



UCL

Vlad Arimia

Laboratorul Claudio Stern *FRS*

**Inducția neurală-
de la descoperire la un
gene regulatory network**

Smart Diaspora

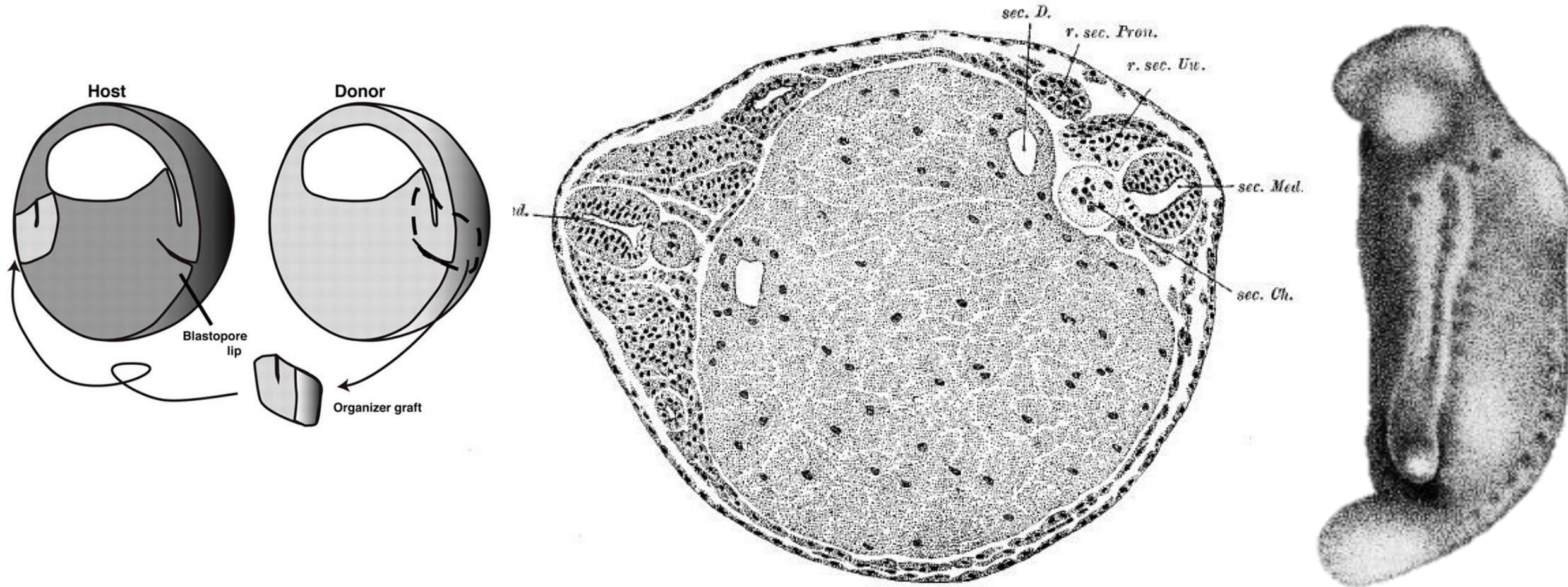
11 APRILIE 2023



Gastrulația la amfibieni

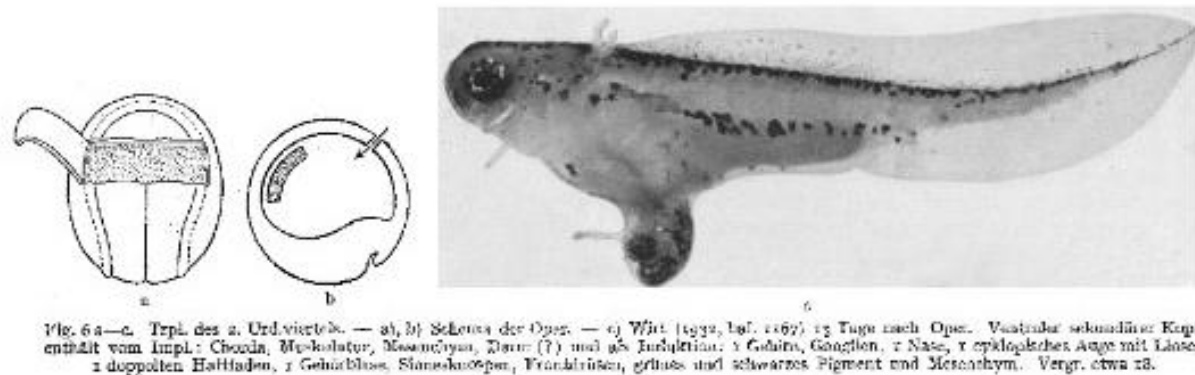
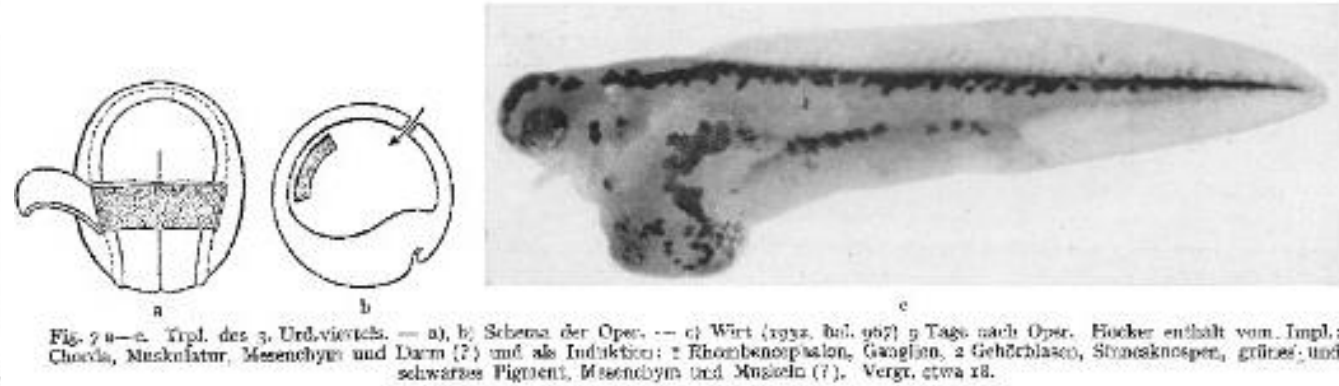
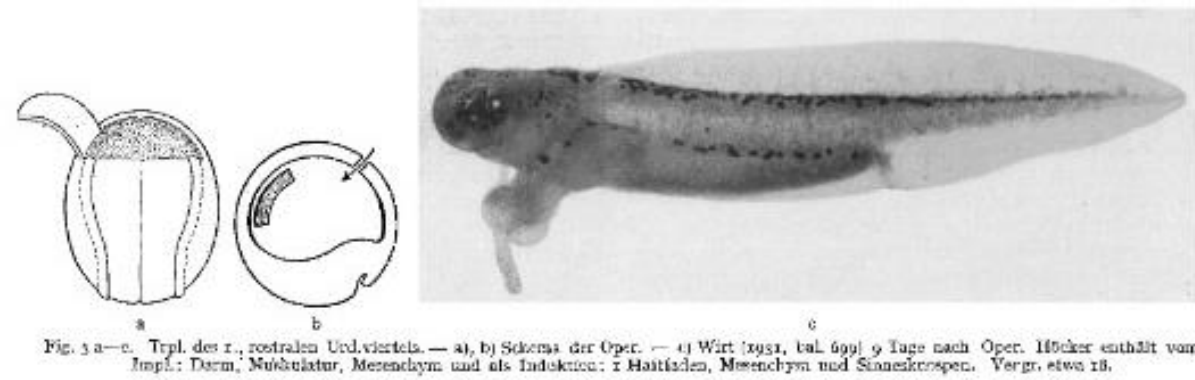


Organizatorul Spemann induce și regionalizează placa neurală

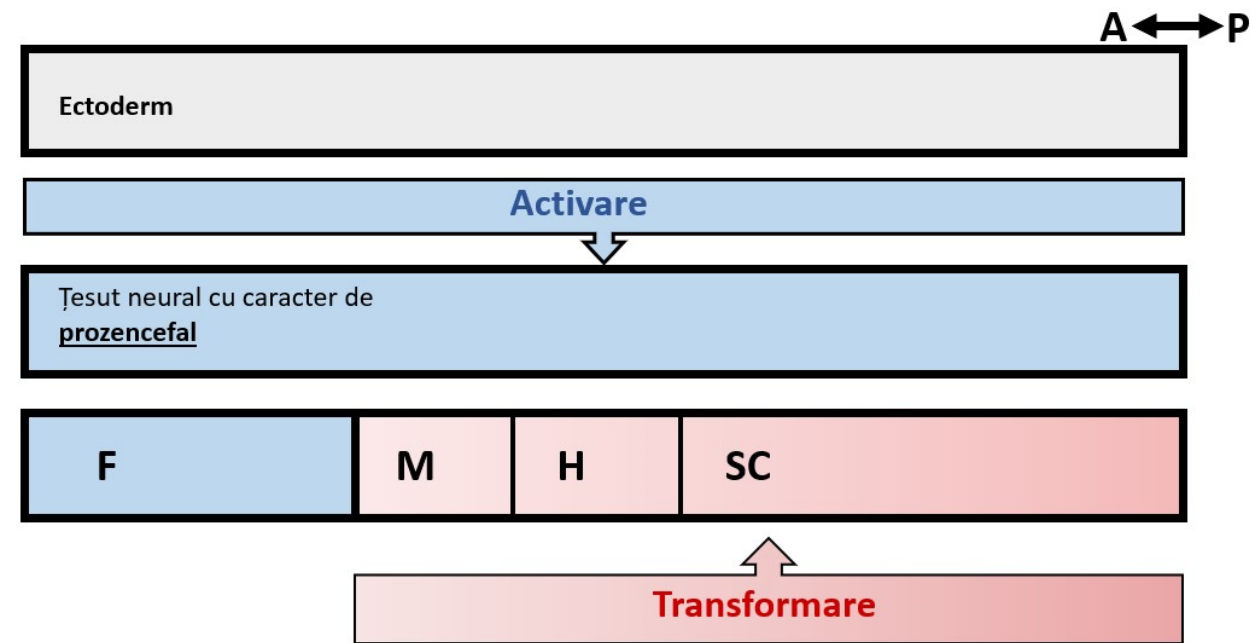
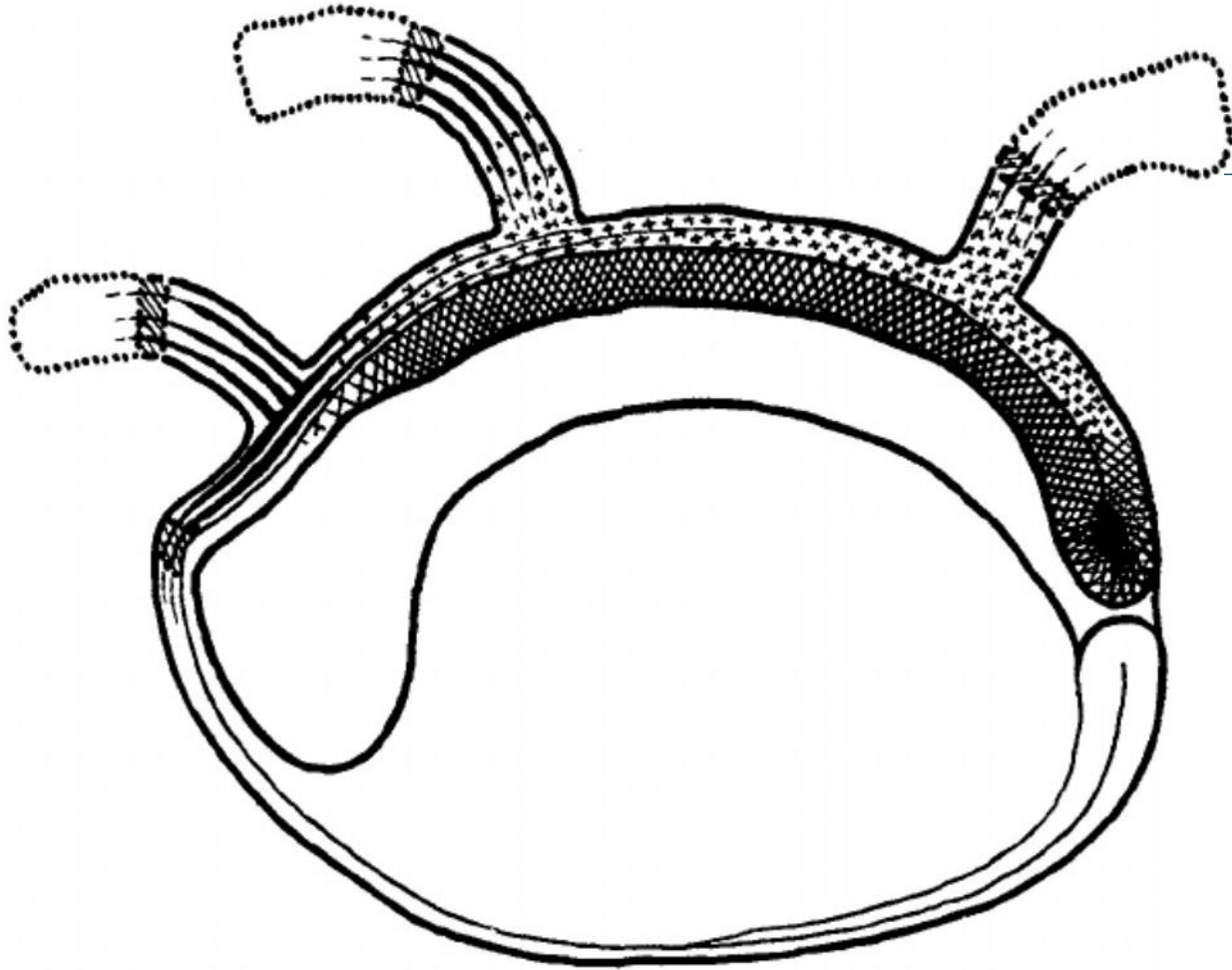


Mai mulți centrii organizatori?

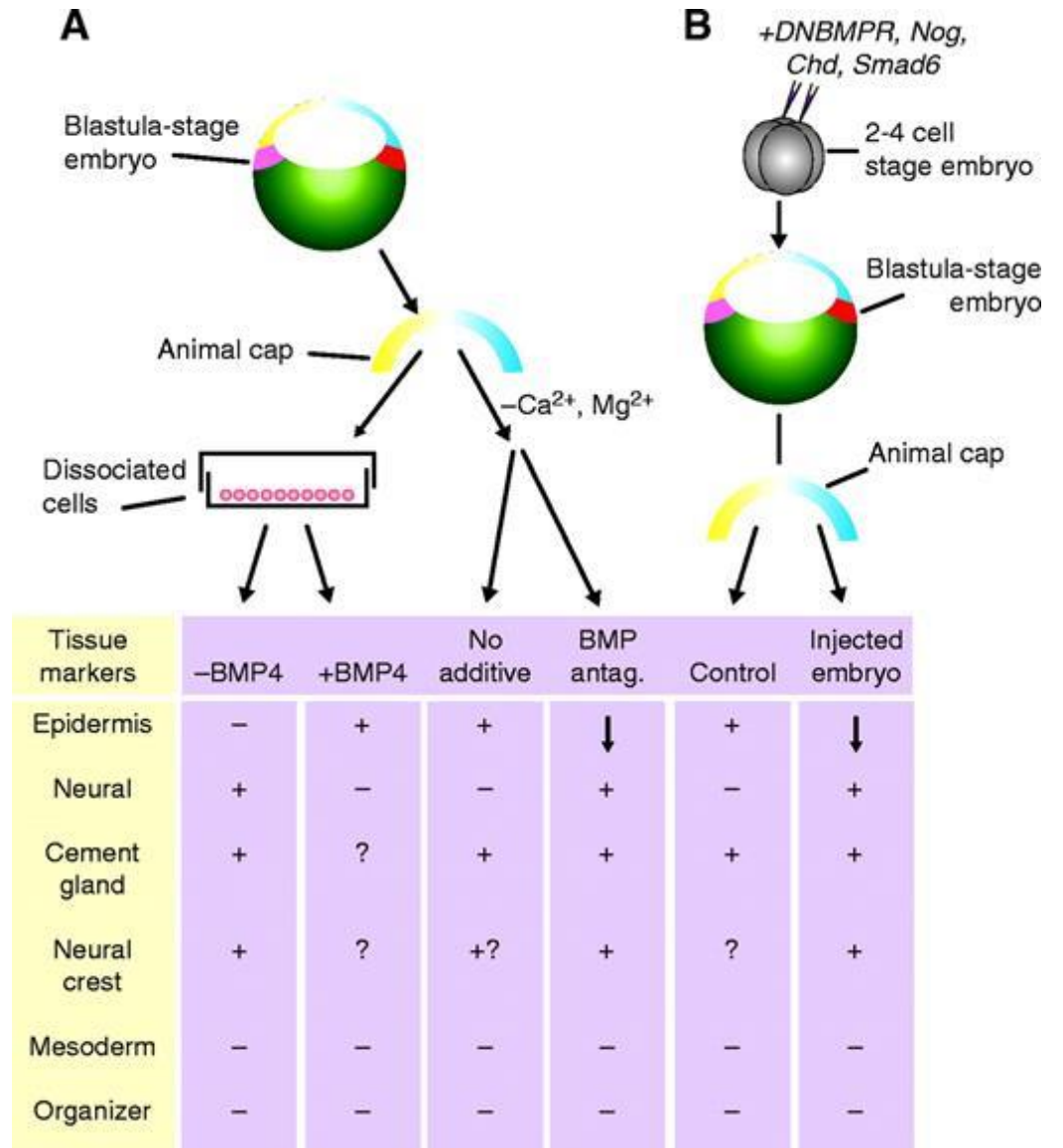
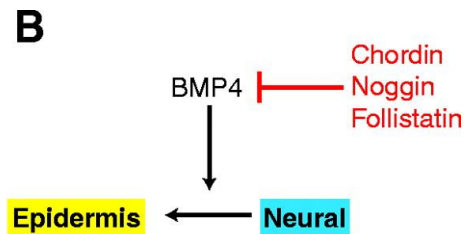
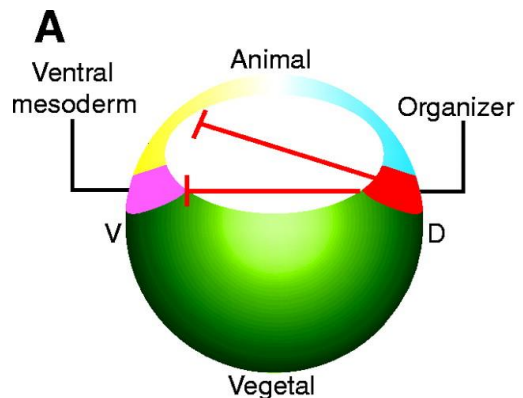
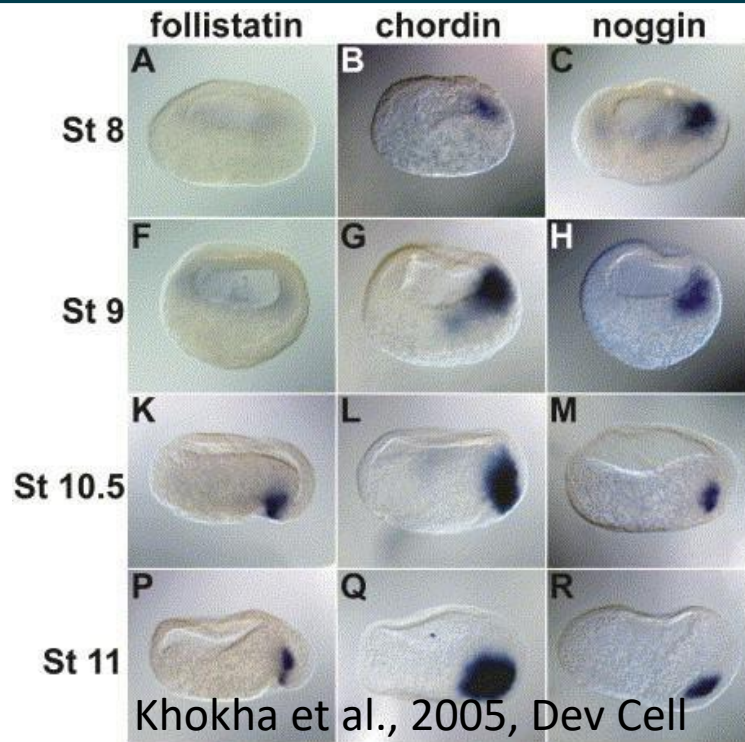
Fig. 5—8. Transplantation der Urdarmdachbezirke der frühen Neurula ins Blastocöl der frühen Gastrula.



Încep toate celulele neurale prin a fi prozencefal?

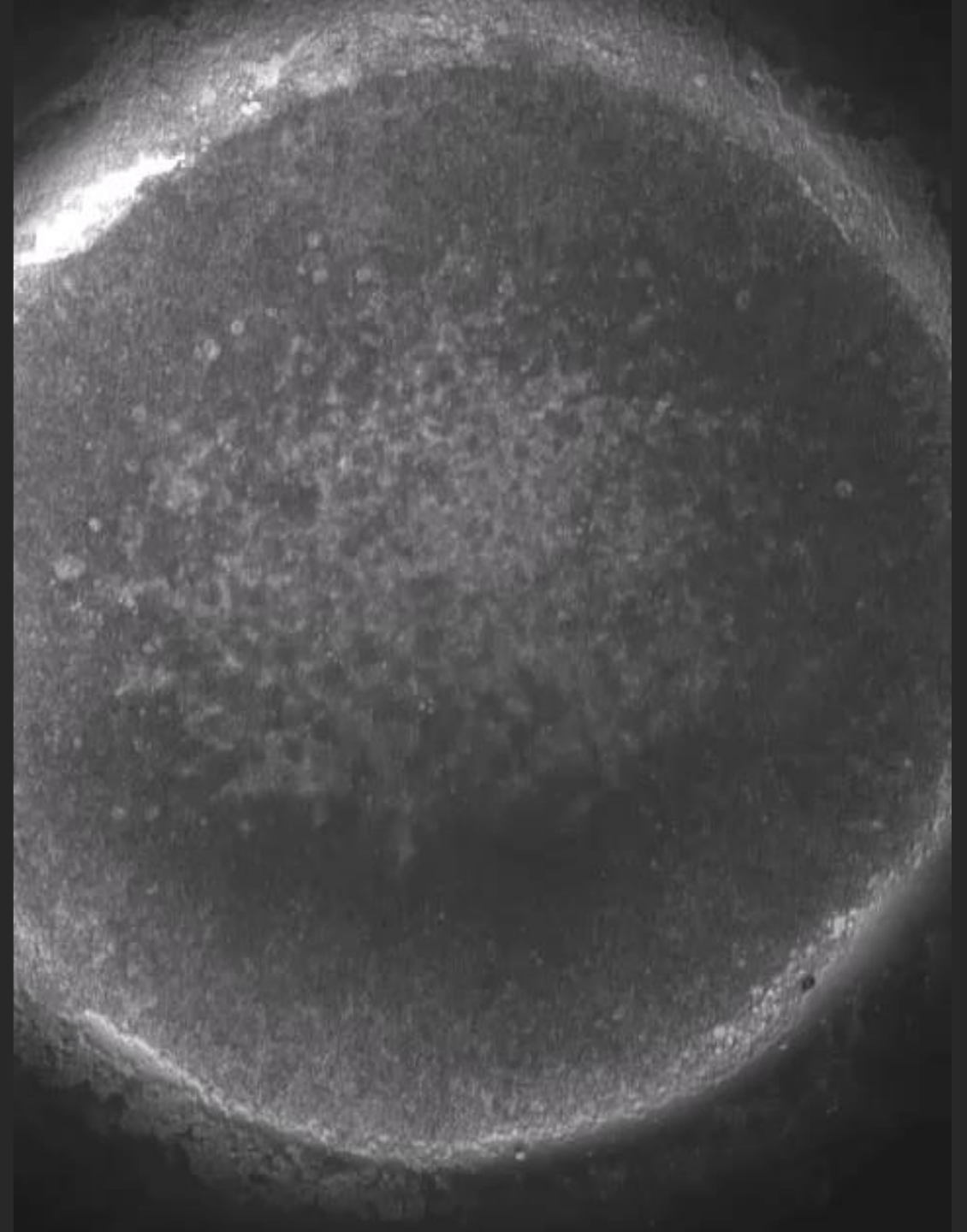
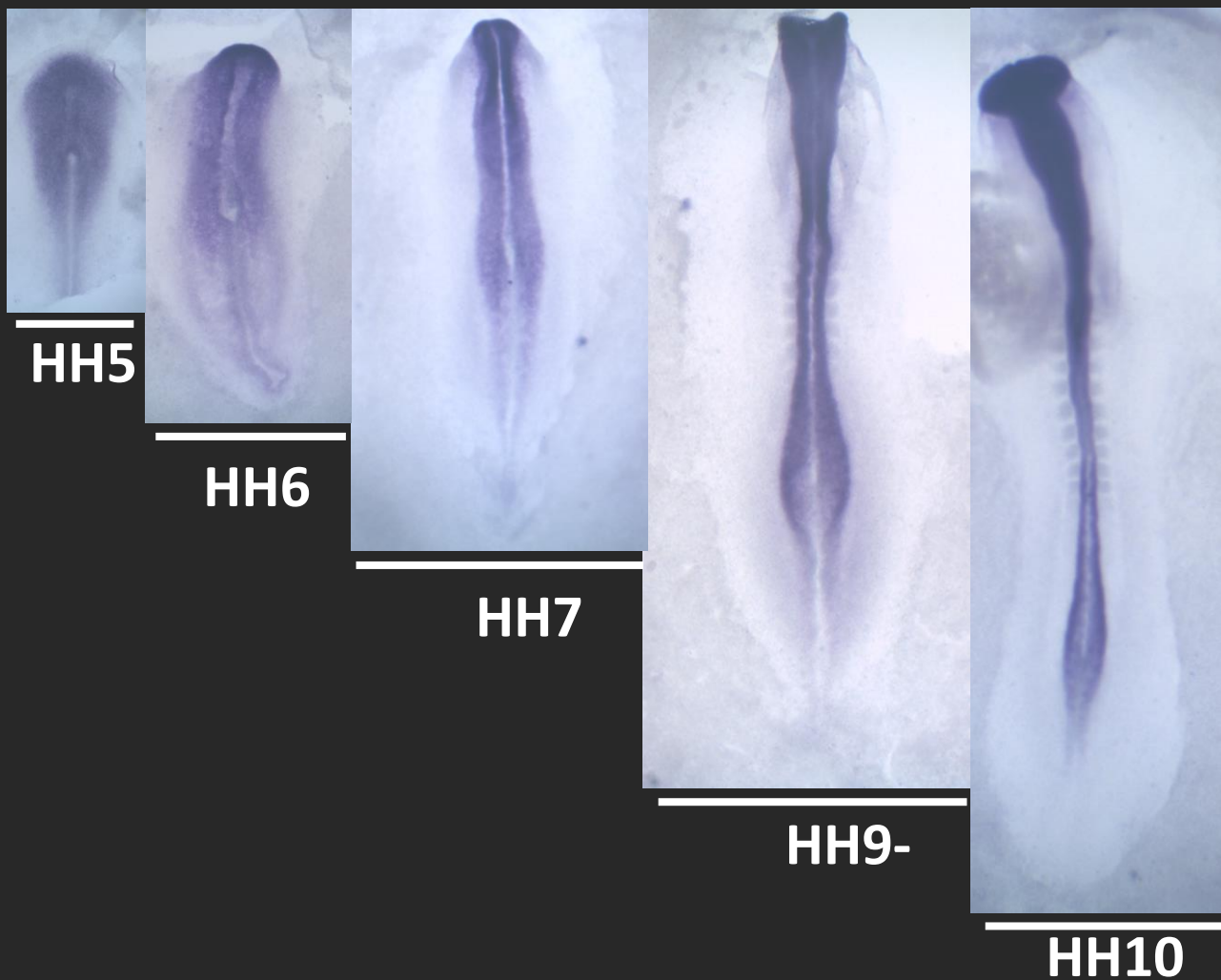


Inhibiția BMP și “The Default Model”

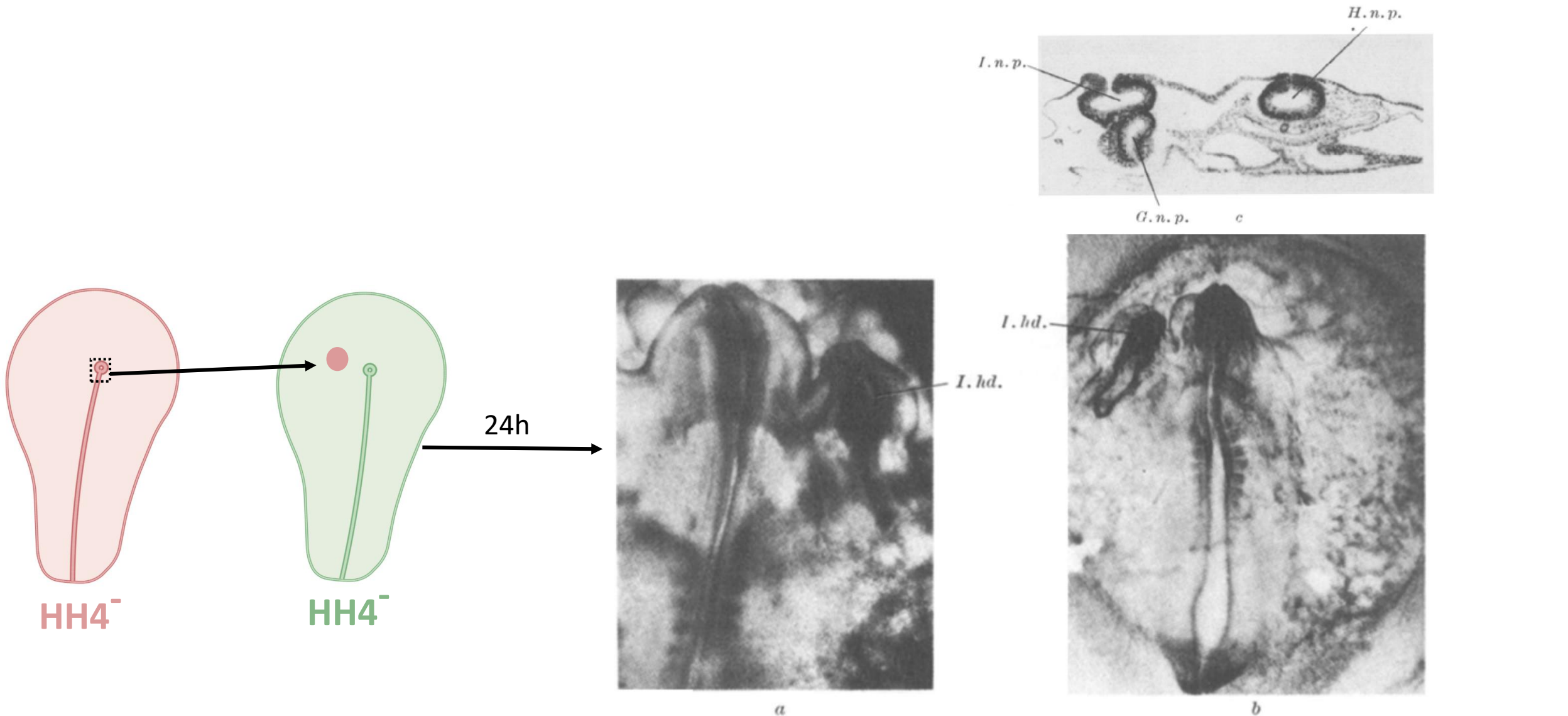


Gastrulația și neurulația primară în embrionii amnioți

Sox2

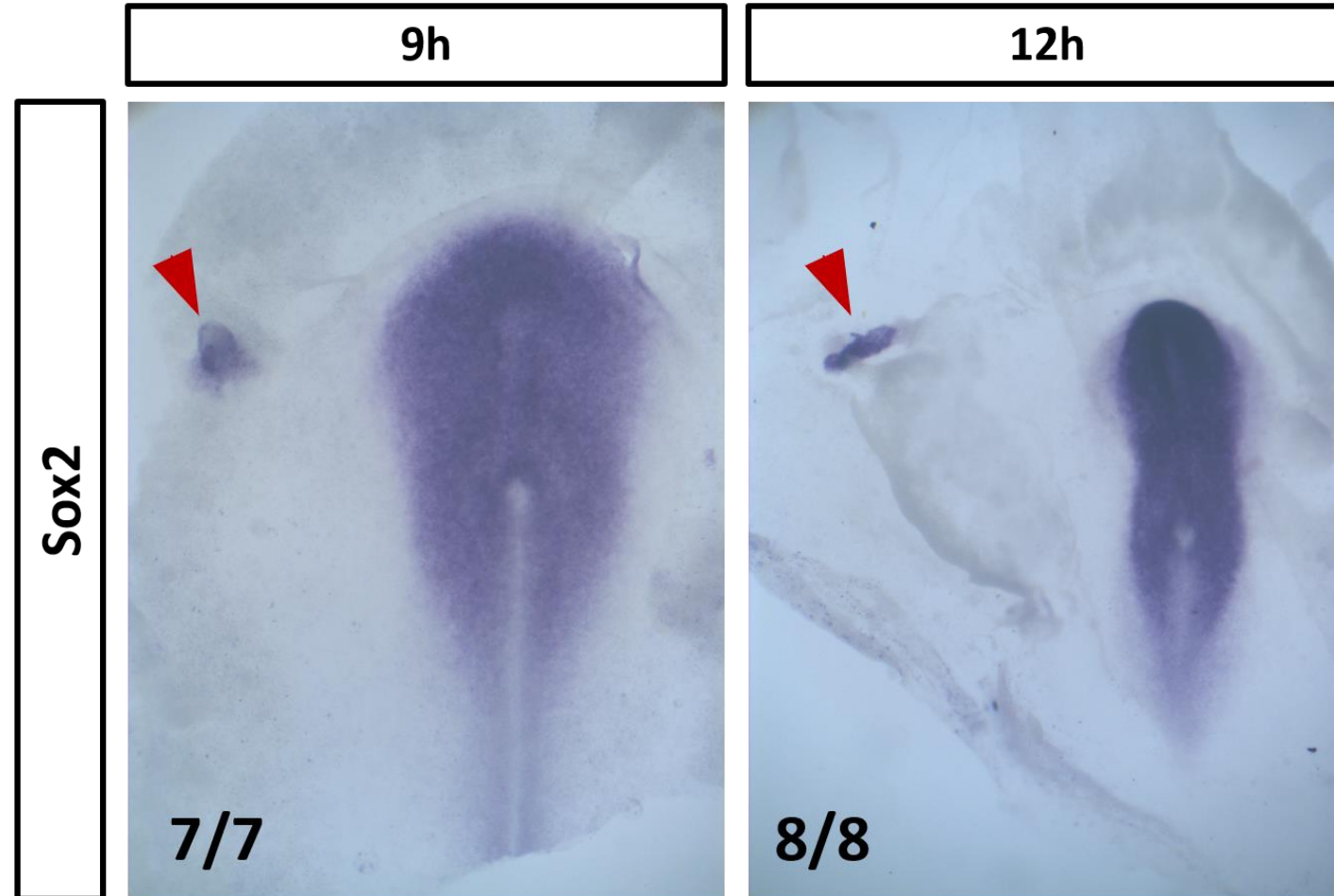
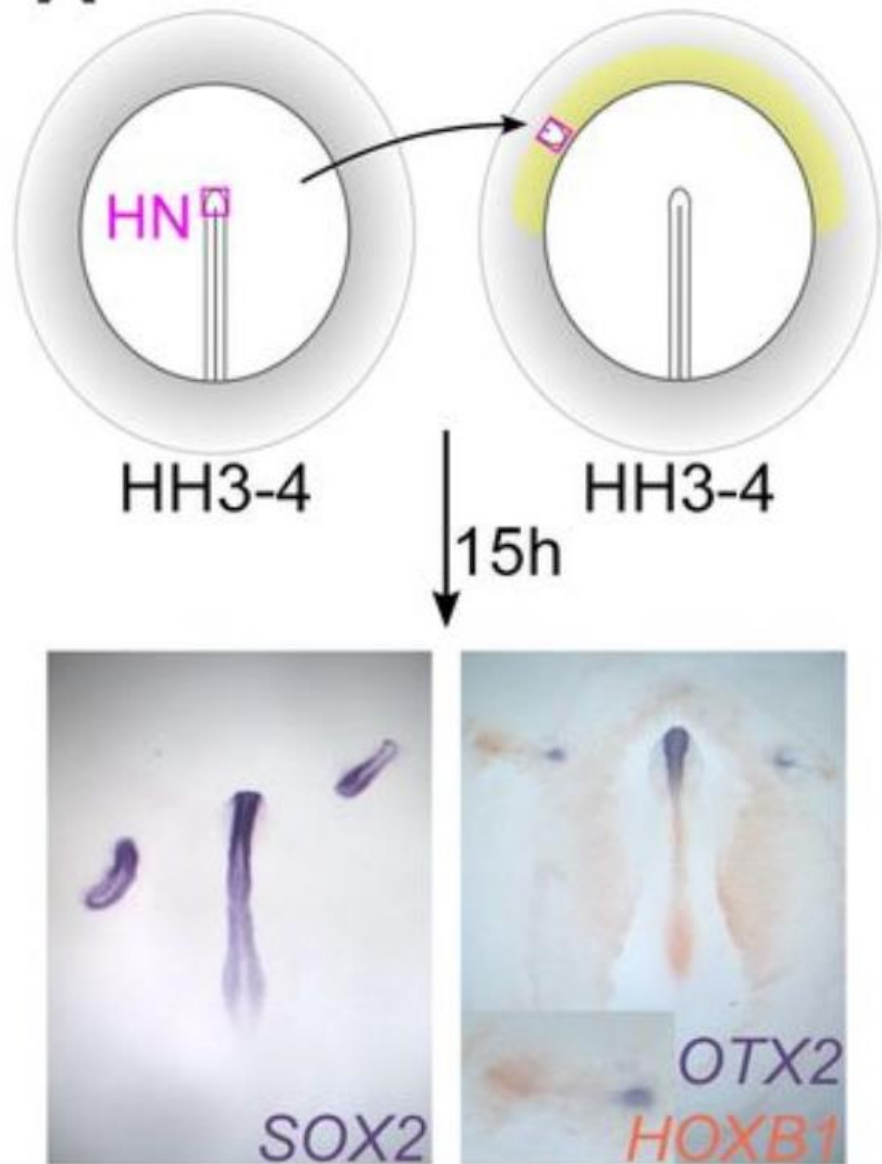


Nodul lui Hensen este echivalentul amniot al organizatorului Spemann

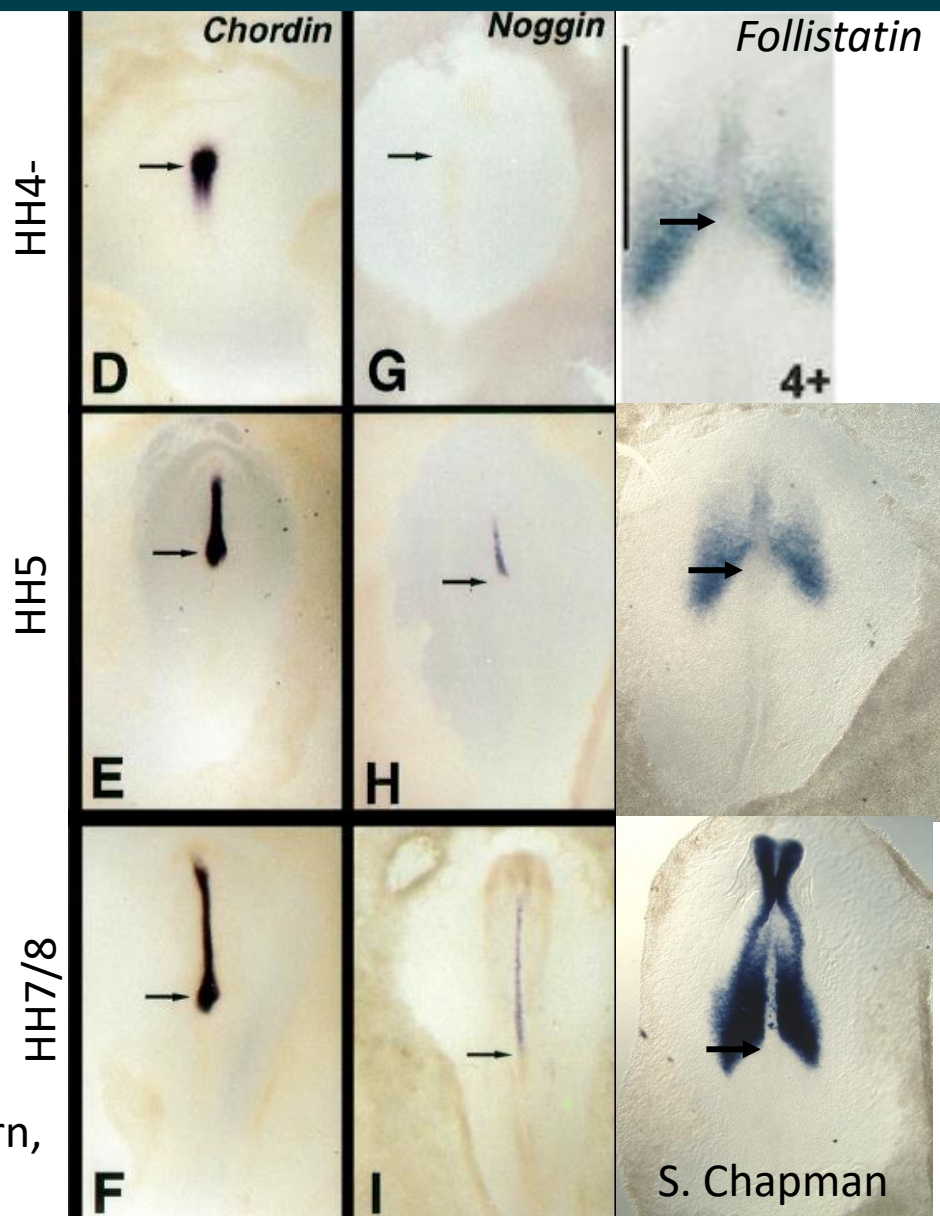


Waddington și Schmidt, 1933

Testarea inducției neurale în *area opaca*

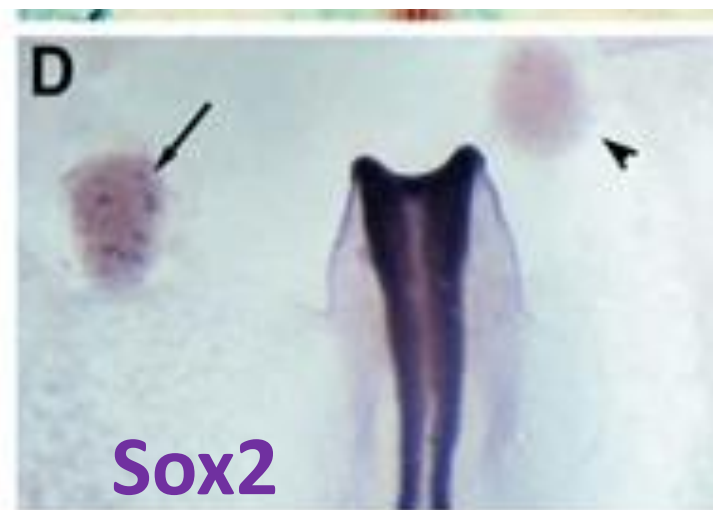


Inhibitorii de BMP în embrionul amniot



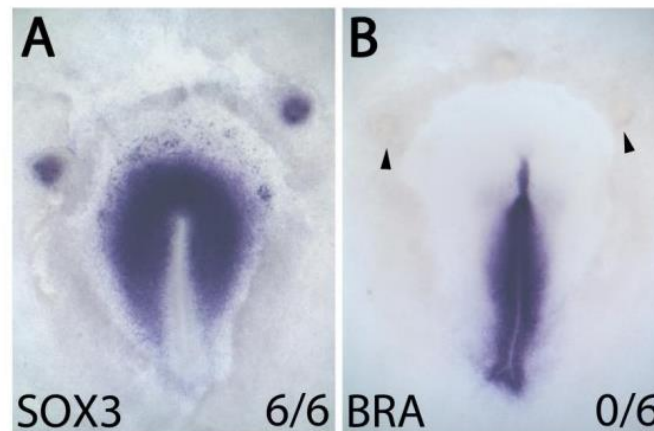
Streit & Stern,
1999

Chordin nu neuralizează *area opaca*



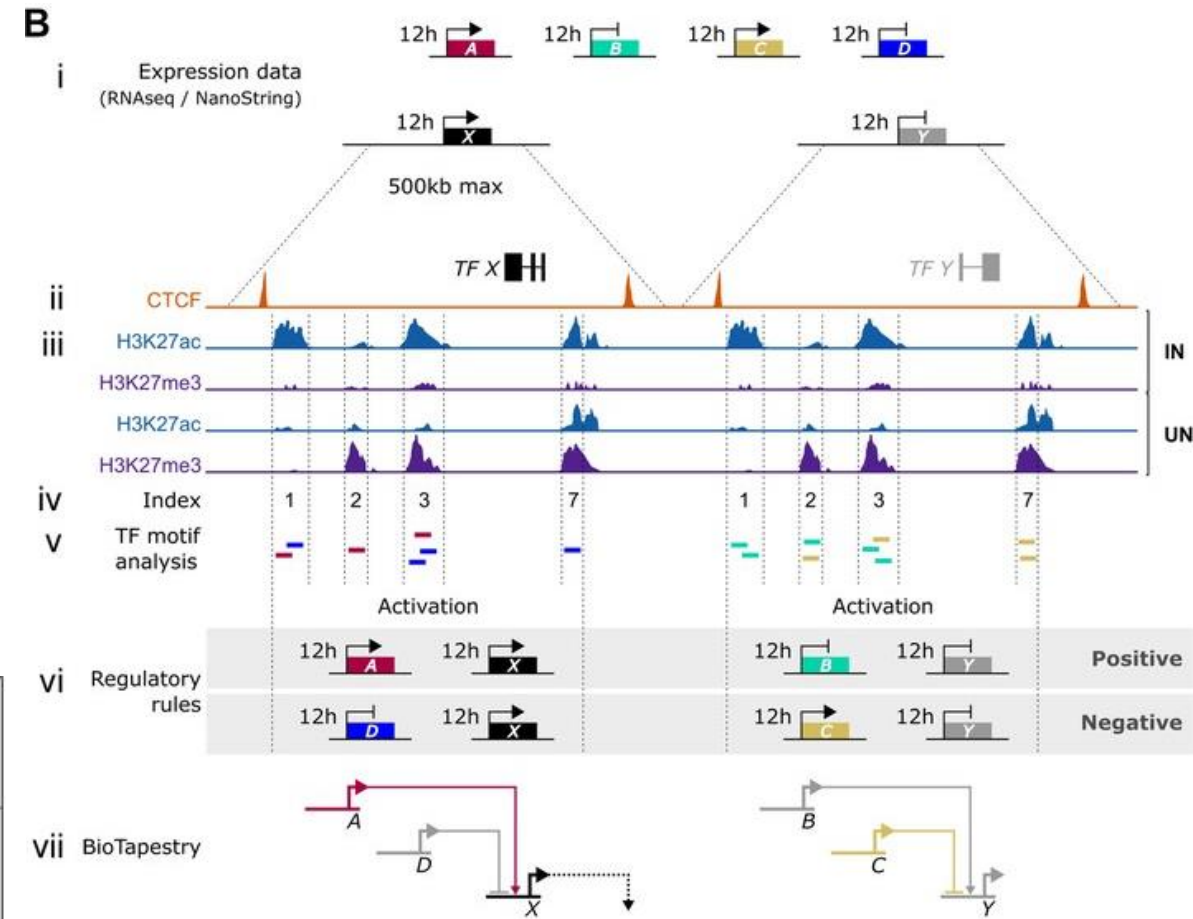
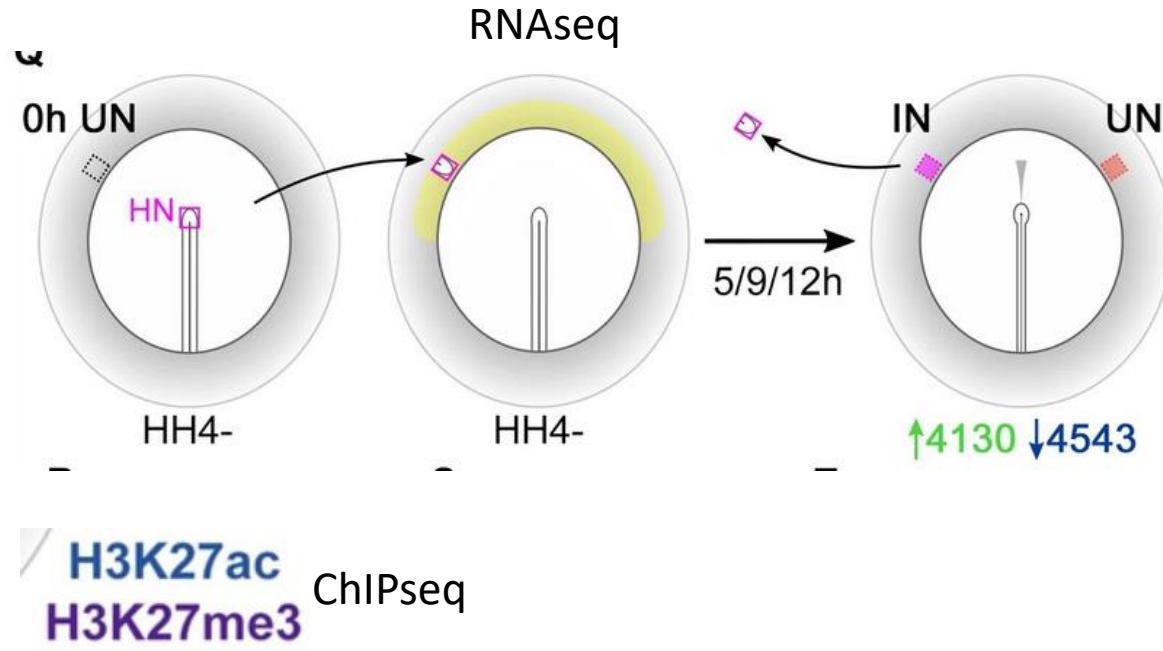
Streit et al., 1998

FGF8 induce marker neurali *area opaca*



Streit et al., 2000,
Nature

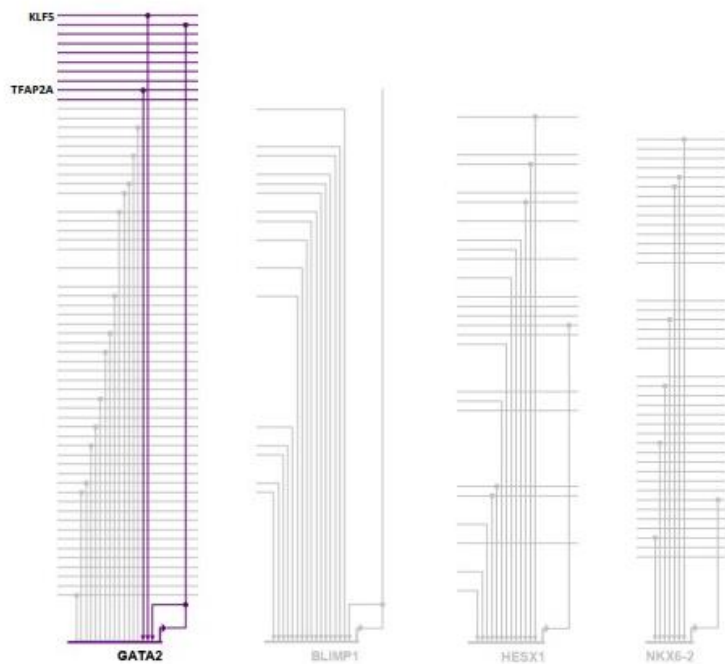
Alcătuirea unui GRN al inducției neurale



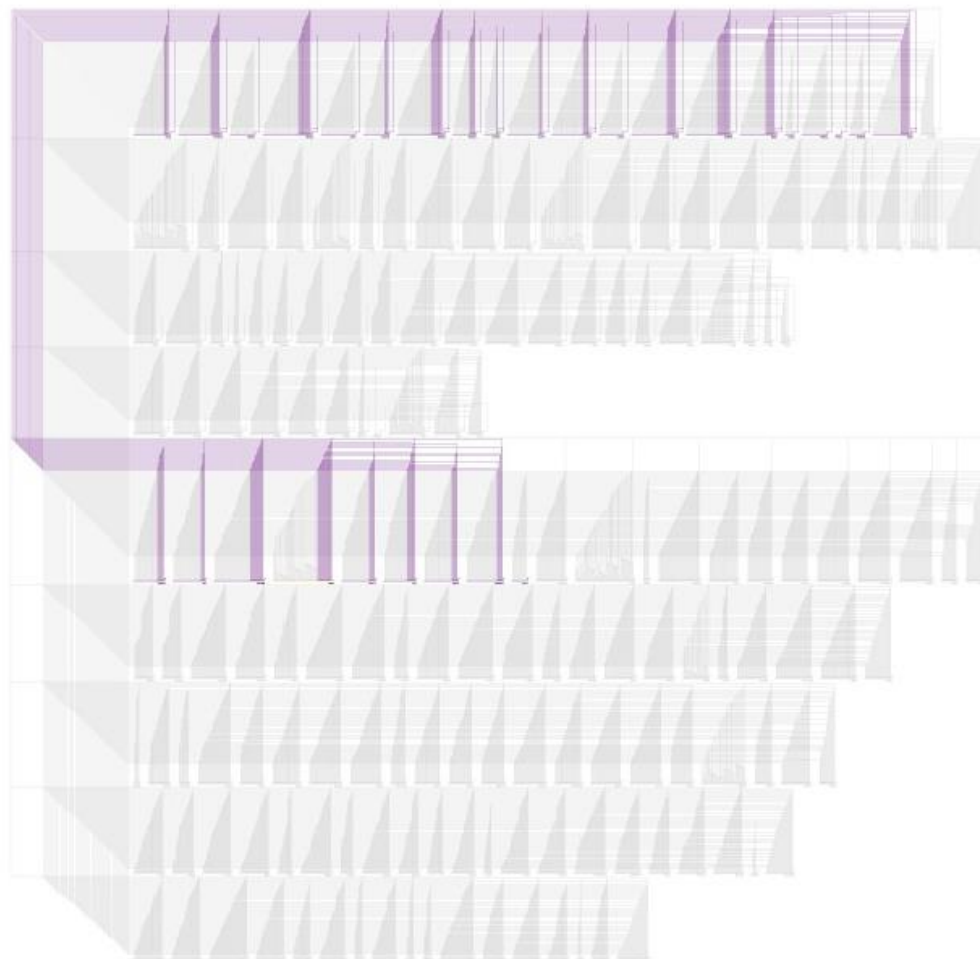
Alcătuirea unui GRN al inducției neurale

0h

29 components
206 interactions



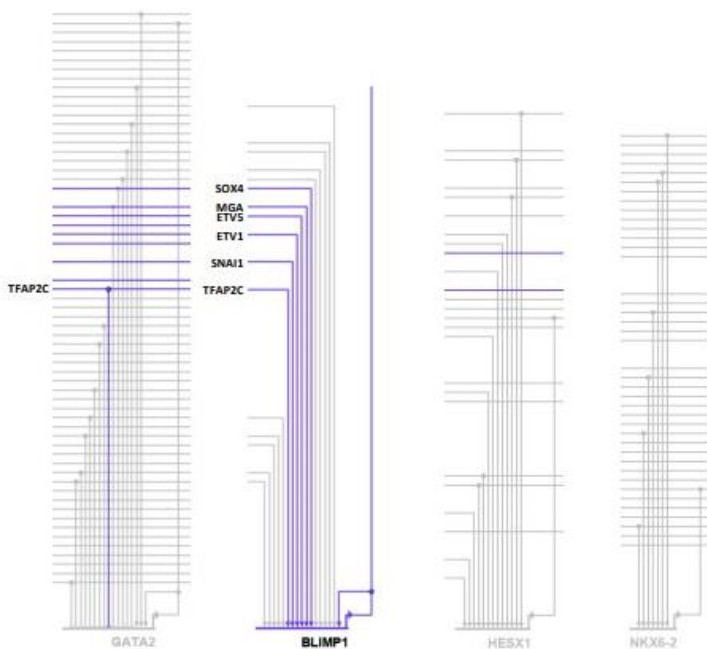
0, 1, 3, 5, 7, 9, 12h



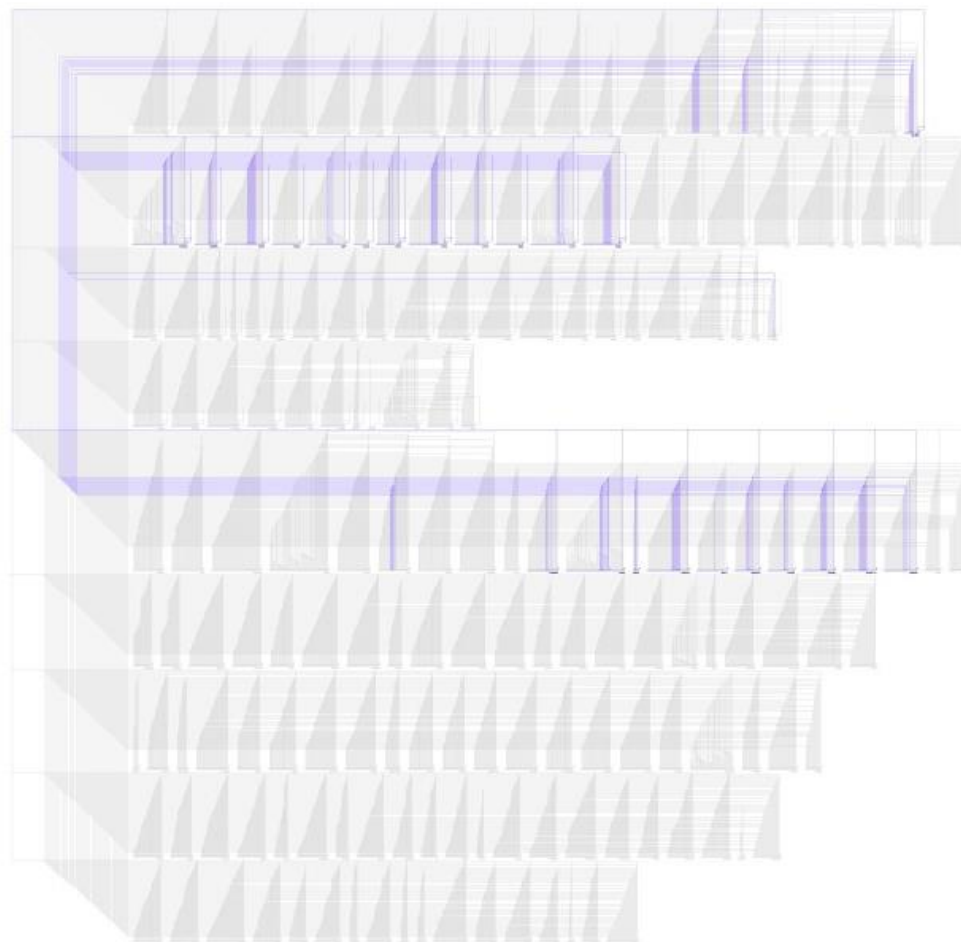
Alcătuirea unui GRN al inducției neurale

1h

28 components
172 interactions



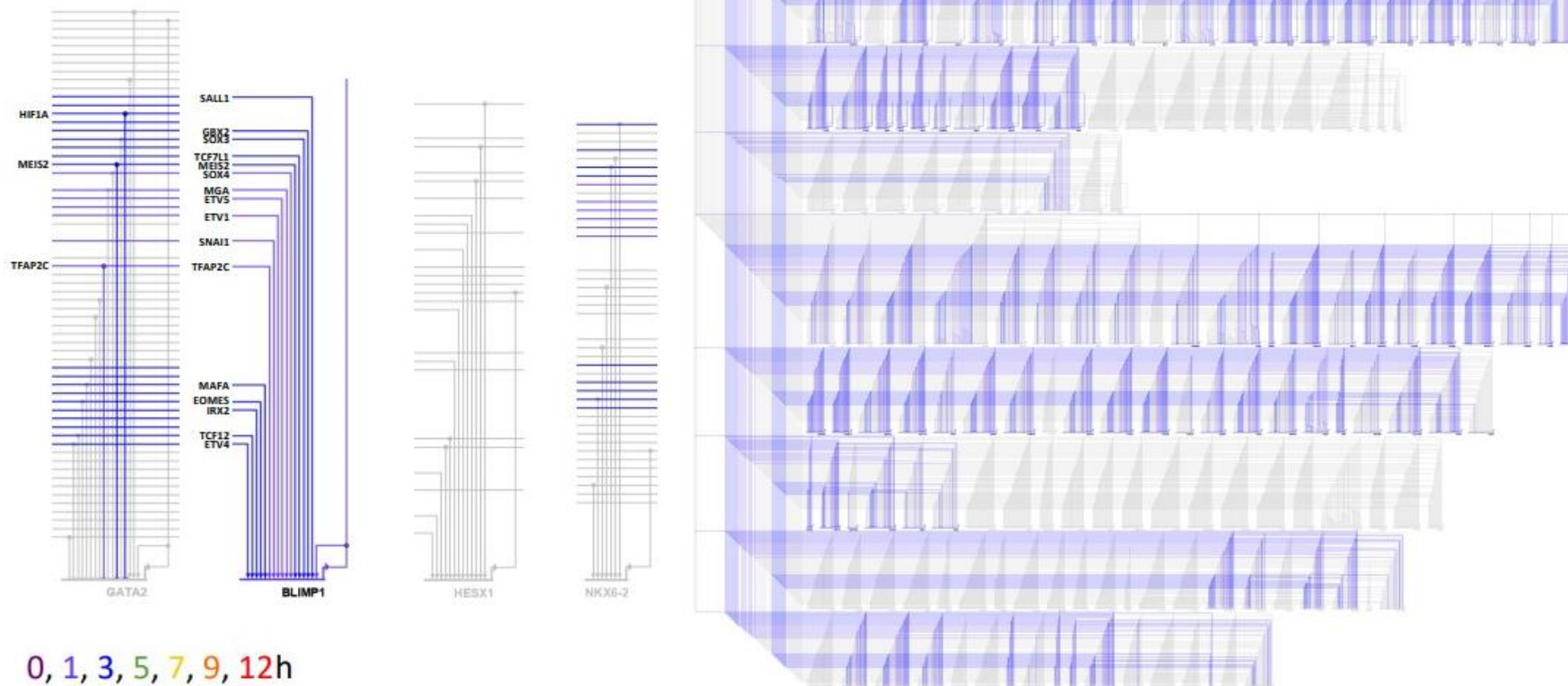
0, 1, 3, 5, 7, 9, 12h



Alcătuirea unui GRN al inducției neurale

3h

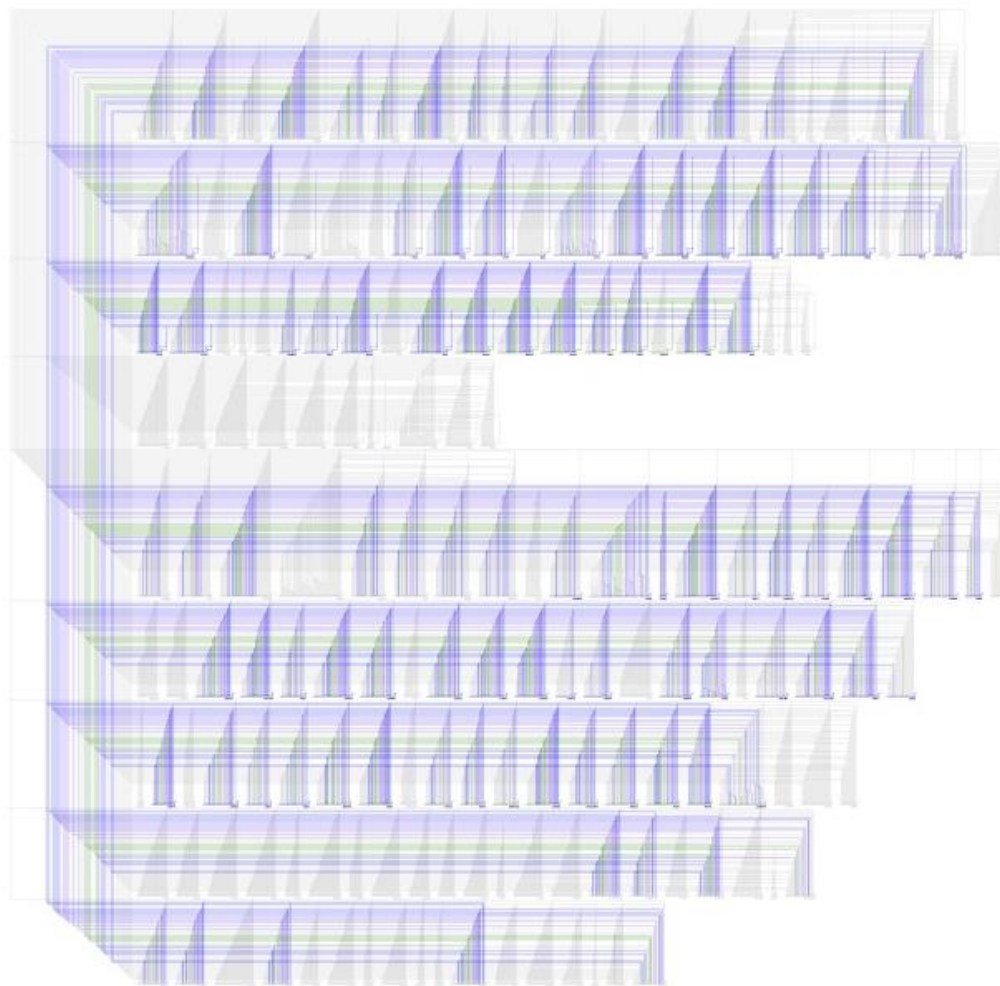
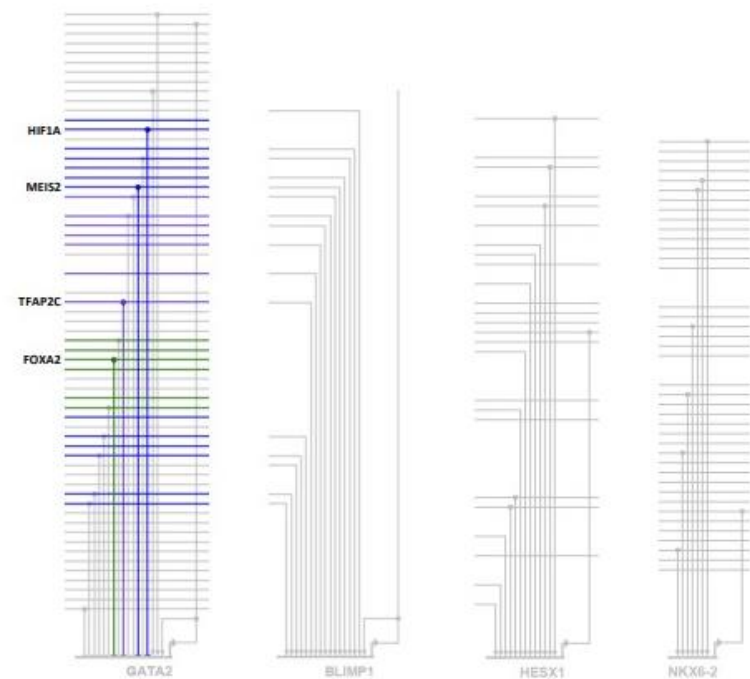
109 components
1,682 interactions



Alcătuirea unui GRN al inducției neurale

5h

105 components
1,607 interactions

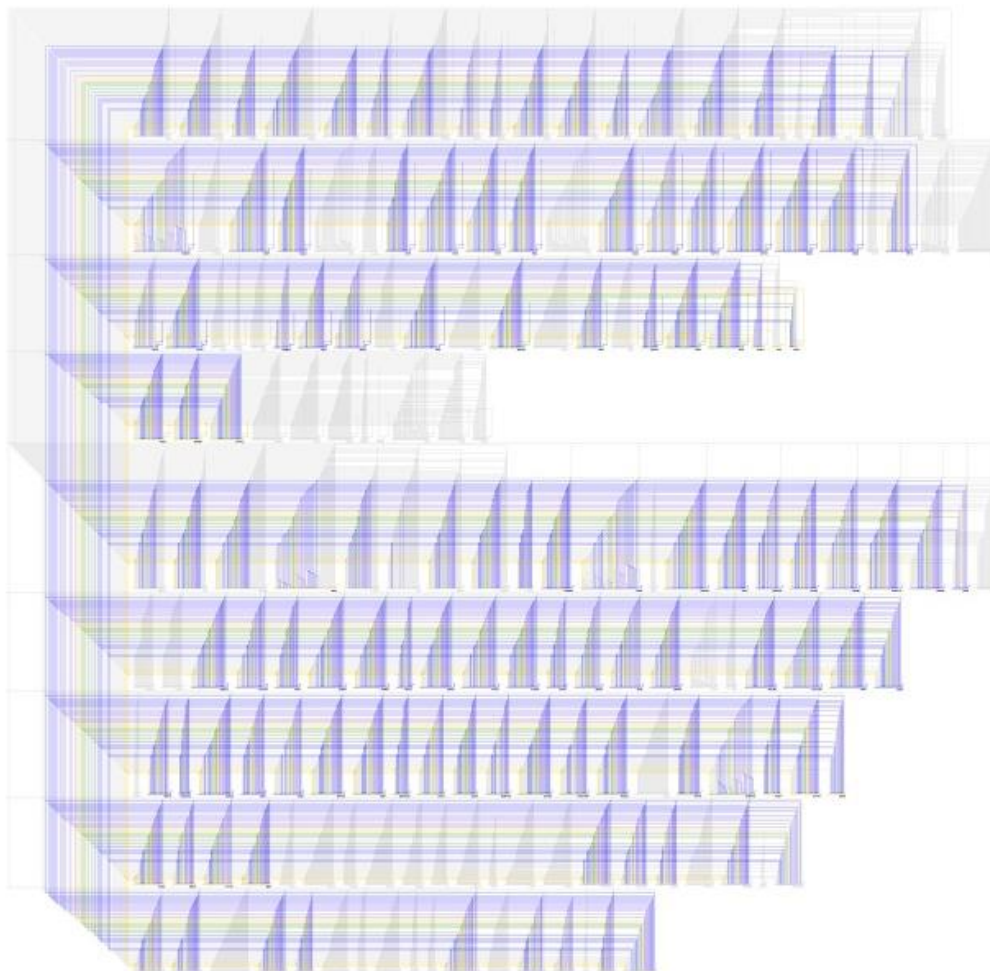
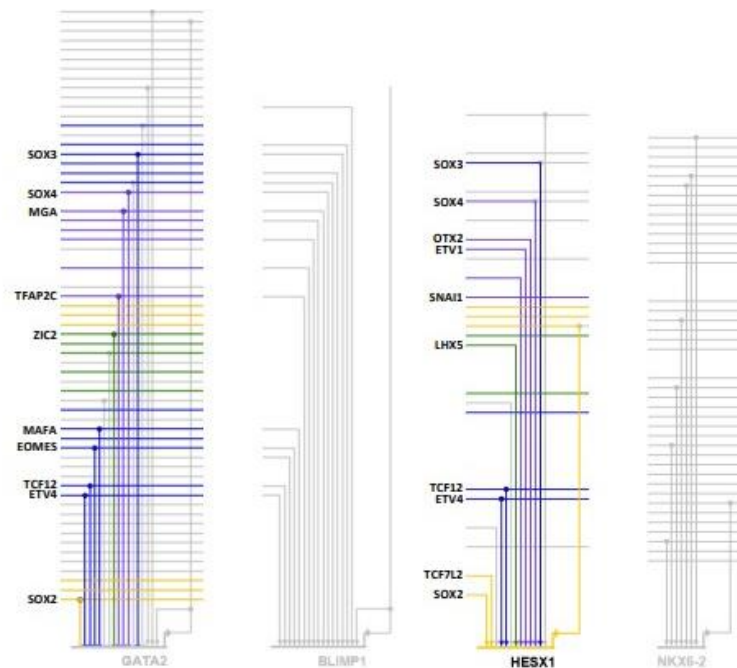


0, 1, 3, 5, 7, 9, 12h

Alcătuirea unui GRN al inducției neurale

7h

122 components
2,628 interactions

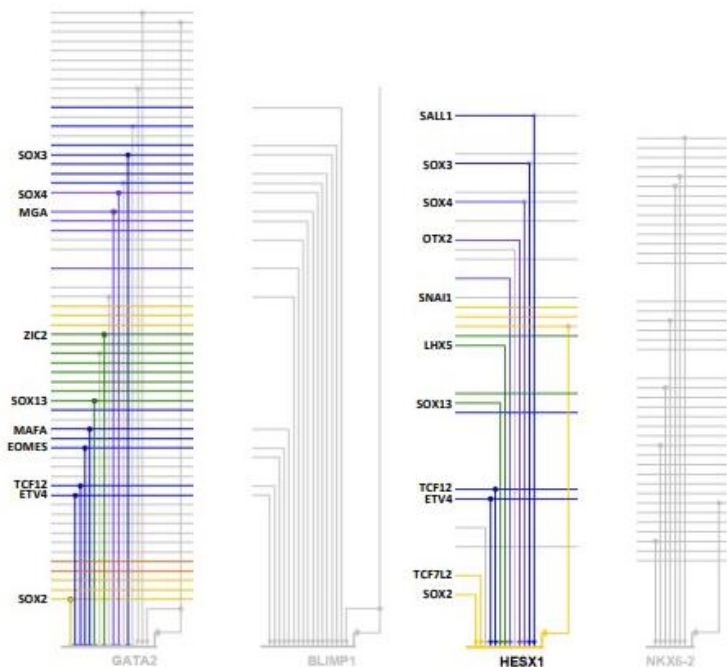


0, 1, 3, 5, 7, 9, 12h

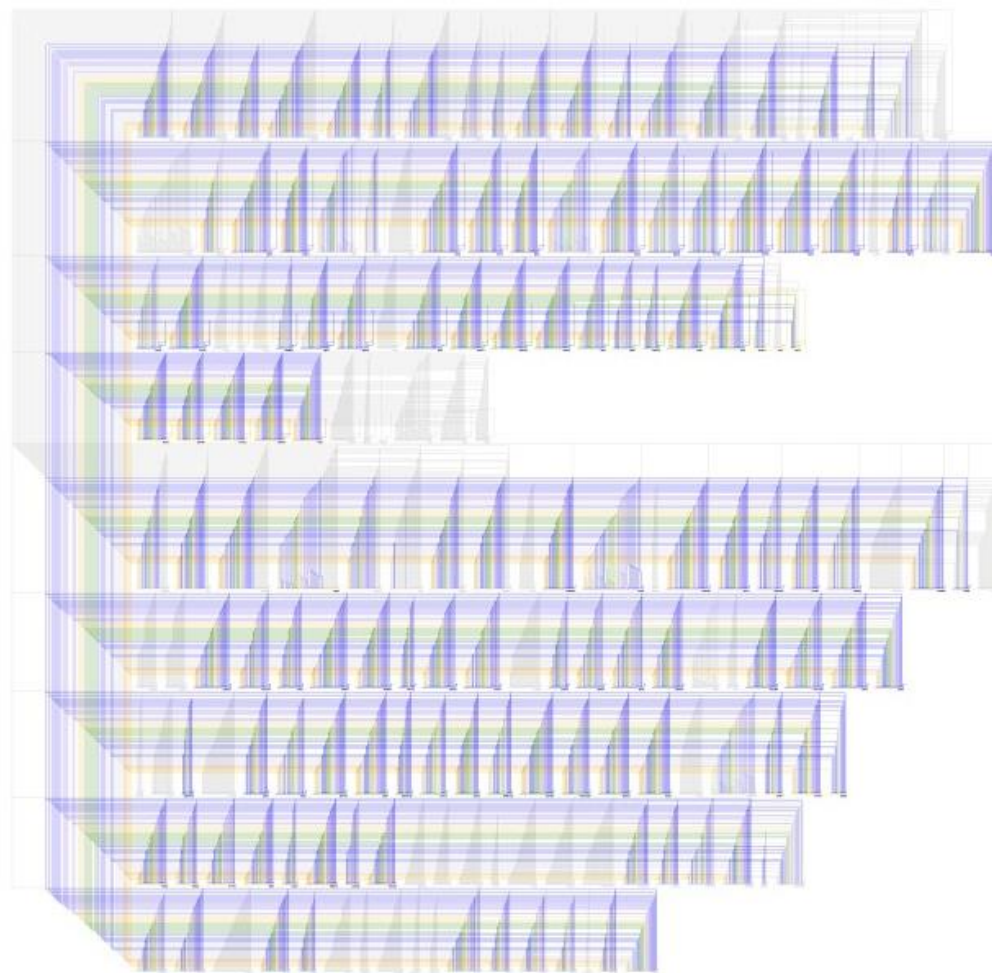
Alcătuirea unui GRN al inducției neurale

9h

132 components
2,955 interactions



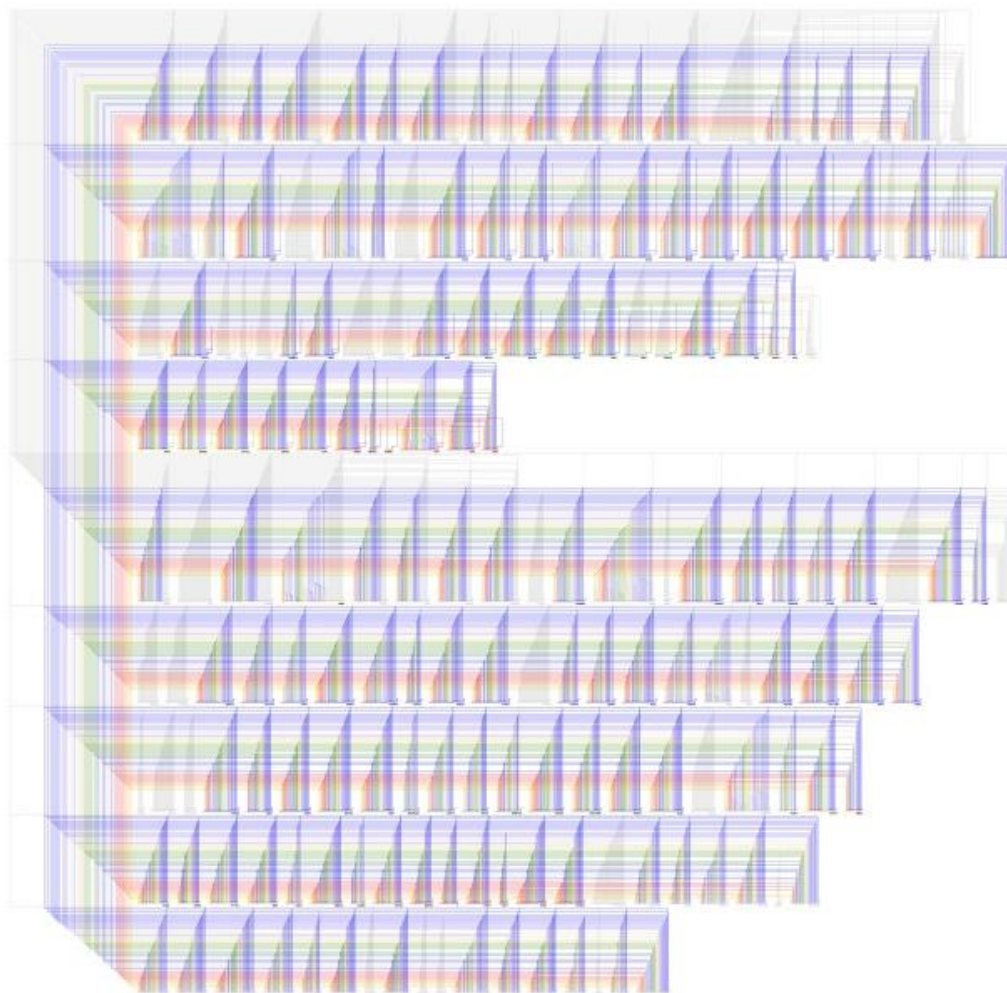
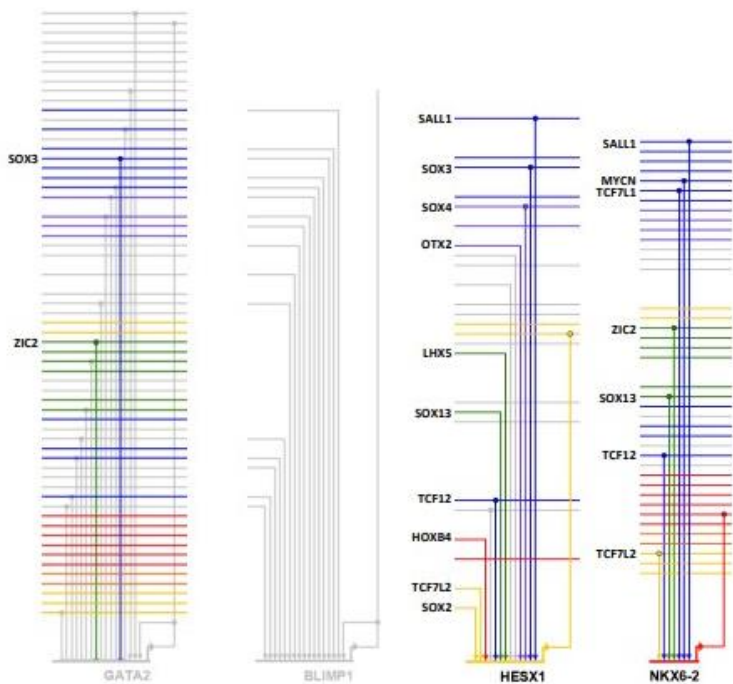
0, 1, 3, 5, 7, 9, 12h



Alcătuirea unui GRN al inducției neurale

12h

143 components
3,322 interactions

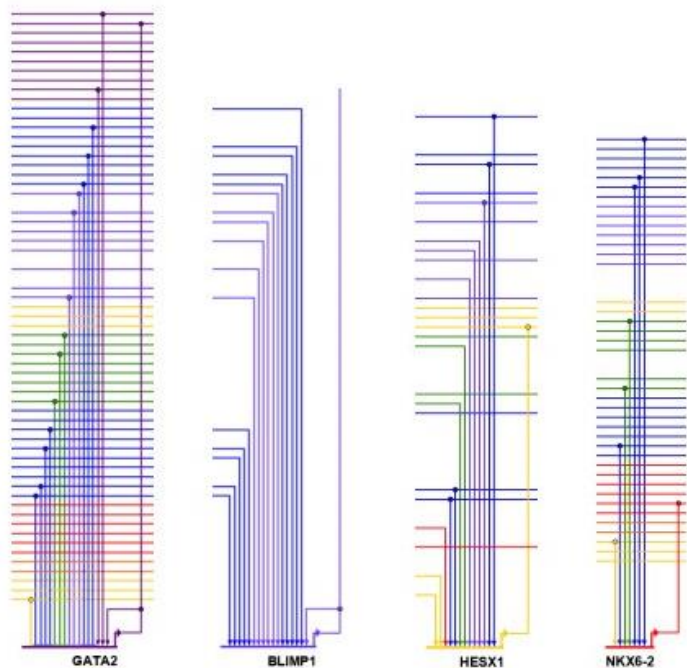


0, 1, 3, 5, 7, 9, 12h

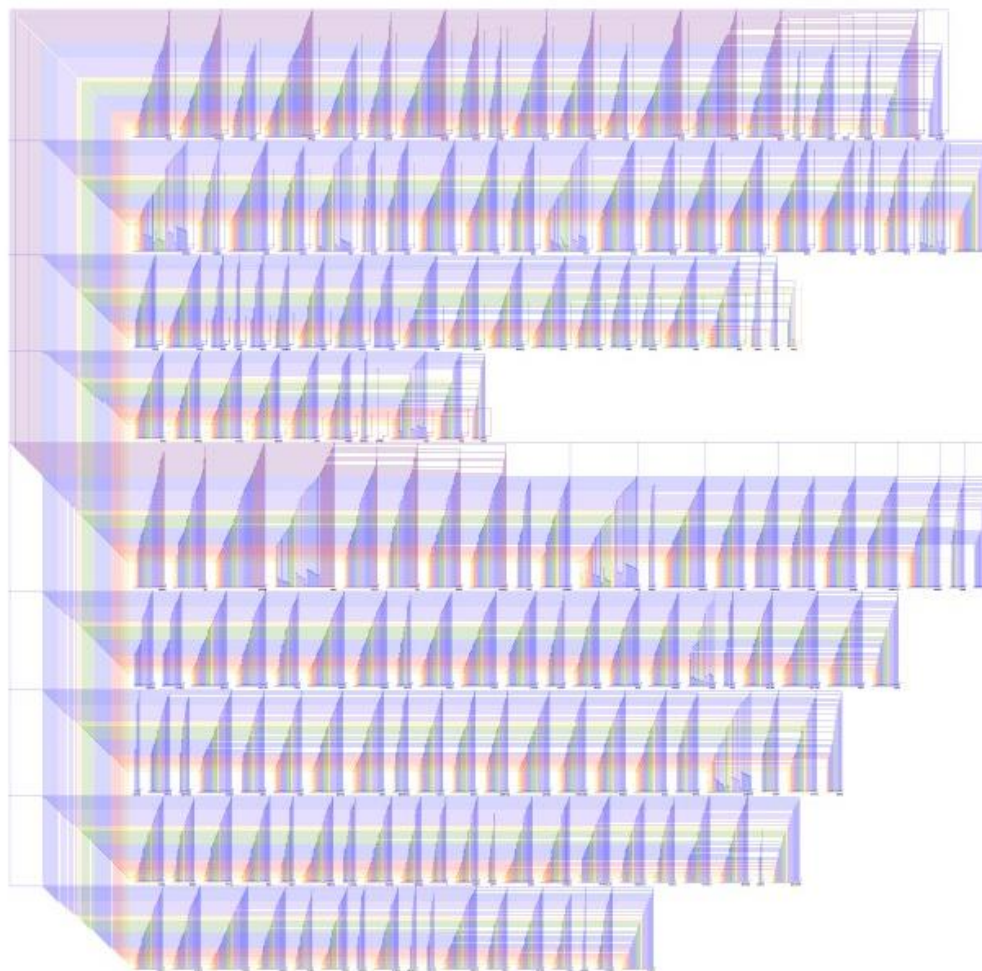
Alcătuirea unui GRN al inducției neurale

All

175 components
5,614 interactions



0, 1, 3, 5, 7, 9, 12h



Multumesc!



Claudio Stern

Katherine Trevers

Charlotte Colle

Nidia de Oliveira

Grace Lu

Hyung Chul Lee

Yara Fadaili

Preeti Dev

Cato Hastings

Adam Moverley

Irene de Almeida

Octavian Voiculescu

Claire Anderson

Leslie Dale

Roberto Mayor

Susan Evans

