Model inference from protein time-course in Hematopoietic Stem Cells (HSC)

Pandu Raharja [1,2]   Rene Schoeffel [1,2]   Michael Strasser [3]
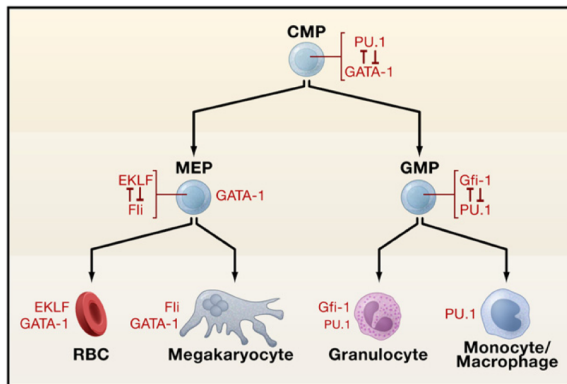
[1]Technische Universität München

[2]Ludwig-Maximilians-Universität München

[2]Institute of Computational Biology (ICB), Helmholtz Zentrum München

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Introduction

▶ Dynamics of hematopoetic stem cell maturation cell from Common Myeloid Progenitor (CMP) to Megakaryocyte-Erythroid Progenitor (MEP) and Granulocyte-Macrophage Progenitor (GMP)

[1] Graf & Enver, *Nature*, 2009

Introduction (cont'd)

- MEP and GMP yield not 50% : 50% as previously thought, but 70% : 30%
- Assumed dynamics between `Pu.1` and `Gata1` in cell maturation fate
  - Dynamics assumed to be a bistable toggle-switch system

Problems

- Stochaticity in single cell is more punctuated