

PANCREATIC GLUCAGON-LIKE-PEPTIDE-1 RECEPTOR EXPRESSION IN CONGENITAL HYPERINSULINISM

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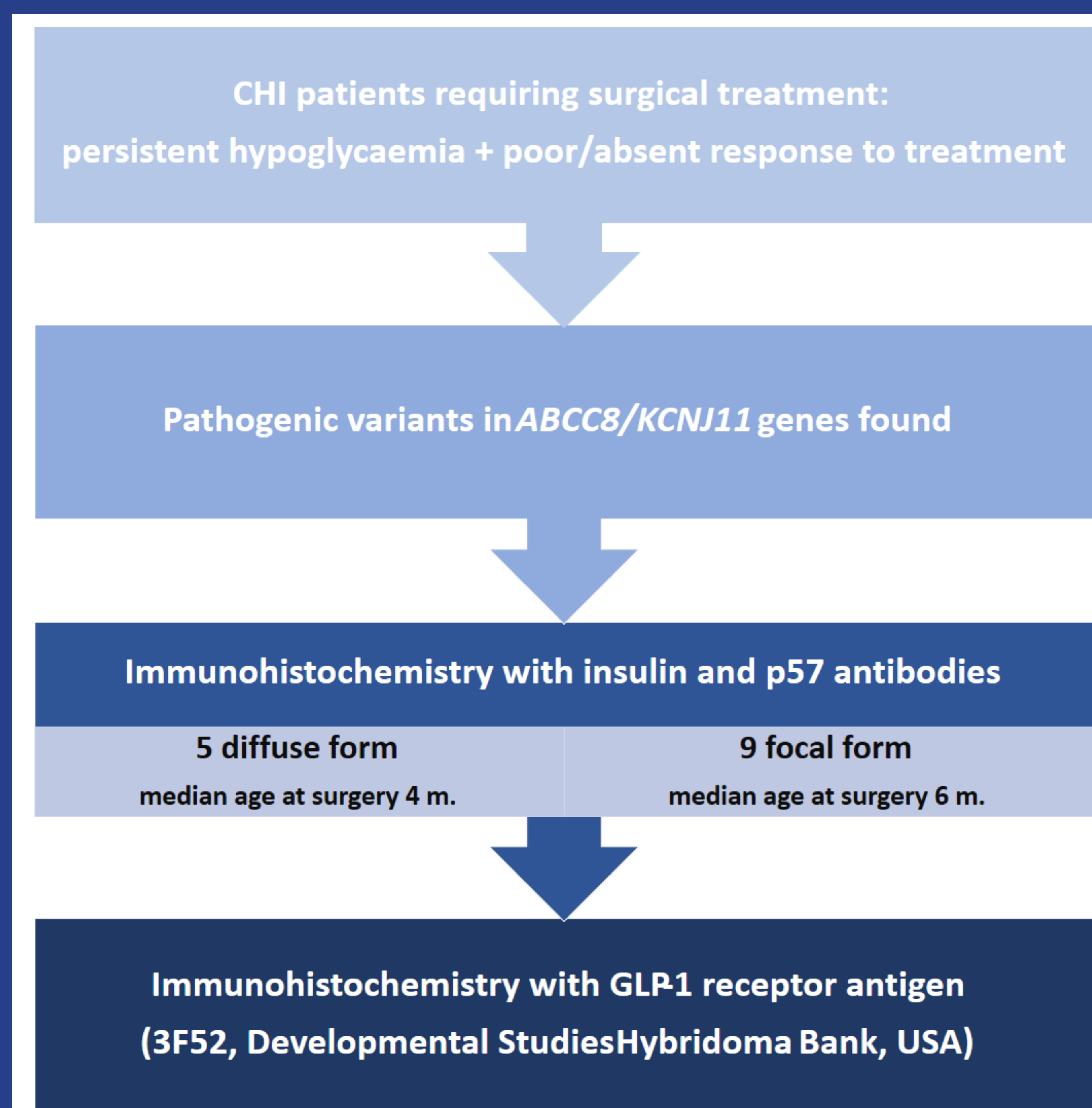
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INTRODUCTION

- Congenital hyperinsulinism (CHI) is the most common cause of neonatal persistent hypoglycaemia.
- Novel diagnostic and treatment approaches with the use of glucagon-like-peptide-1 (GLP-1) have been developed. PET scan with GLP-1 agonist (exendine-4) has been proposed for differential diagnosis of diffuse and focal CHI. Infusion with GLP-1 antagonist is promising for patients who are unresponsive to standard treatment.
- However, there is insufficient information regarding GLP-1 receptor expression in pancreatic tissue in patients with CHI.

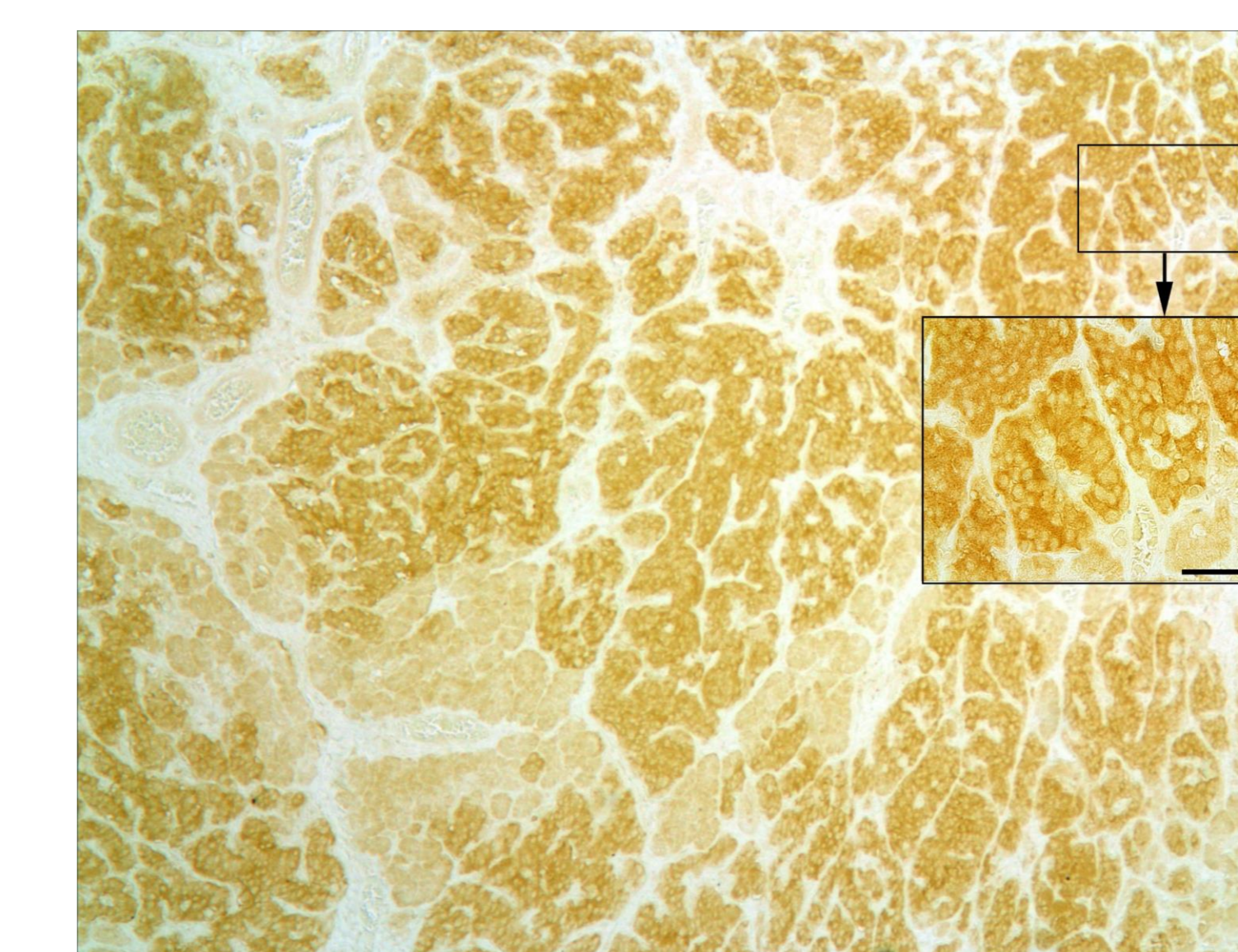
PATIENTS AND METHODS



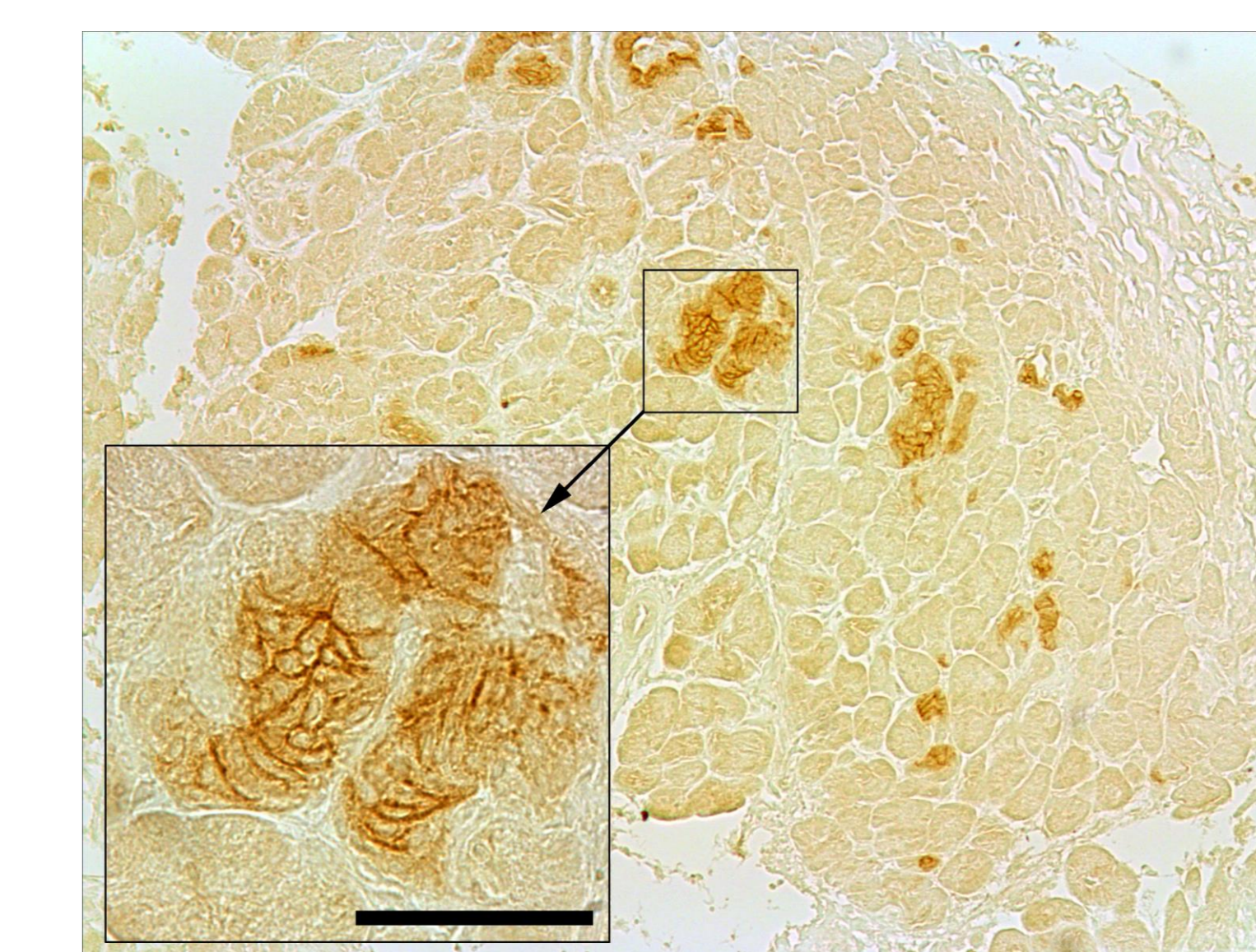
RESULTS

- Based upon immunohistochemistry with GLP-1 receptor antibodies, a focal lesion and diffuse CHI tissue differ significantly.
- A focus has a form of endocrine islets confluence with apparent staining.
- There are no evident discrepancies in diffuse CHI and non-focal region of focal CHI. Pancreatic islets and single endocrine cells express GLP-1 receptor in both groups.
- Surprisingly, acinar cells show mild but positive staining with GLP-1 receptor antigen.

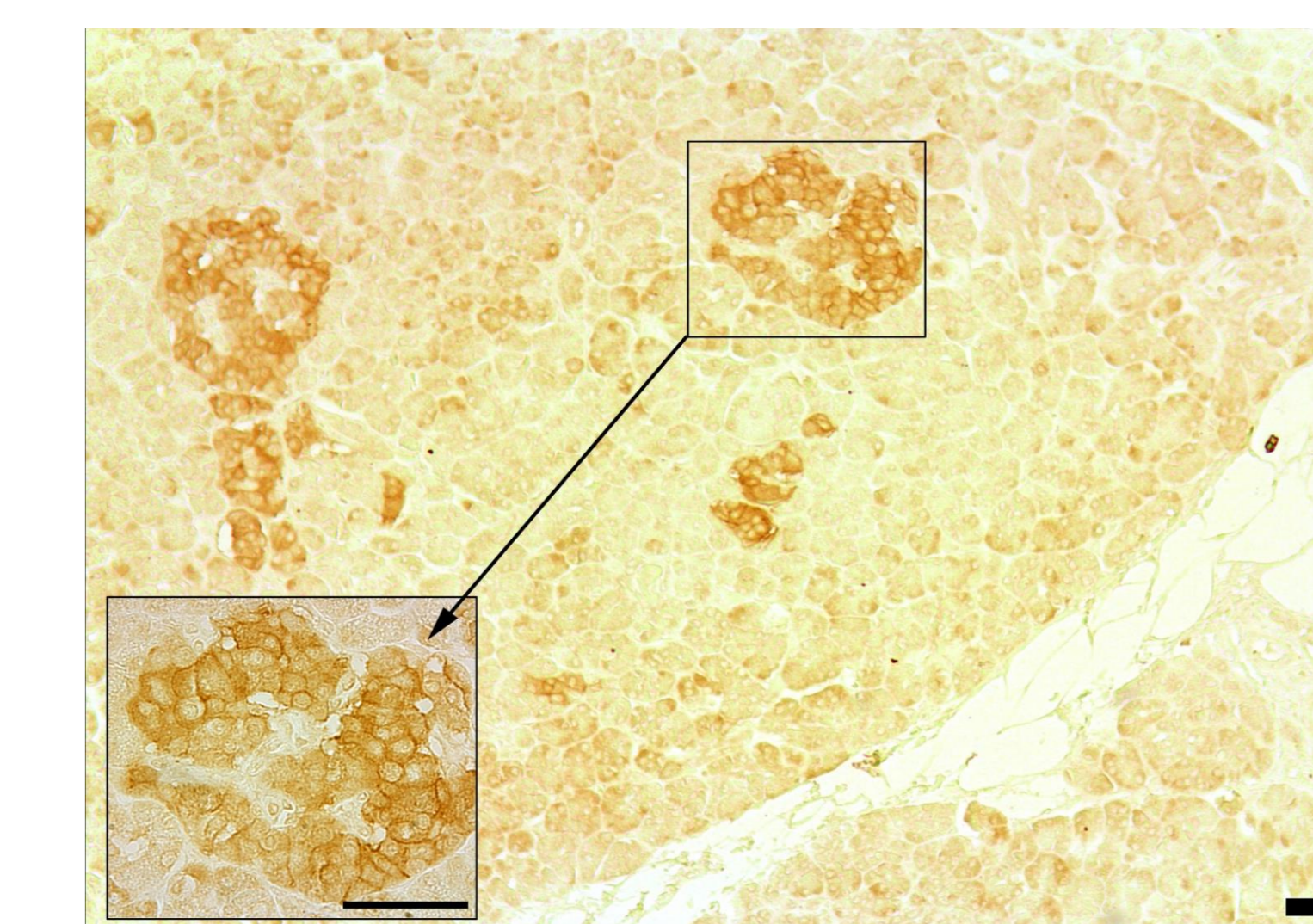
Immunohistochemistry with GLP-1 receptor antigen.



Focus, focal CHI



Non-focal region, focal CHI



Diffuse CHI

CONCLUSIONS

- To the best of our knowledge, it is the first study on GLP-1 receptor expression in CHI.
- Immunohistochemistry with GLP-1 receptor antibodies is able to reveal a focal lesion.
- While our data are promising for using PET with GLP-1 agonist (exendin-4) for differentiating CHI forms, expression of GLP-1 receptors in acinar cells could interfere with PET scan results.
- Our results also indicate GLP-1 antagonist treatment might be helpful in both histological forms.

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