

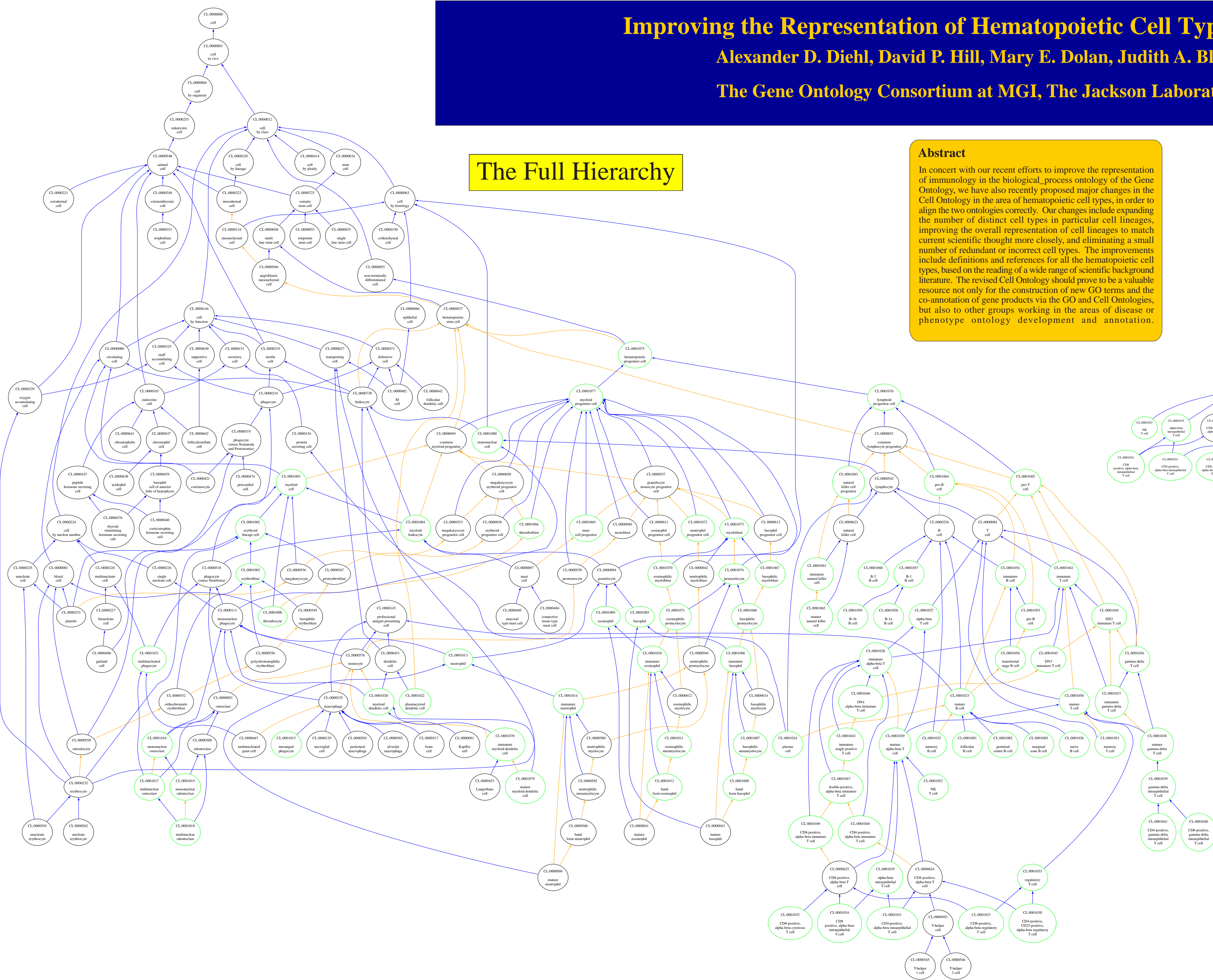
Improving the Representation of Hematopoietic Cell Types in the Cell Ontology

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The Full Hierarchy



Abstract

In concert with our recent efforts to improve the representation of immunology in the biological_process ontology of the Gene Ontology, we have also recently proposed major changes in the Cell Ontology in the area of hematopoietic cell types, in order to align the two ontologies correctly. Our changes include expanding the number of distinct cell types in particular cell lineages, improving the overall representation of cell lineages to match current scientific thought more closely, and eliminating a small number of redundant or incorrect cell types. The improvements include definitions and references for all the hematopoietic cell types, based on the reading of a wide range of scientific background literature. The revised Cell Ontology should prove to be a valuable resource not only for the construction of new GO terms and the co-annotation of gene products via the GO and Cell Ontologies, but also to other groups working in the areas of disease or phenotype ontology development and annotation.

Introduction

As part of the work on immunology in the GO, we recently proposed a major revision of the Cell Ontology for hematopoietic cells.

The existing Cell Ontology was incomplete in the area of hematopoietic cells and based on outdated or incorrect terminology.

The goal was to bring the Cell Ontology and the GO into alignment, so that the Cell Ontology can act as a base ontology for the GO and other ontologies.

Summary of Changes

84 new cell types introduced.

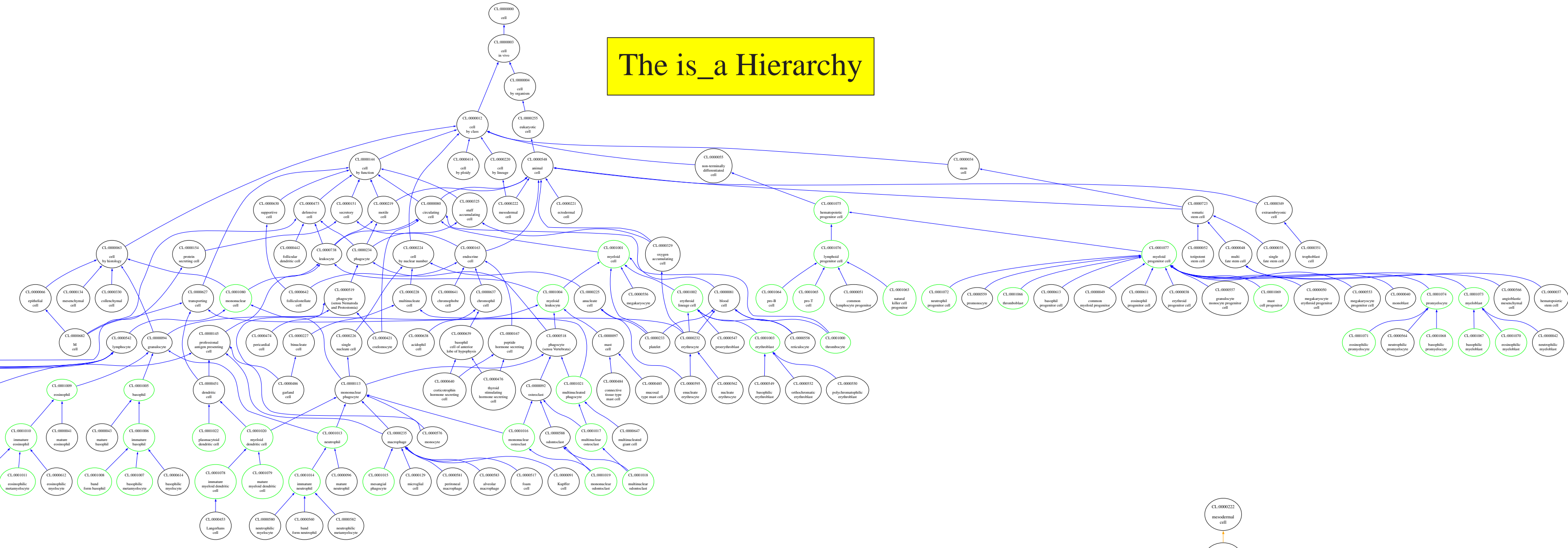
Is-a parentage provided for all hematopoietic derived cells.

Develops_from parentage provided for all major hematopoietic lineages.

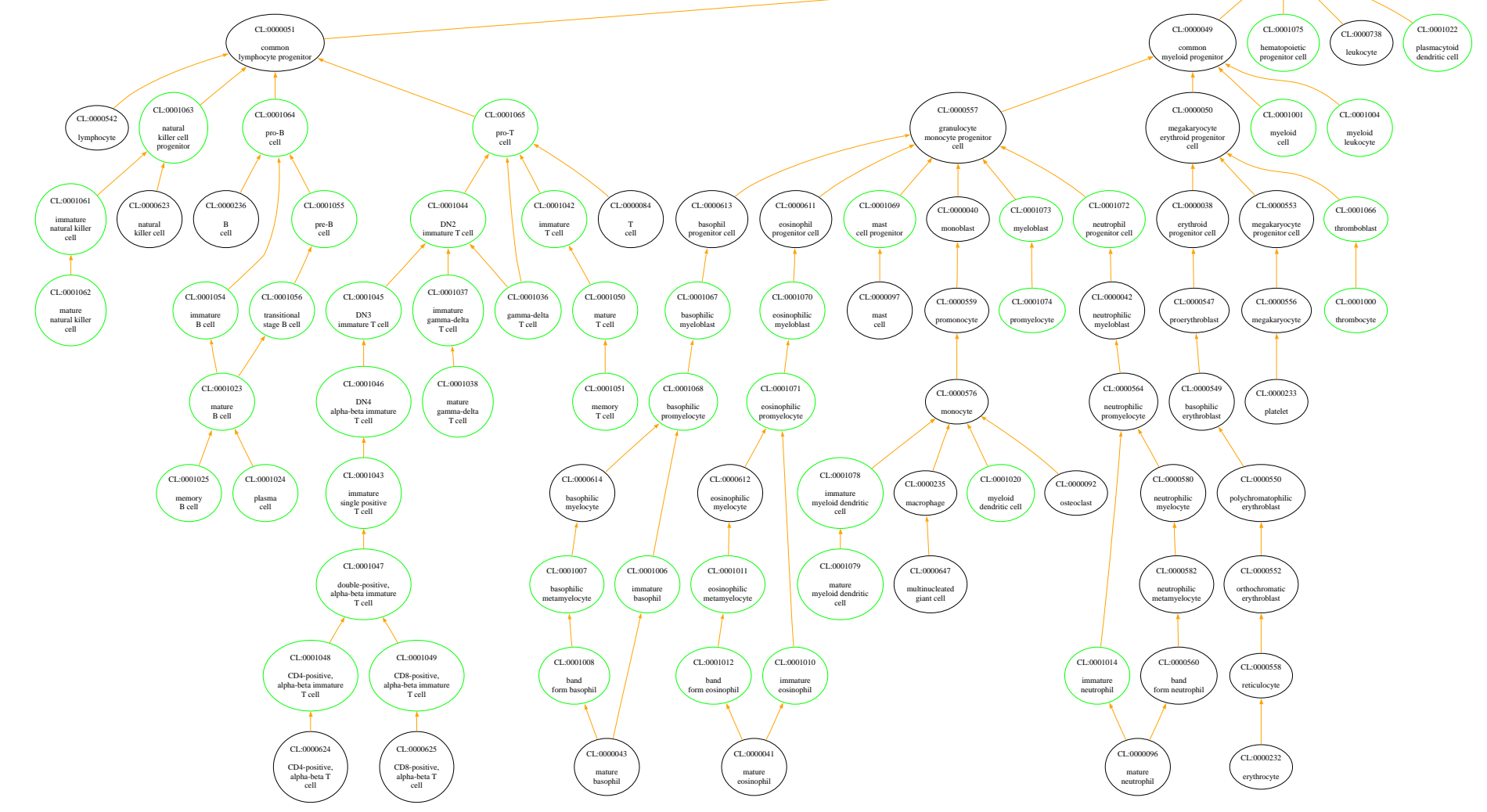
The B and T cell lineages were completely revised and greatly expanded.

Nomenclature now reflects literature better.

The is_a Hierarchy



The develops_from Hierarchy



Implementation

The term reorganization is finished and all terms have appropriate definitions and references.

The changes to the Cell Ontology will be implemented following a short review by interested parties.

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