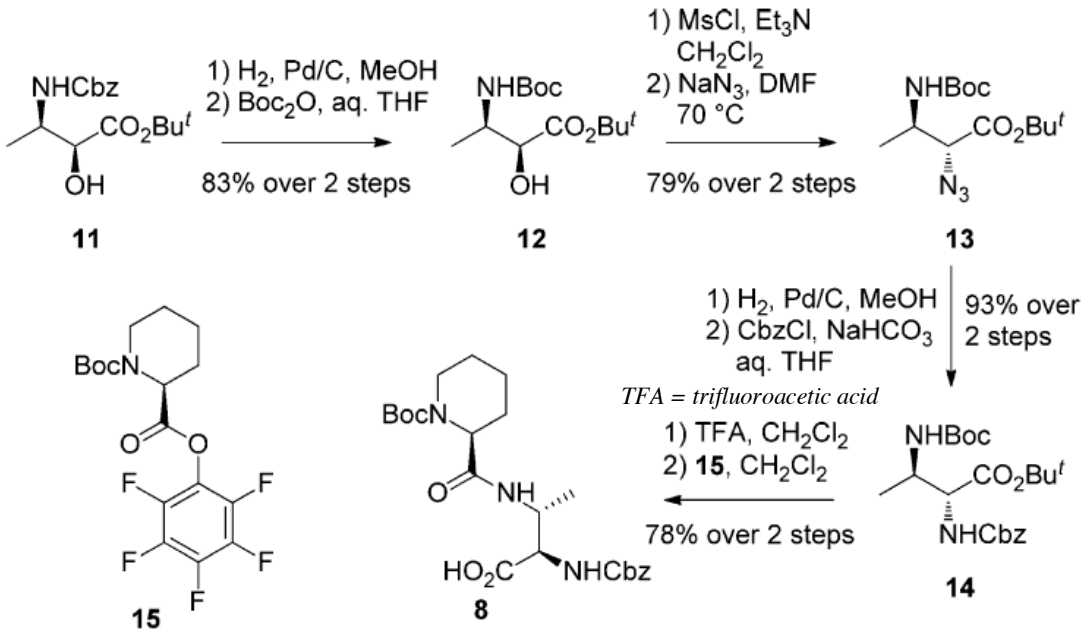
CHM 4220, Organic Synthesis, Dr. Laurie S. Starkey, Cal Poly Pomona
Amine Synthesis & Protective Groups

What is happening in each step in the following synthetic scheme? *J. Org. Chem.* **2014**, *79*, 2580–2590.
e.g., Protective group (PG) on, PG off, oxidation, reduction, substitution (what is LG?), something else?



11 → 12

Step 1

Step 2

12 → 13

Step 1

Step 2

13 → 14

Step 1

Step 2

14 → 8

Step 1

Step 2

Acidic conditions removed which protective group(s)?
Draw the protective group and propose a mechanism for removal.

Catalytic hydrogenation removed which protective group(s)?
Draw the protective group and identify the structural feature that makes the group subject to hydrogenolysis.

QR code leads to Protective Groups at www.organic-chemistry.org (or Google "BOC protective group")