

# COMPARATIVE EXPRESSION OF FIBROBLASTIC MARKERS IN THE INTERSTITIUM OF FETAL, NORMAL ADULT AND GLOMERULONEPHRITIC KIDNEYS



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## Background

Fibroblasts are mesenchymal cells that are normally present in the kidney interstitium, and their presence in larger number in fibrotic interstitium, as well as their role in the process of fibrosis has been widely documented.

## Aims

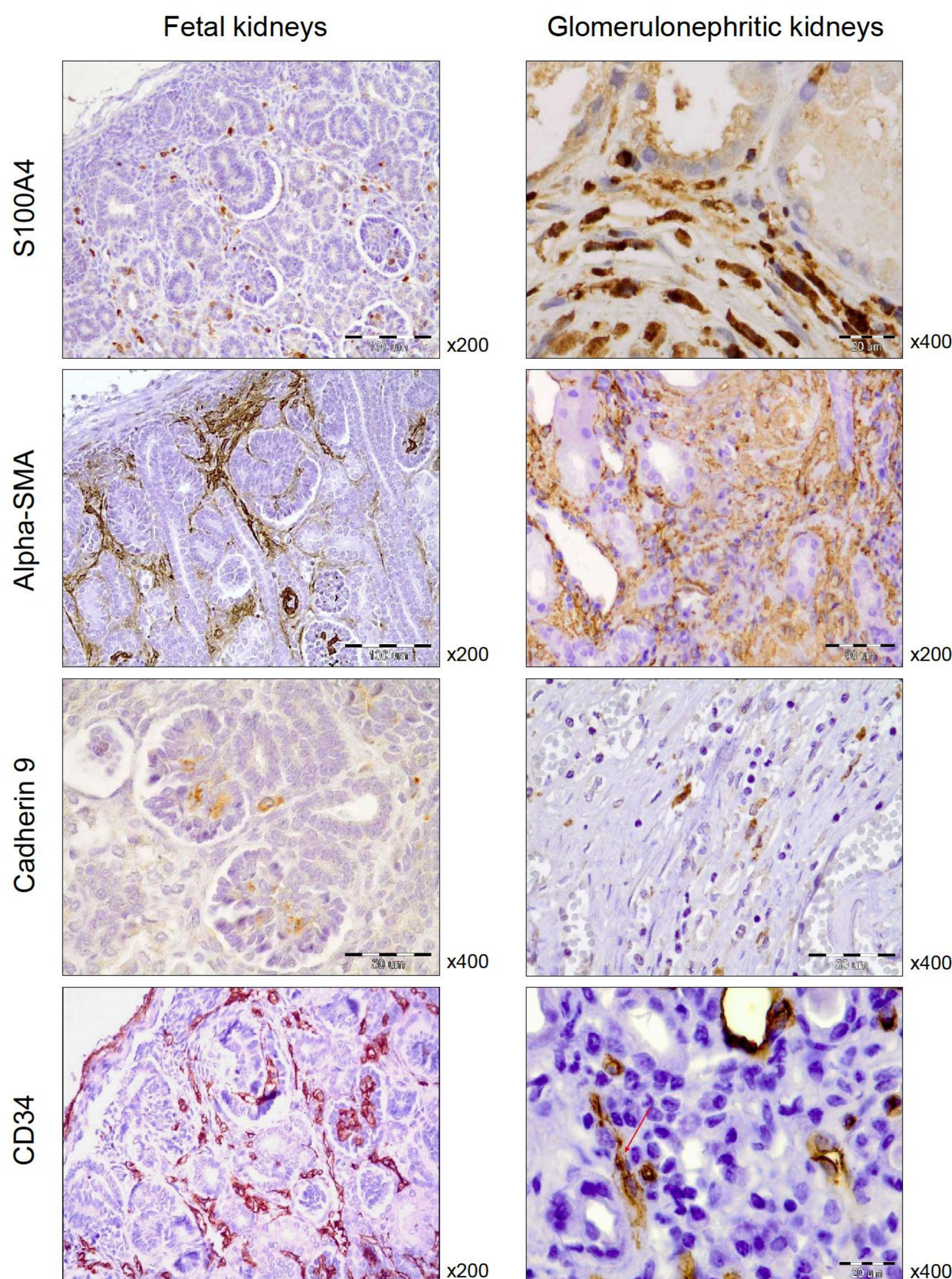
We aimed to compare the expression of (myo)fibroblast markers in fetal, normal adult and glomerulonephritic kidneys.

## Methods

We performed immunohistochemical stainings with Vimentin, alpha-SMA, S100A4, Cadherin 9 and CD34 on formalin fixed, paraffin embedded tissue samples of 20 fetal, 40 normal adult and 40 kidneys previously diagnosed with glomerulonephritis and with interstitial fibrosis of at least 10%.

## Results

- The common mesenchymal marker Vimentin was widely expressed in the interstitium of all three groups of tissue with constant intensity of signal.
- All of the other fibroblast markers were present in the interstitium of the fetal kidneys, with variable intensity of the signal.
- S100A4 and Cadherin 9 were present in the normal adult kidney's interstitium only in single cells, while alpha-SMA and CD34 were absent.
- The interstitium of glomerulonephritic kidneys hosted cells positive for all markers, including alpha-SMA and CD34.
- Thus, the fetal kidney fibroblasts presented with an immunophenotype S100A4+/SMA+/Cadherin9+/CD34-.
- Interstitial fibroblasts in normal adult tissue had lost the "activity" marker SMA and expression of CD34.
- In glomerulonephritic kidneys, the interstitial fibroblasts gained the immunophenotype of myofibroblasts.



## Conclusions

We conclude that the fibroblasts in the glomerulonephritic kidneys re-express the fetal phenotype of the blastemic interstitial cells with emphasized re-expression of alpha-SMA after fibrogenic stimulation.

## References

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