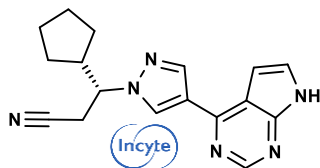
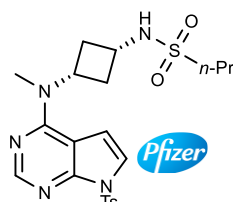


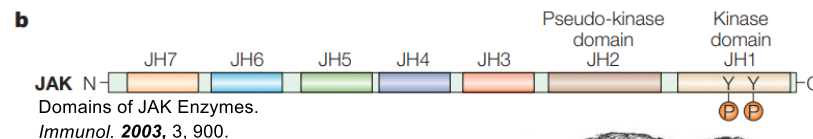
Xeljanz (Tofacitinib)  
for rheumatoid/psoriatic arthritis



Jakafi (Ruxolitinib)  
For myelofibrosis and acute Graft-versus host disease



abrocitinib

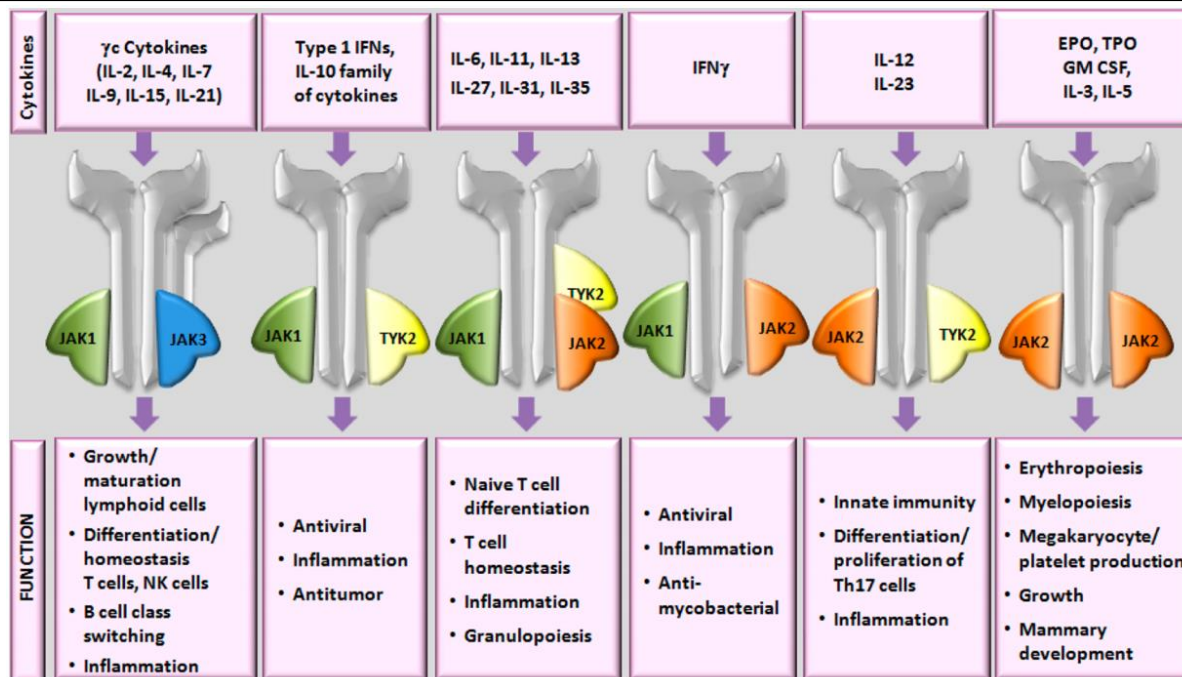


The Roman God Janus  
Image Credit:  
<http://osmosnetwork.com/>  
[janus-the-god-of-transitions/](http://janus-the-god-of-transitions/)

## Background:

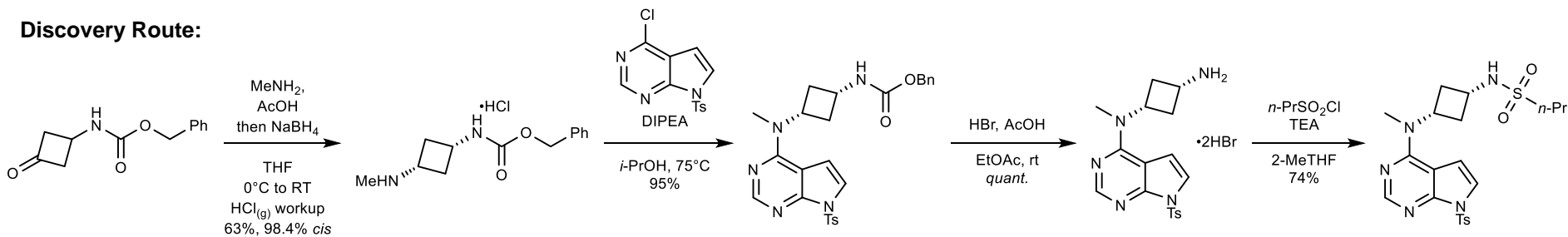
- Janus Kinases (JAK) are a series of enzymes involved in the signaling pathways of growth factors and cytokines.
- These growth factors and cytokines, in turn, are involved in immunity, inflammation responses, and the production of new blood cells.
- Abrocitinib (center) is a novel selective inhibitor of JAK-1, approved in 2018 for the treatment of moderate to severe atopic dermatitis (eczema).

## The JAK Pathways:



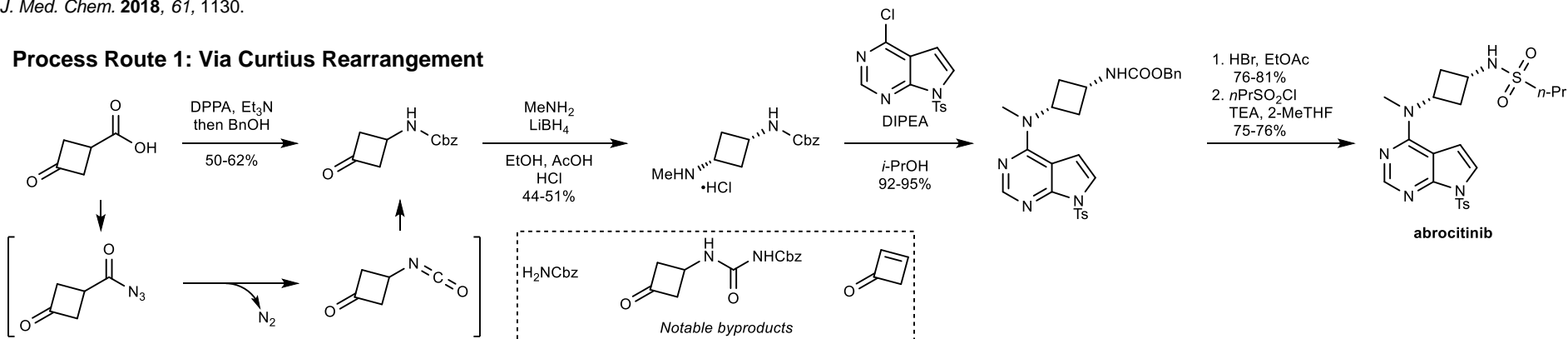
*J. Med. Chem.* **2018**, 61, 1130.  
*Nat. Rev. Immunol.* **2003**, 3, 900.  
doi: 10.1021/acs.oprd.0c00366

## Discovery Route:

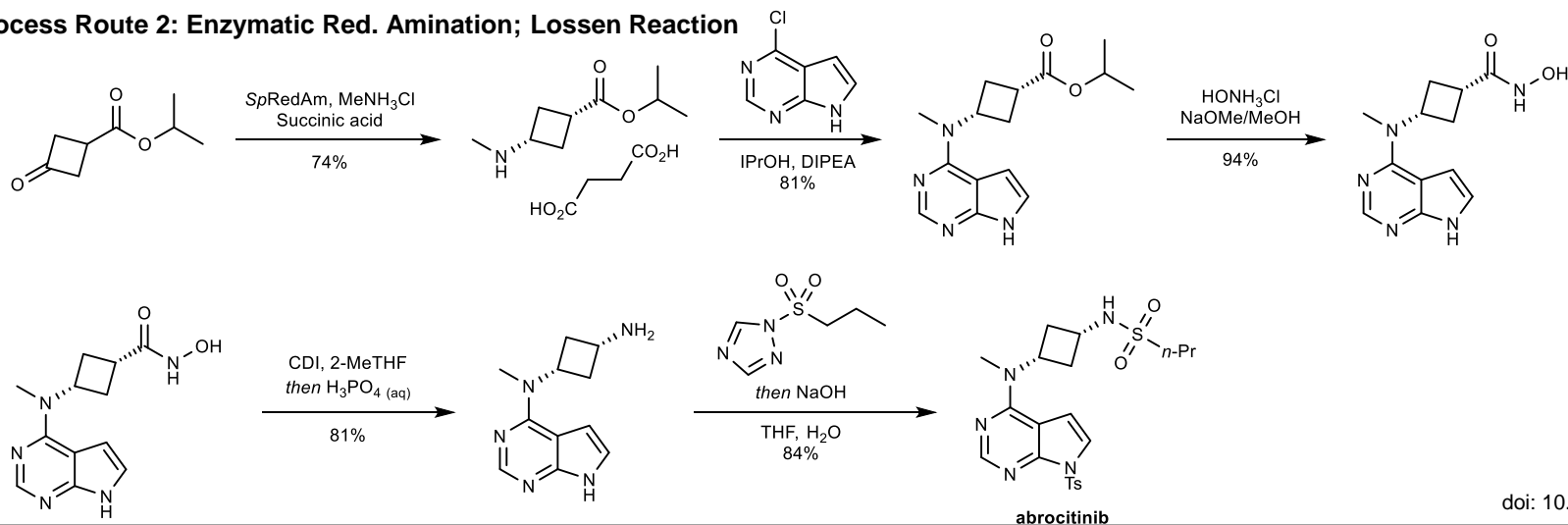


*J. Med. Chem.* **2018**, *61*, 1130.

## Process Route 1: Via Curtius Rearrangement



## Process Route 2: Enzymatic Red. Amination; Lossen Reaction



doi: 10.1021/acs.oprd.0c00366