症における幹細胞関連分子の役割）

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Endometriosis, which can affect the entire life cycle and present at all body compartments, remains an enigmatic disease. Retrograde flux of menstrual bleeding containing a population of progenitor/stem cells is essential for the pathogenesis of endometriosis. The interacting endocrine, immunologic, proinflammatory, and proangiogenic processes are involved in the development of endometriosis.

ALDH1A, comprising ALDH1A1, A2, A3 three isotypes, was widely regarded as a cancer stem cell (CSC) hallmark. Noteworthy is the fact that the existence of stem/progenitor cells in endometrium has been a subject of interest, but no definitive information of ALDH1A in endometriosis are presently available. LOXL2, which promotes of elastin and collagen in the extracellular matrix (ECM) and meanwhile participates in the intracellular Epithelial-to-mesenchymal transition (EMT) and cell differentiation, is linked to cancer pathogenesis, prooncogenic angiogenesis, stemness and fibrosis.

In this study, expression levels of ALDH1A isozymes in endometrium and endometriosis were evaluated with immunohistochemistry (IHC). Co-localized ALDH1A1 with N-cadherin with double immunofluorescence staining. ALDEFLUOR assay detected the ALDH1A1 activity in endometrial and endometriotic cells. About LOXL2, we performed IHC, QPCR and Western blot to check the expression pattern. ELISA, Wound healing and Transwell assay were tested to detect endometriotic cell secretion, migration and invasion, respectively.