

Teratoma analysis report

METHODOLOGY

iPS cells were cultured by the SAFE platform iPS and injected into mouse NOD/SCID/J subcutaneously to determine their pluripotency.
The resulting tumour nodules were analysed to look for structures derived from the three germ layers.

ANALYSIS HISTOLOGICAL

The histological analysis was carried out on two tumour nodules taken from the right and left sides of each mouse (n=10 mice), fixed and then embedded in paraffin: orders 100limHisto: 3028 and 5022.
Two sections of the block, 50 micrometres apart, were placed on a slide and stained with HES (Haematoxylin Eosin Saffron) to observe the histological structures present on the slide.
Another slide containing serial sections was stained with PAS (Periodic Acid Schiff) to highlight, in fuchsia pink, the glycosaminoglycans and complex carbohydrates typical of mucous cells, characteristic of the respiratory and digestive epithelium, both derived from the endoderm.
The slides were scanned using the MRI Hamamatsu slide scanner and observed with the appropriate NDPview software, allowing the capture of the photographs illustrating this report.

All the histological structures observed were listed, photographed and classified in a table according to the origin of their germ layer: ectoderm, mesoderm and endoderm.
For each clone, photographs confirm of presence of these structures histological stained with HES for the ecto-, endo- and meso-derm, and stained with PAS for the endodermal derivatives.
At end staining PAS on a section of a intestine small allows of comparing the observation goblet mucous cells or "Goblet cells", in the intestinal epithelium and in the respiratory epithelium.

RESULTATS

Commandes 3028 & 5022						
Mice	HISTO	ECTODERME	NEURO-ECTODERM			
		Annexes pilosebaceous and and epidermis	formation typical of neural tube	neurones type DRG	cellules of crest crest : melanocytes	Plexus choroids
Mice 1	190_4F		x		x	x
Mice 2	190_6F		x		x	x
Mice 3	192_4F		x		x	x
Mice 4	192_6F		x	x	x	
Mice 5	191_4F		x		x	x
Mice 6	191_6F		x	x	x	x

Mice	HISTO	MESODERME				
		mésenchyme embryonic	cartilage	os	cellules muscle smooth	adipocytes (white adipose tissue)
Mice 1	190_4F	x	x			
Mice 2	190_6F	x	x	x		
Mice 3	192_4F	x				
Mice 4	192_6F	x	x	x	x	x
Mice 5	191_4F	x	x		x	
Mice 6	191_6F	x	x		x	

Mice	HISTO	ENDODERME
		cellules mucous goblet "Goblet cells" characteristic of the epithelium of respiratory or digestive type
Mice 1	190_4F	x
Mice 2	190_6F	x
Mice 3	192_4F	x
Mice 4	192_6F	x
Mice 5	191_4F	x
Mice 6	191_6F	x

SUMMARY

Mice	HISTO	ectoderme	mésoderme	endoderme	Pluripotence
Mice 1	190_4F	X	X	X	X
Mice 2	190_6F	X	X	X	X
Mice 3	192_4F	X	X	X	X
Mice 4	192_6F	X	X	X	X
Mice 5	191_4F	X	X	X	X
Mice 6	191_6F	X	X	X	X

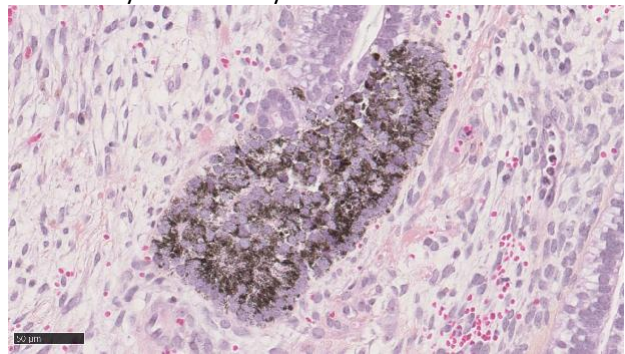
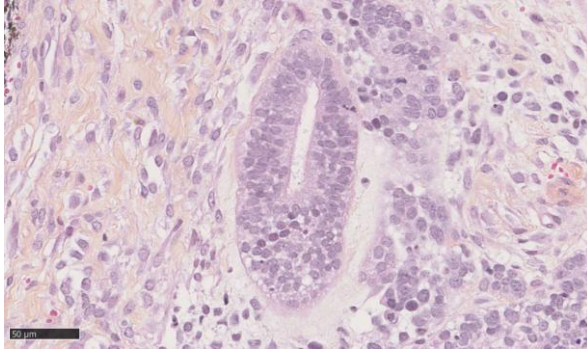
The cell clones studied are pluripotent : zones of differentiation derived from the three germ layers, the ectoderm, the mesoderm and the endoderm, are clearly observed.

Mice 1 (190_4F)

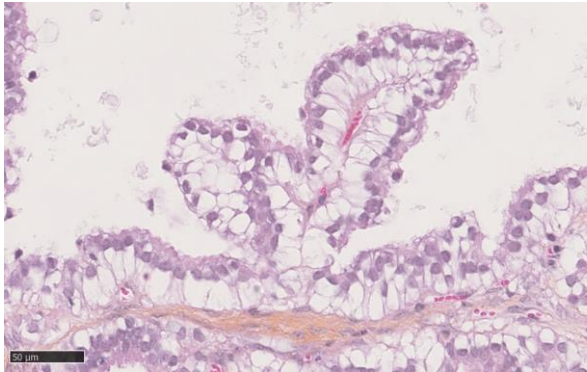
4 slides stained with HES and 2 slides stained PAS

were analysed melanocytes

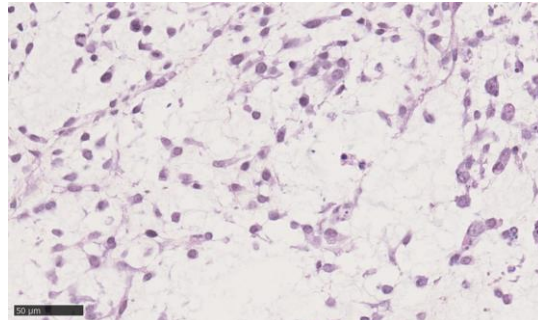
Derivatives neuro-ectodermal : neural tube



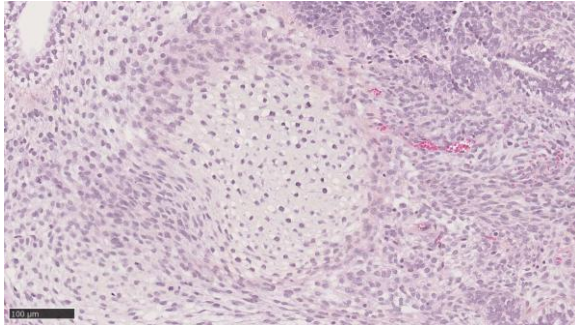
Choroid plexus



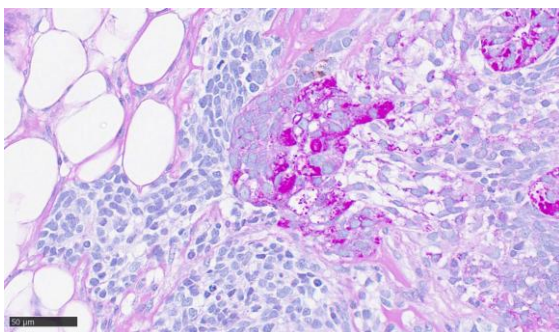
Embryonic mesenchyme



Derivative mesodermal : cartilage



Derivative endodermal : mucus, goblet cells

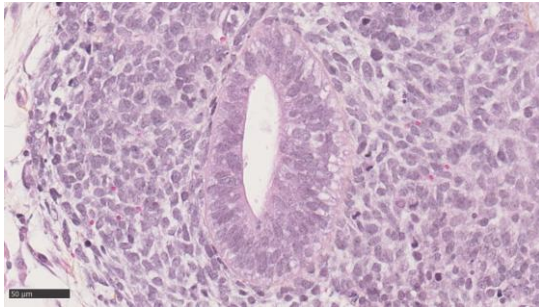


Mice 2 : 190_6F

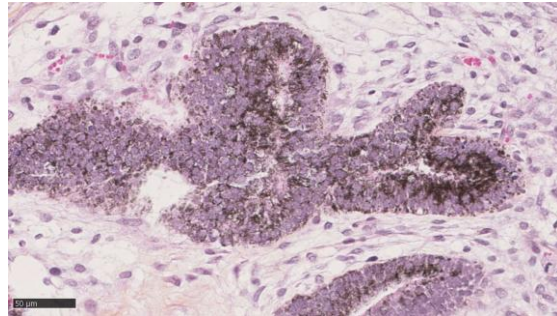
4 slides stained with HES and 2 slides stained PAS

were analysed

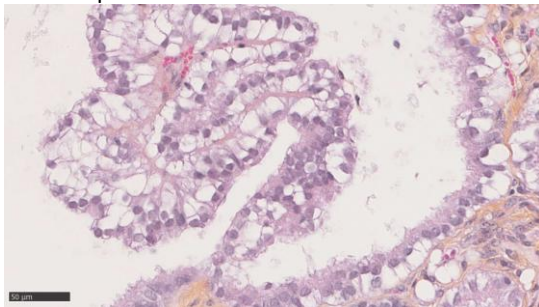
Dérivé neuro-ectodermique : tube neural



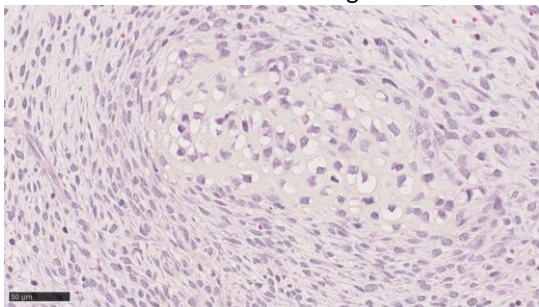
and melanocytes



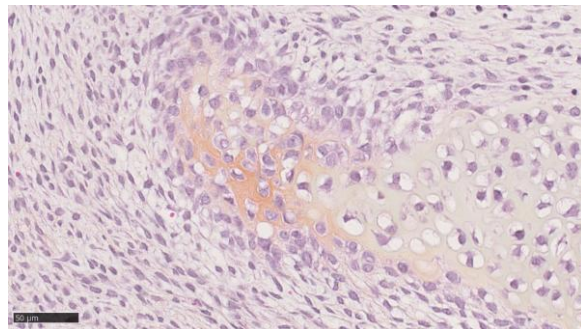
Choroid plexus



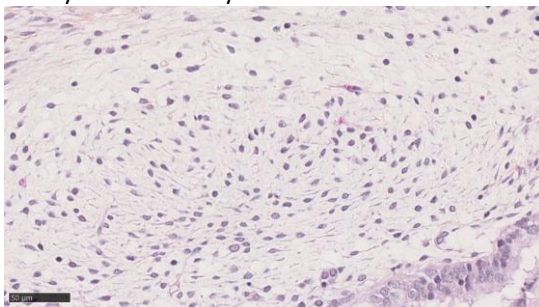
Derivative mesodermal : cartilage



Bone : ossification endochondral

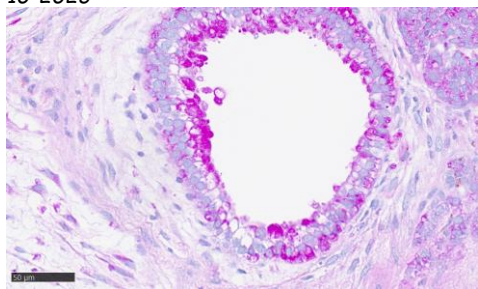


Embryonic mesenchyme



Derivative endodermal : Cells mucous

goblet of the epithelium digestive or respiratory

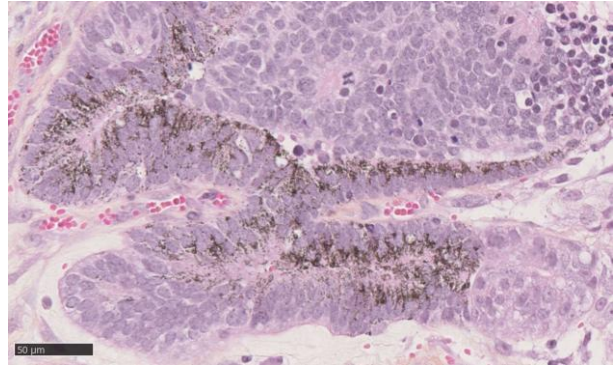
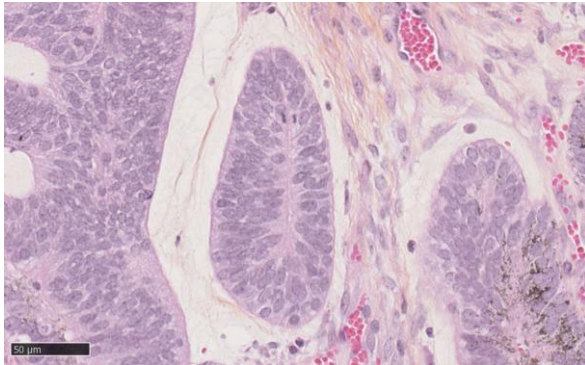


Mice 3 (192 4F)

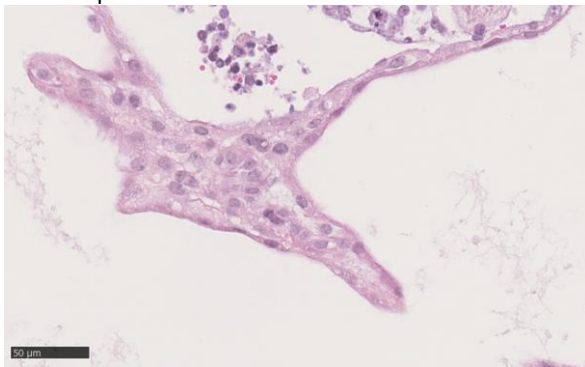
2 slides stained with HES and 1 slides stained PAS

were analysed Melanocytes

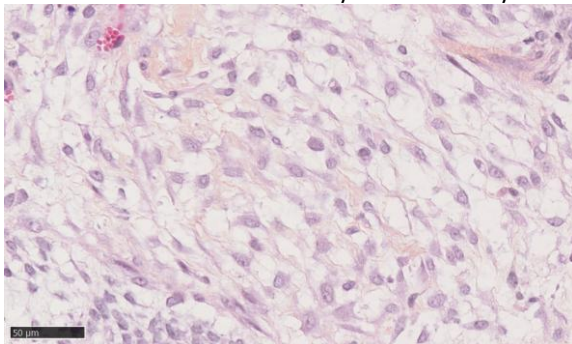
Dérivé neuro-ectodermique : Tube neural



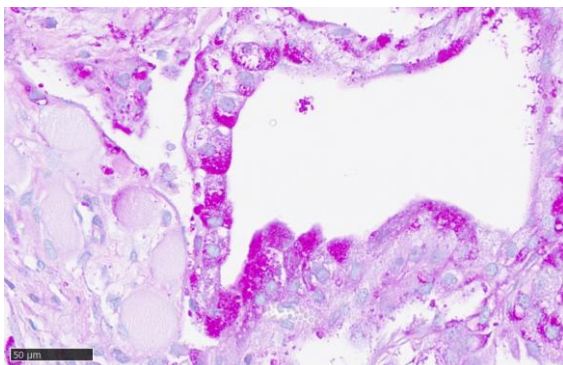
Choroid plexus



Derivative mesodermal : embryonic mesenchyme



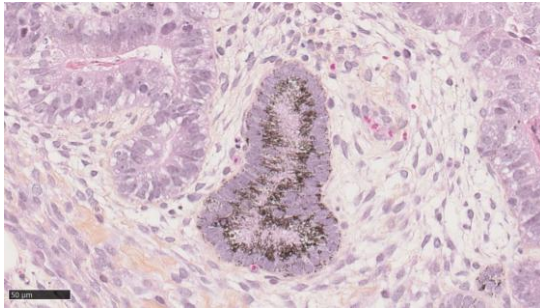
Derivative endodermal



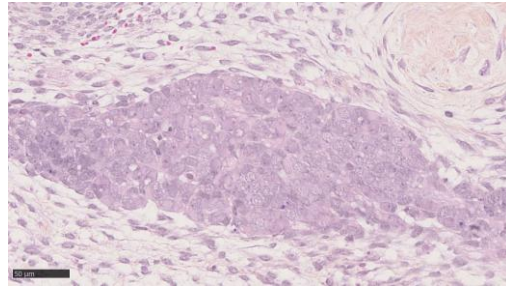
Illustrations Mice 4 (192_6F)

2 slides HES and 1 slide PAS were analysed

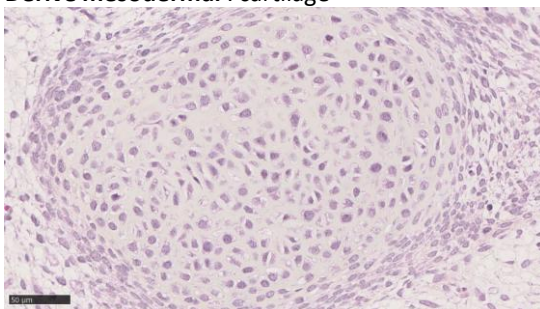
Derivative neuro-ectodermal : neural tube with melanocytes



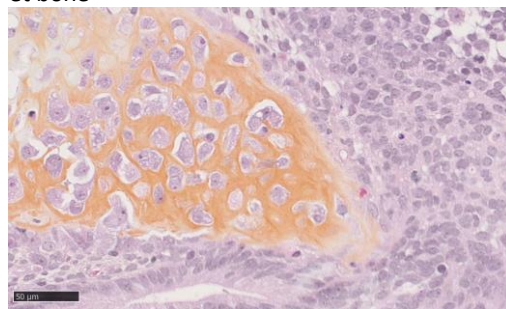
DRG neurons



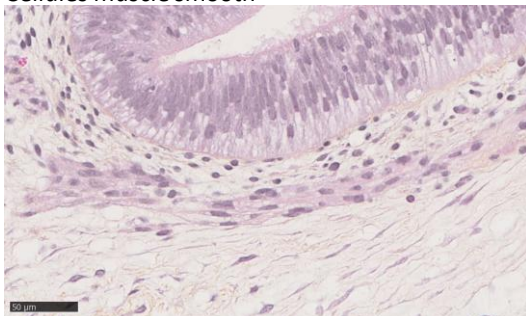
Dérivé mesodermal : cartilage



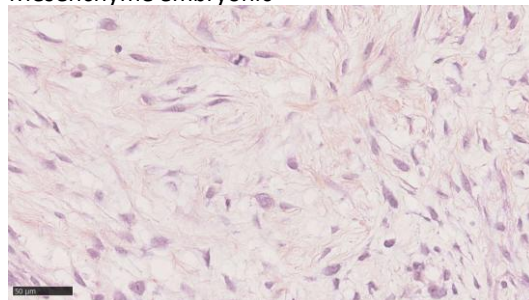
et bone



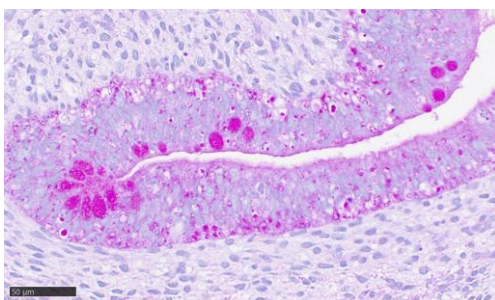
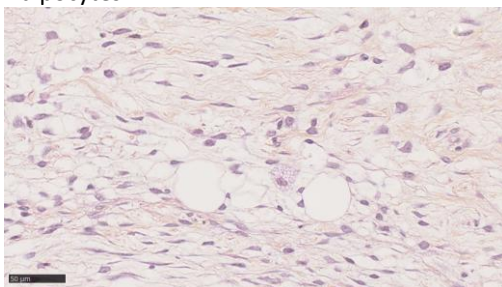
Cellules muscle smooth



Mésenchyme embryonic



Adipocytes

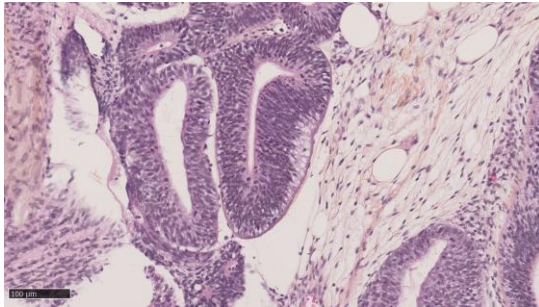


Endodermal derivative : PAS characterisation : this staining reveals, in fuchsia pink, the mucus of the mucous cells of the epithelium intestinal or respiratory

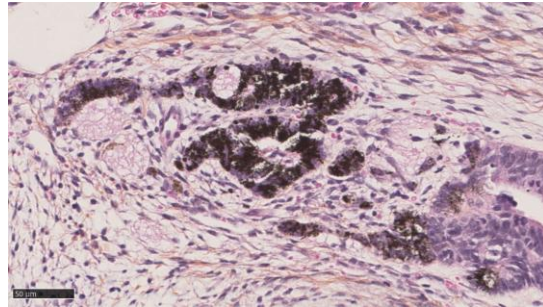
Mice 7-(191 4F)

1 slide stained with HES and 2 slides stained PAS were analysed

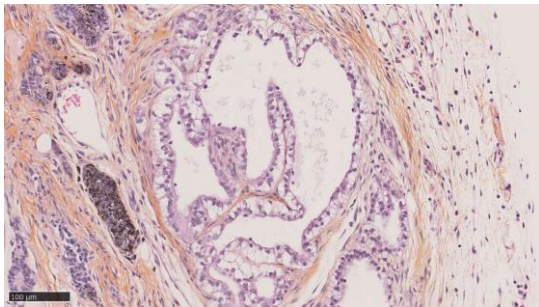
Derivative neuro-ectodermal : neural tube



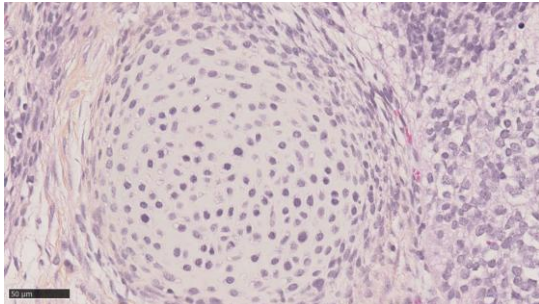
And melanocytes



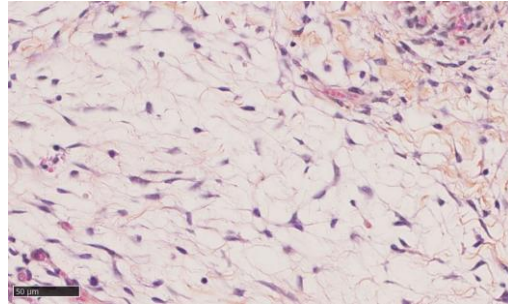
Choroid plexus



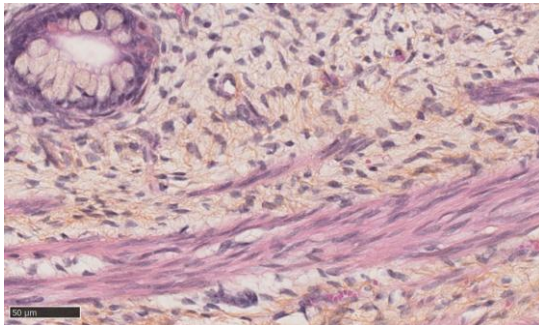
Dérivé mésodermique : cartilage



et embryonic mesenchyme

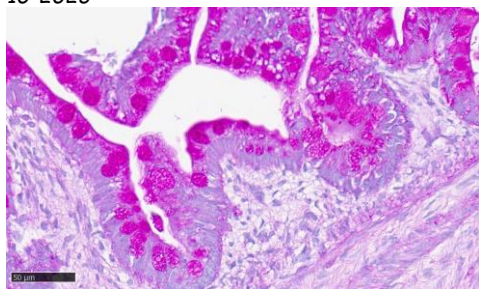


Cellules muscle smooth



Dérivé endodermal : cells secreting mucus

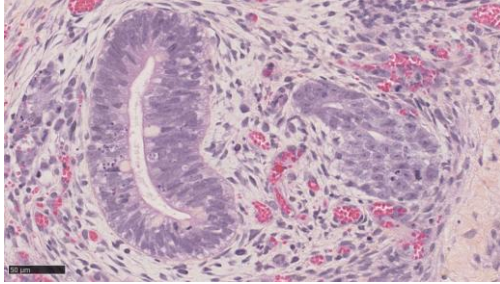
PAS positive



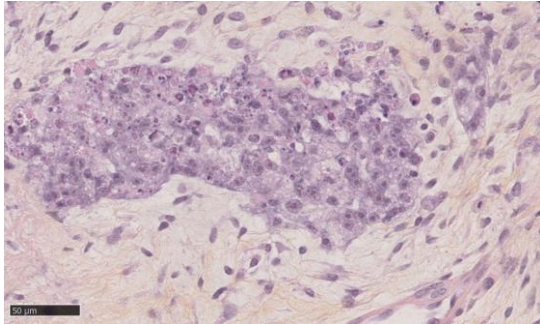
Mice 8 (191 6F)

1 slides stained HES and 2 slides stained PAS

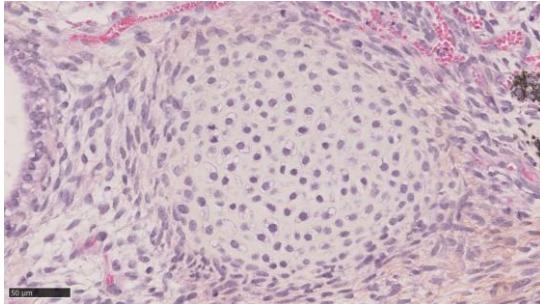
Derivative neuro-ectodermal : neural tube and



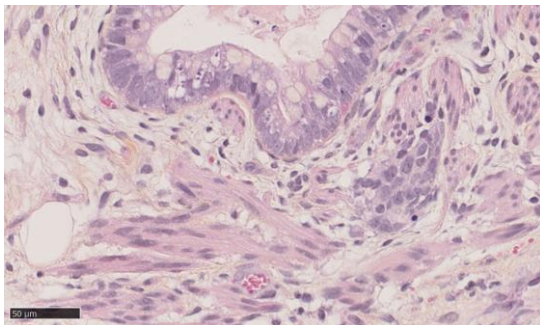
And DRG neurons



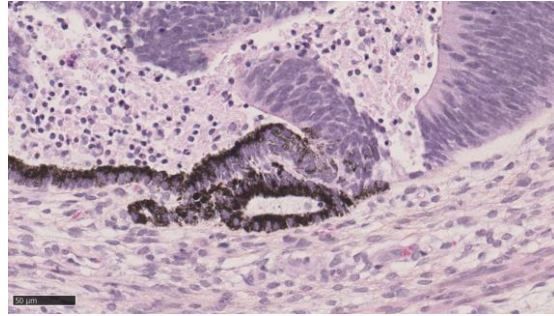
Derivative mesodermal : cartilage



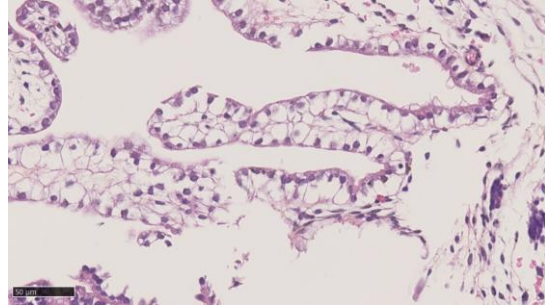
And smooth muscle cells



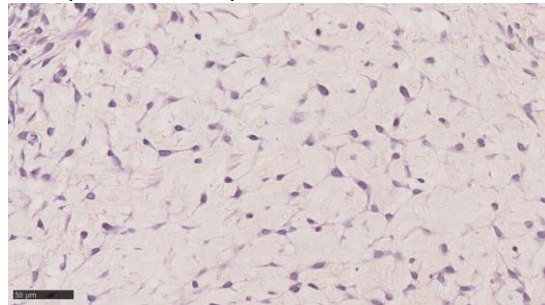
were analysed melanocytes



Choroid plexus



embryonic mesenchyme



MUCUS, stained fuchsia with PAS.

Dérivé Endodermique : cellules sécrétant du

Analyse analysis of teratoma with graft iPSC -Orders 3028 and 5022 for Dr JM. LEMAITRE by F. Bernex, RHEM, 23-10-2023

