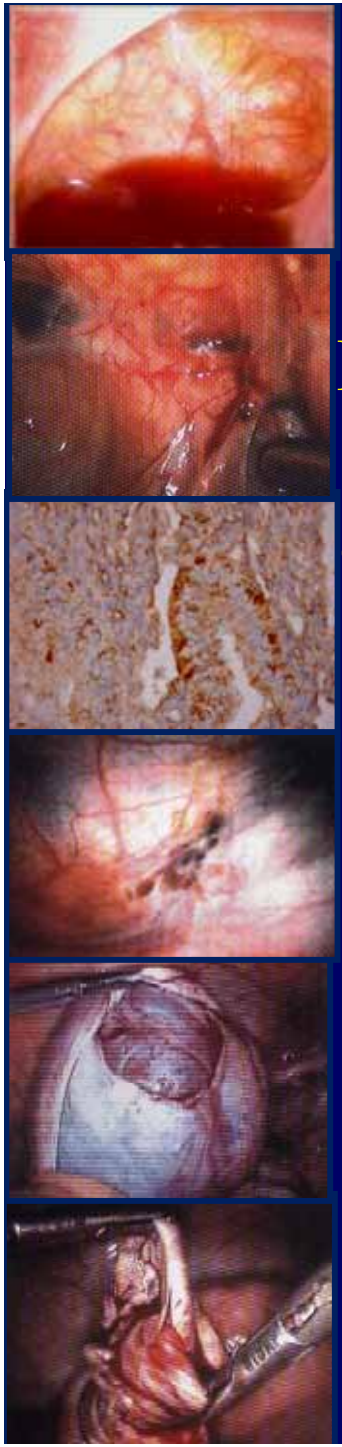

European Society of Human Reproduction and Embryology

Impaired endometrial expression of activin-related proteins and receptors mRNAs: evidence for an endometrial dysfunction in endometriotic patients.

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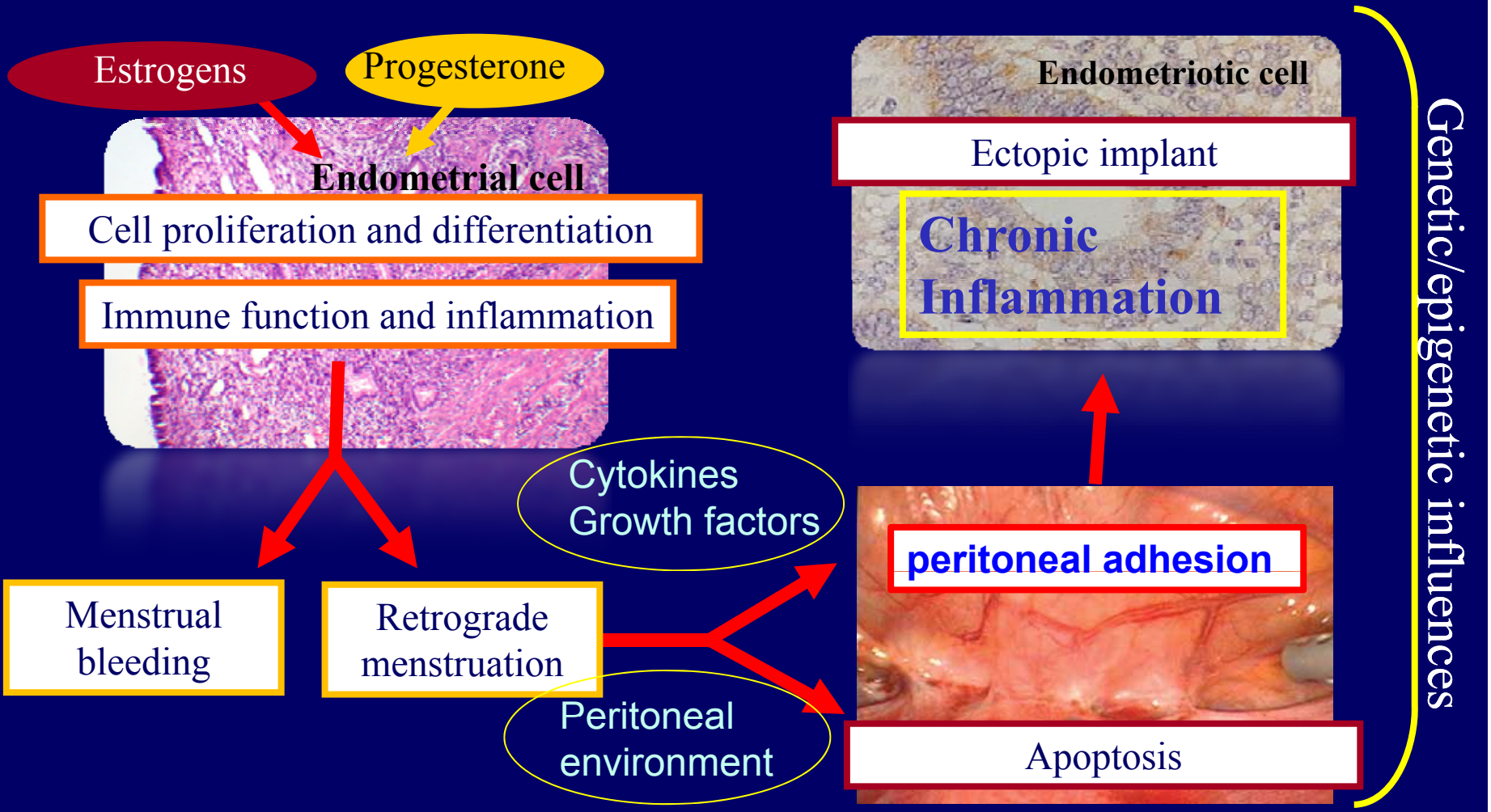
Pathogenesis of endometriosis

- Pathogenesis of the disease remains uncertain.
- Endometriosis is a sex hormones dependent disorder.



Activins

activin A

βA

βA

232 amino-acids

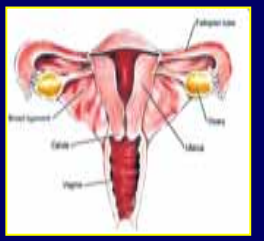
activin B

βB

βB

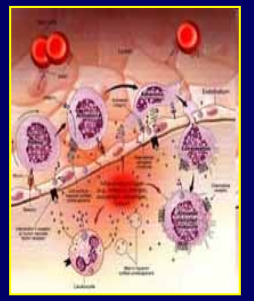
230 amino-acids

Reproduction (FSH release, ovarian folliculogenesis, endometrial function)



Cell differentiation

Inflammation



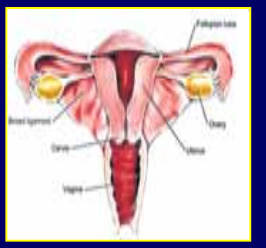
Activin antagonists and receptors modulators

Nodal

Cripto

Activin receptor modulators

Reproduction (FSH release, ovarian folliculogenesis, endometrial function)



Inhibin α subunit

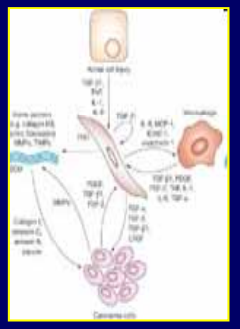
Activin antagonist

Follistatin

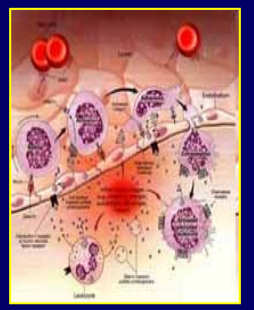
288 amino-acids

Activin binding protein

Cell differentiation



Inflammation



To evaluate in patients with endometriosis at different phases of endometrial cycle the pattern of activin A and activin receptor/receptor modulators and antagonist/binding proteins in eutopic endometrium.

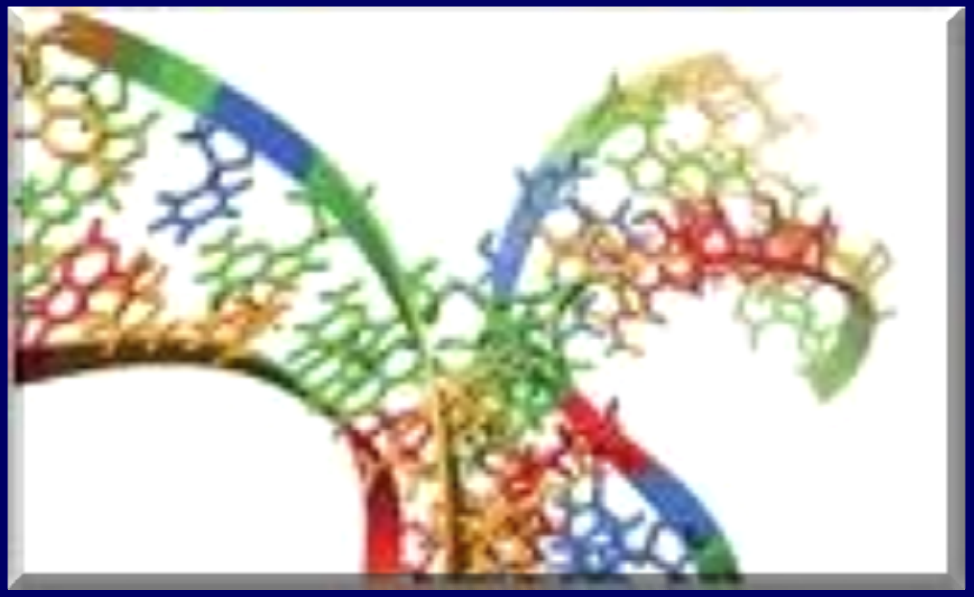
Patients

- 96 patients
  - 48 controls
  - 48 endometriotic patients
- Age: 25 to 39 years
- Regular menstrual cycle
- Patients with endometrioma who underwent laparoscopic treatment and healthy women (controls) who underwent laparoscopy for tubal sterilization.

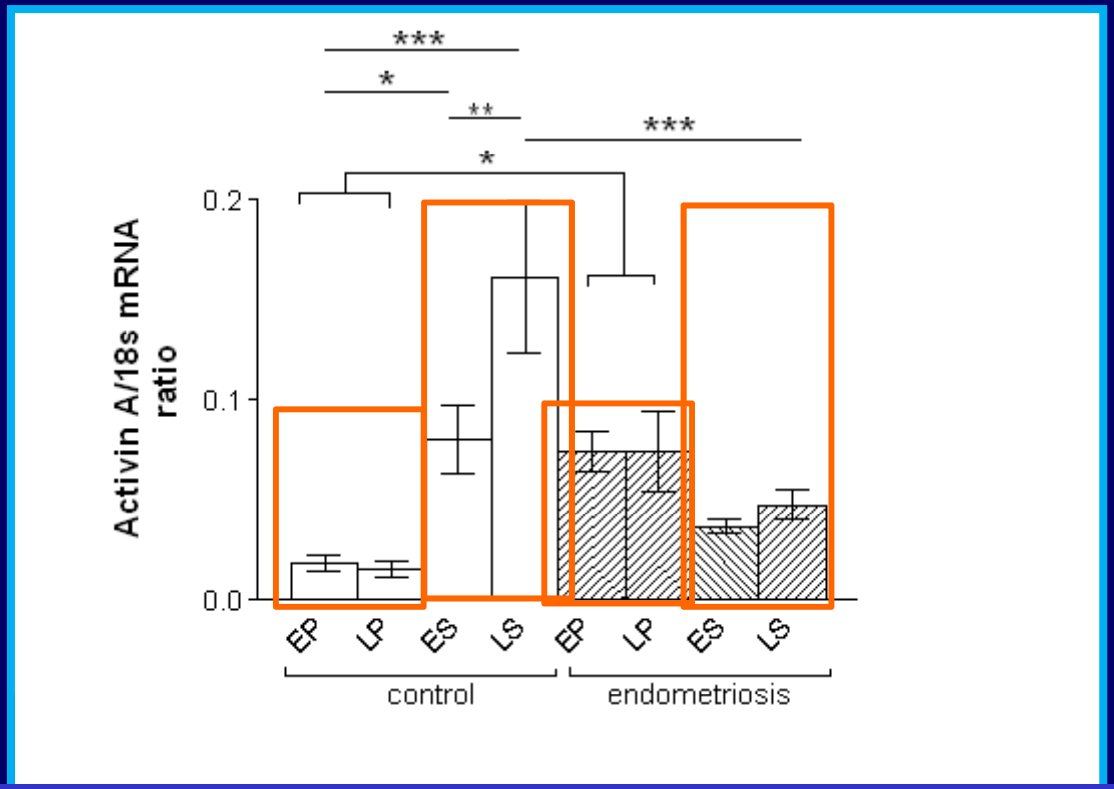
Methods

- RNA extraction and cDNA preparation Real time Polymerase Chain Reaction were used to evaluate mRNA expression of:

⇨ activin A
⇨ nodal
⇨ cripto
⇨ inhibin α
⇨ follistatin



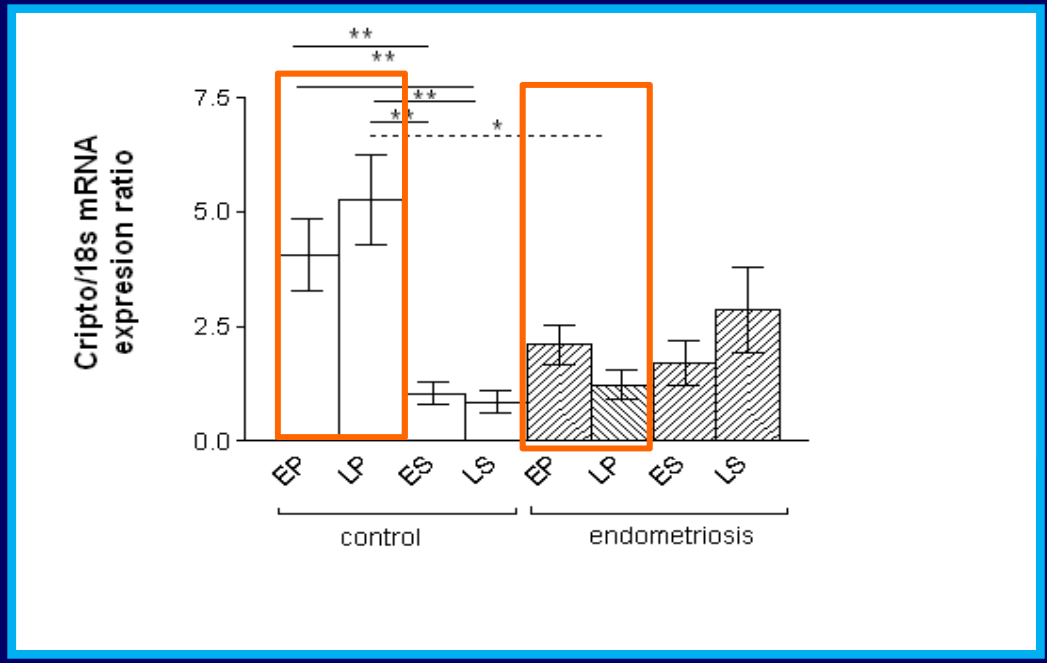
Results- Activin A



There is an overexpression of activin A in the proliferative phase and a lack in the secretory phase in patients with endometriosis

Results

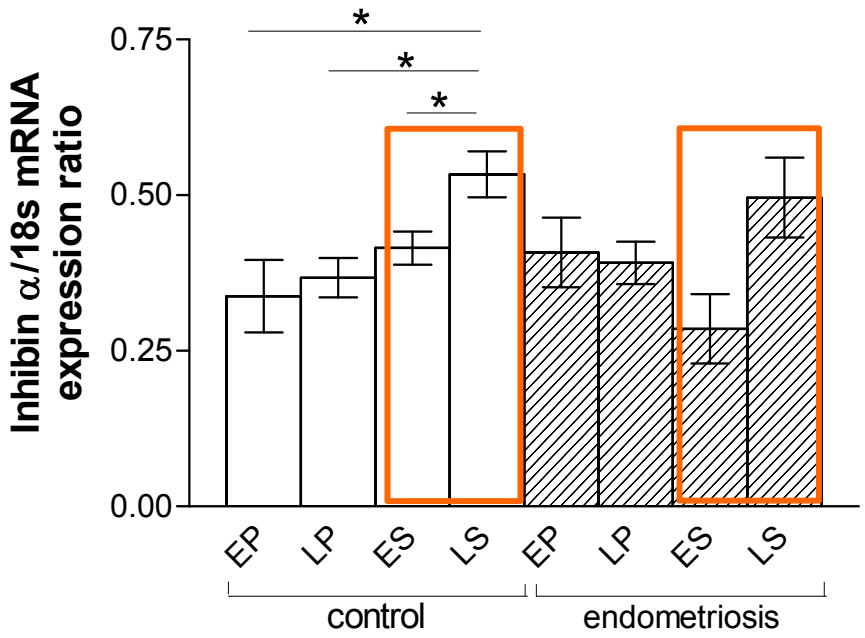
Cripto- Activin receptor antagonist



Cripto is higher in proliferative phase in controls and did not change during the endometrial cycle in endometriotic patients.

Results

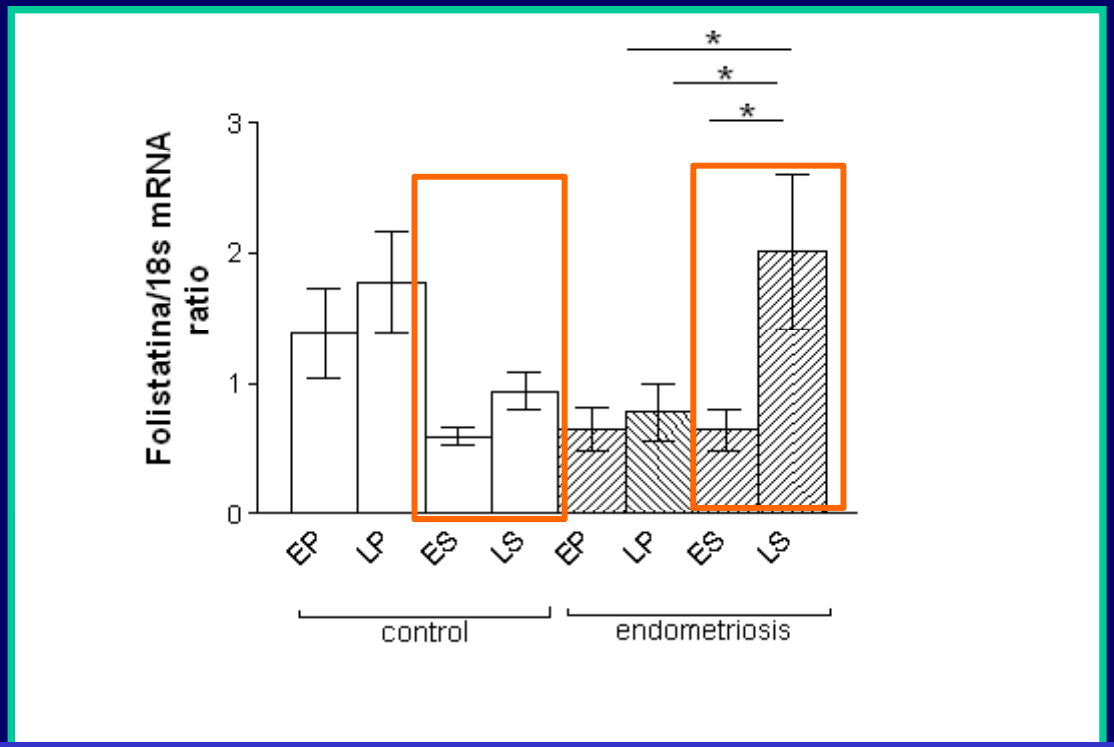
Inhibin α- activin antagonist



Inhibin α is higher in secretory phase in controls and did not change during the menstrual cycle in patients with endometriosis.

Results

Follistatin- activin binding protein

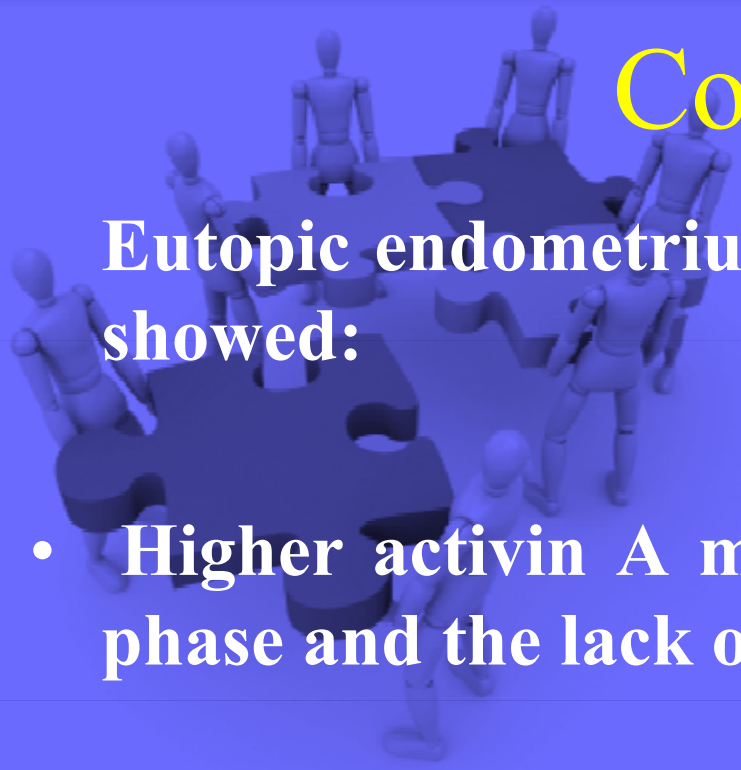


Follistatin did not change during menstrual cycle in controls and is higher expressed in seretory phase in endometriosis. Follistatin could induces angiogenesis and as an activin binding protein, contributes to an impaired decidualization in these patients.

Results

- Activin A mRNA expression pattern was different between controls and endometriotic patients;
- Proliferative and secretory phase in patients with endometriosis is characterized by impaired activin A, cripto, inhibin α and follistatin mRNA expression.
- Deranged changes of cripto (activin receptor antagonist), inhibin α and follistatin suggest an endometrial dysfunction of activin A pathway in endometriosis.

Conclusions



Eutopic endometrium of patients with endometriosis showed:

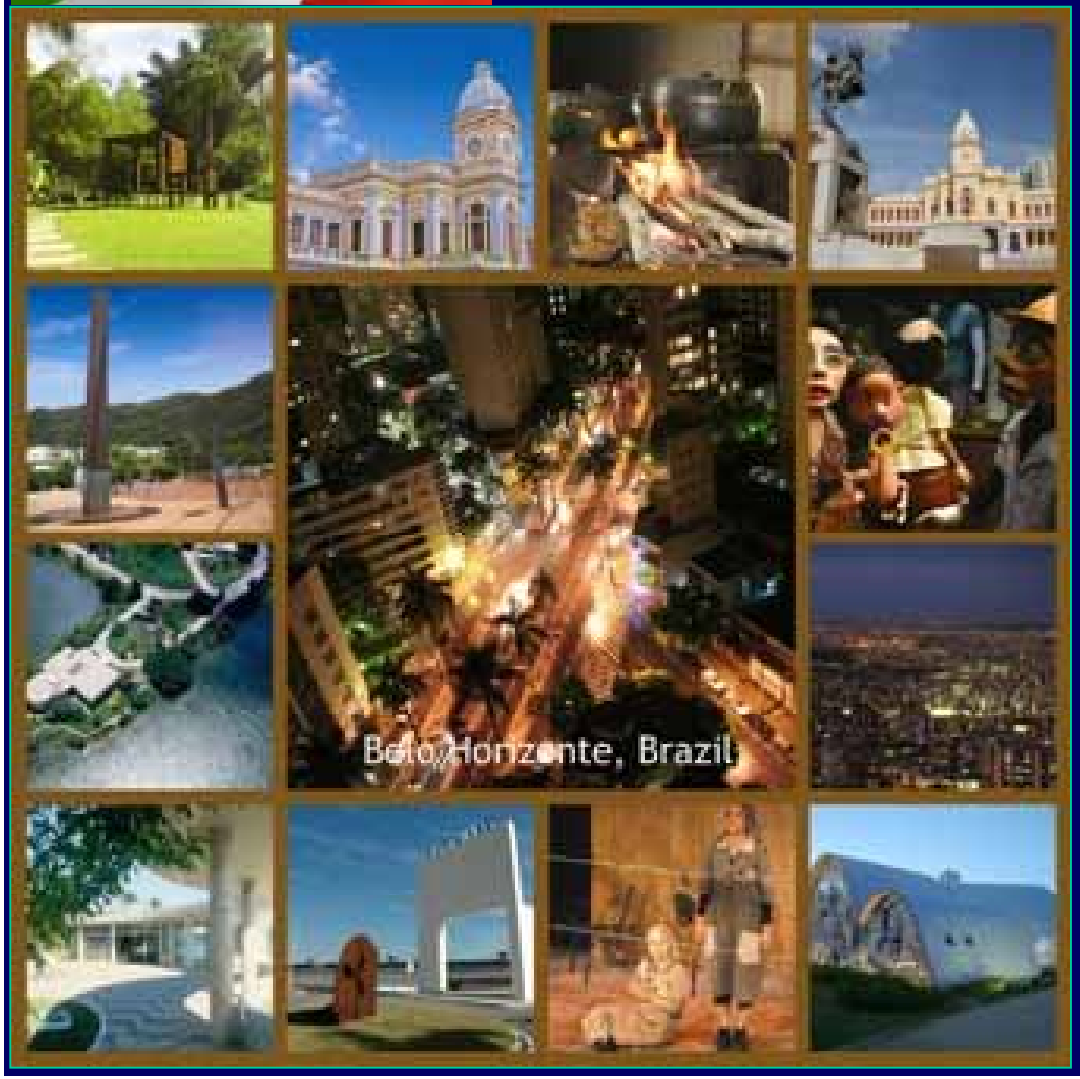
- **Higher activin A mRNA expression in proliferative phase and the lack of late secretory phase peak;**
- **Did not show endometrial cycle-related changes of cripto and inhibin α mRNA; and**
- **Revealed a different pattern of follistatin mRNA.**

Conclusions

- **Dysfunction of activin A pathway in endometrium of endometriosis may be part of the infertility occurrence in women with endometriosis.**

- **New studies are necessary to better understand the role of activin and activin-related proteins in endometriosis pathogenesis and infertility.**

Welcome



SGI's 4th International Summit
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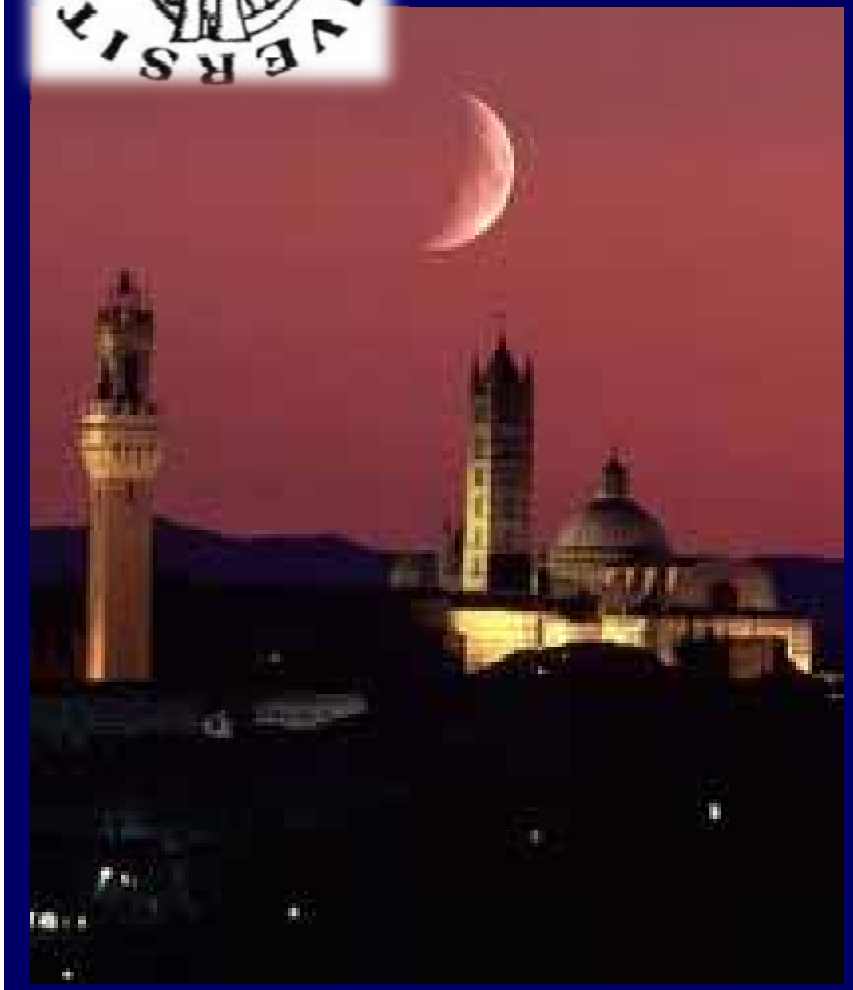
Belo Horizonte, Brazil
May 17-18, 2011

Thank you



Belo Horizonte