

Etude des cellules endothéliales circulantes (ECFC),  
porteuses d'une mutation ACVRL1, en réponse au BMP9  
pour l'identification de nouvelles cibles thérapeutiques dans  
la maladie de Rendu-Osler (CAERO)

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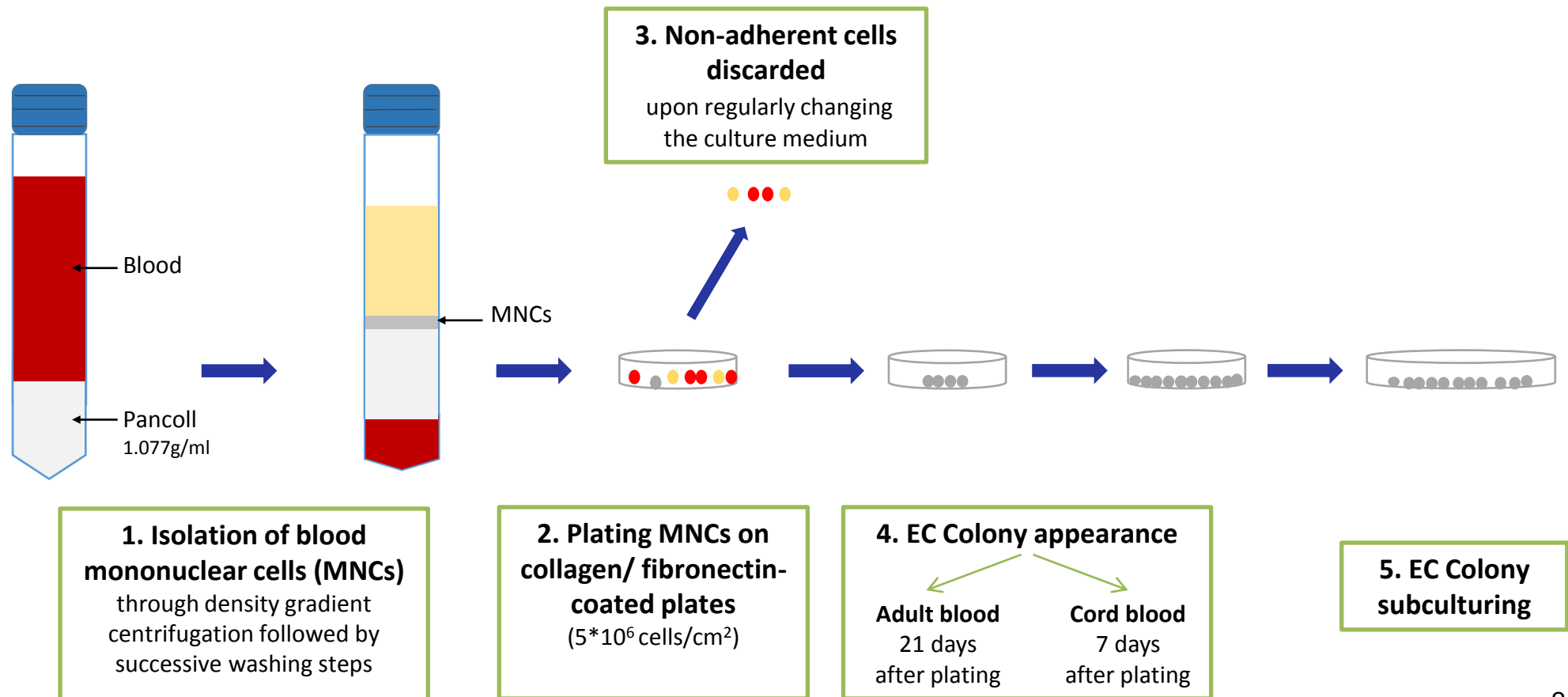
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# Cellules endothéliales circulantes (ECFC) endothelial colony-forming cells

from:

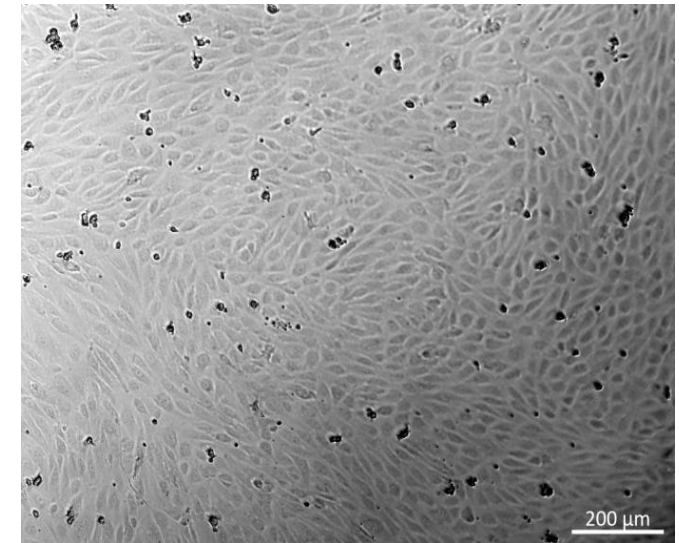
- Adult peripheral blood (**0.05-0.2 ECFC/ml**): **30 ml: 1,5 à 6 ECFC (failed)**
- Cord blood (**2-5 ECFC/ml**) : **100 ml: 200 à 500 ECFC**



# Isolation of Endothelial colony-forming cells (ECFC)

- Collect cord blood at the maternity the day of birth:
  - 3 cord blood from CTLs and 11 cord blood from HHT patients

	Cord Blood		
# of donors	3 control donors + 2 HHT (no mutation)	1 HHT1 patient (ENG)	2 HHT2 patients (ALK1)
# of donors yielding colonies	4	1	2



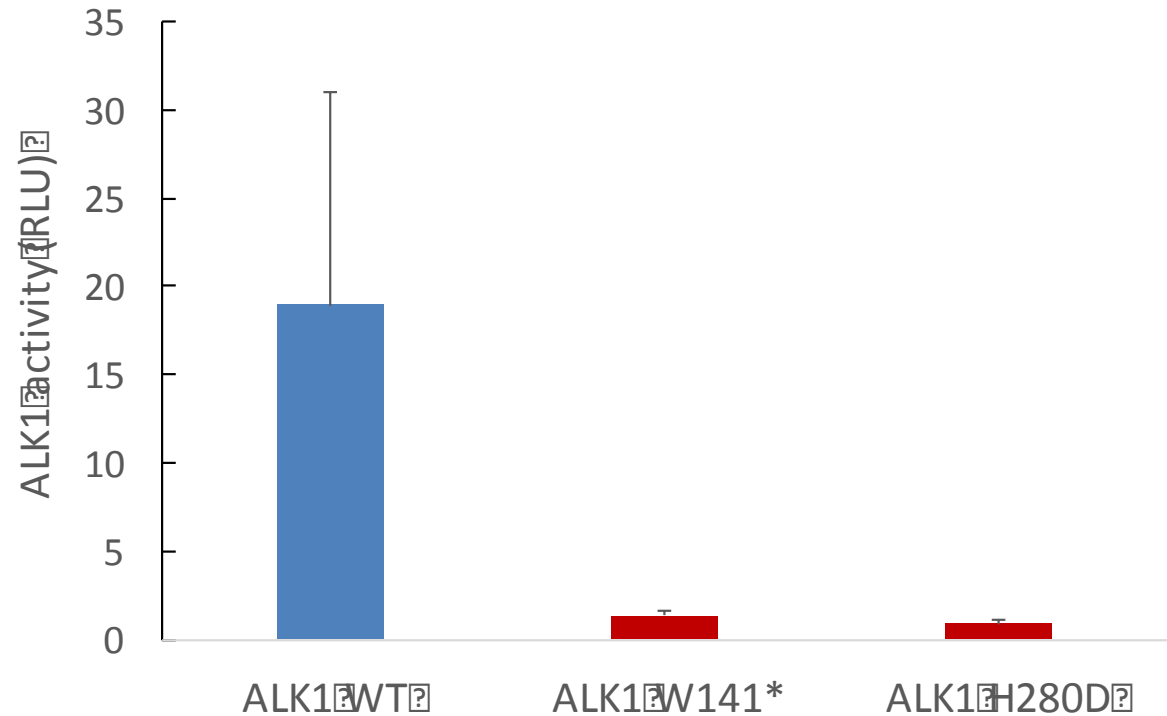
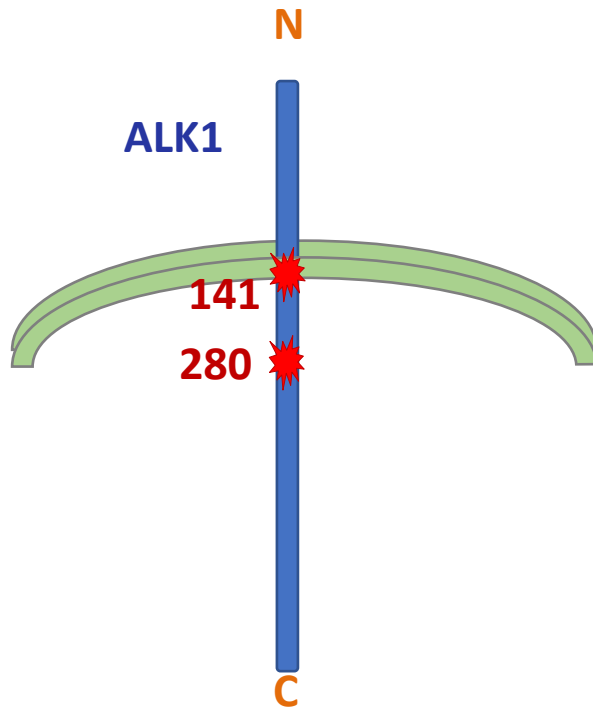
*Cord blood-derived ECFC*

+ ongoing culture of cells isolated from 7 HHT patients...

# Isolation of Endothelial colony-forming cells (ECFC)

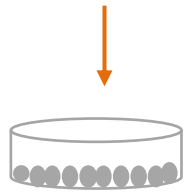
Mutation: p.Trp141\*  
p.His280Asp (kinase domain)

- Test the functional activity of these mutated ALK1 receptors in response to BRED luciferase
- ALK1 mutations lead to a loss of function



# RNAseq analysis of 3 CTL ECFC and 2 ALK1-mutated ECFC

ECFC  
NS/BMP9/BMP10  
10 ng/ml (triplicates)



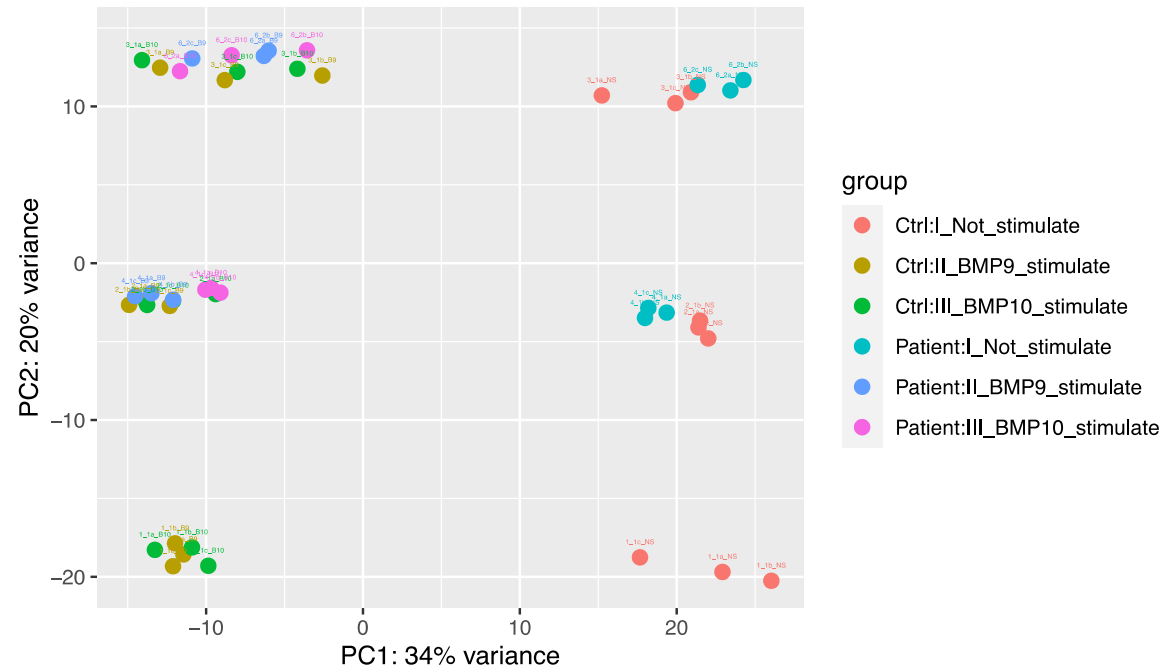
🕒 18 hr



RNA  
extraction



RNAseq (Genewiz)  
BioInformatic Analysis ongoing



**Caractériser les cellules endothéliales de patients:**

- ✓ **Mieux comprendre le mécanisme pathogénique**
- ✓ **Proposer de nouvelles stratégies thérapeutiques**



**Merci pour votre attention**

**Questions ?**