

Group Meeting Questions: 27/5/11

Here is presented a recent total synthesis of enantiopure (-)-cocaine **8** in 13% overall yield over 15 steps.

Provide answers for the following:

- Mechanistic explanations for the transformation of D-(-)-ribose **1** to intermediate **2**.
- Suggest a synthetic sequence to convert intermediate **2** to product **3** (3-5 steps)
- Provide a mechanism to explain conversion of intermediate **3** to product **4**
- Provide an explanation for the conversion of **4** to **6**
- Identify intermediate **7** from the reagents given **and** the mass spectrometry data, then rationalise the related final synthetic sequence to afford (-)-cocaine.

